IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF IDAHO

Rebecca Roe, *et al.*, Plaintiffs, v. **Debbie Critchfield**, *et al.*, Defendants.	Case No. 1:23-cv-315

EXPERT REPORT OF JAMES M. CANTOR, PH.D

Table of Contents

Part 1: Background **7**

I. Credentials and Qualifications. **7**

A. Executive Summary. 7

B. Education and professional background. 9

C. Clinical expertise vs. scientific expertise. 13

D. The professional standard to assess treatment models is to use objective assessors, not the treatment-providers in conflict of interest with the result. 14

E. Basis of My Opinions. 16

Part 2: Central Terminology and Concepts **21**

II. Definitions of *sex* and *gender identity*. **21**

A. What determines the correct definition of a term differs in each of science, law, professional policy, and lay language. 21

B. *Sex* and *sex-assigned-at-birth* represent objective features. 22

C. *Gender identity* refers to subjective feelings that cannot be objectively defined, measured, or verified by science. 23

III. Gender Dysphoria is a *mental health* diagnosis: It does not meet the criteria of a *medical* diagnosis. **24**

A. Mental health diagnoses are categorically distinct from medical diagnoses, lacking physical or objective features for validation or falsification. 24

B. *Gender Dysphoria* is a mental health diagnosis. 26

IV. Adult-, adolescent-, and childhood-onset gender dysphoria represent distinct phenomena with objectively distinct features, with no justification for generalizing observations based on one type to other types. **26**

A. The demographic and clinical epidemiology profiles differ across adult-, adolescent-, and childhood-onset gender dysphoria. 26

B. Outcomes associated with one demographic or diagnostic group cannot be generalized to other groups, remaining experimental until tested. 27

C. *Adult-Onset* Gender Dysphoria occurs nearly exclusively in biological males who experience specific sexual interest pattern (a paraphilia called *autogynephilia),* and typically adjust well to a social role as female under certain conditions including successful completion of *"real life experience."* 29

D. *Childhood-Onset* Gender Dysphoria (prepubertal-onset) is a majority male phenomenon that, when not transitioned, typically desists and develops into gay or lesbian identities. 30

E. *Adolescent-Onset* Gender Dysphoria is a largely unstudied and majority female phenomenon, with distinct features, unobserved before the social media age, but becoming the predominant type since… 32

V. The features of adolescent-onset gender dysphoria are much better explained by social-contagion and social-media than by sex differences in the brain or sexual-minority-stress. 36

A. Social influence on the social development of adolescent females in the social media age. 36

B. The explosive increase in occurrence of gender dysphoria throughout the industrialized world coincided exactly with social media culture. 37

C. Data also show a sharp decrease in mental health among teens since the wide uptake of social media. 39

D. The post-2011 crisis in mental health, like the explosion of gender dysphoria referrals, has been a largely female phenomenon. 40

E. The post-2011 decrease in mental health and increase in gender dysphoria is recognized as co-occurring with adolescents' uptake of smartphones. 43

F. Multiple detransition studies confirm features consistent with the hypothesis that adolescent-onset gender dysphoria is largely a social contagion phenomenon. 45

G. Suicidality in adolescents has skyrocketed since social media. 48

H. Neuroimaging studies have associated brain features with sex, sexual orientation, and atypical sexualities (paraphilias), but not gender identity. 49

I. Sexual minority stress fails to explain many of the features of adolescent-onset gender dysphoria. 51

Part 3: The Scientific Method and Criteria to Assess Research 54

VI. The standard for developing *Clinical Practice Guidelines* is *Evidence-Based Medicine* based on formal *Systematic Review* of the evidence. 54

A. Evidence-Based Medicine applies the scientific method to clinical decisions to manage and minimize cognitive biases. 54

B. The systematic review process prevents the cherry-picking of studies that favor a particular result. 57

C. Systematic review ensures all studies are uniformly assessed with the same criteria. 58

D. Each treatment outcome study is assessed for its *risk of bias* and combined with other features to rate the *quality of evidence* (aka *confidence of evidence)* for the treatment overall. 60

VII. The quality of the types of clinical outcomes studies follows a hierarchy represented as the *Pyramid of Evidence*. 61

A. The highest level of evidence is the most resistant to bias, providing findings with the greatest certainty. 61

B. *Randomized Controlled Trials* (RCT) are the most reliable test of a treatment's effects, with lesser designs showing correlation instead of causality. 63

C. *Cohort studies* are the highest level of evidence about medicalized transition currently available. 63

D. *Surveys* are not capable of demonstrating treatment safety or treatment effectiveness. 64

E. *Expert opinion* is the least reliable source, being susceptible to the structural biases above plus personal biases of the individual expert, for which evidence-based medicine was designed to compensate. 64

VIII. Methodological defects limit or negate the evidentiary value of many studies of treatments for gender dysphoria in minors. 65

A. In science, to be valid, a claim must be objective, testable, and falsifiable. 65

B. Correlation does not imply causation. 65

C. Confounding: When gender transition is accompanied by psychotherapy, it cannot be known which one caused the changes observed. 66

D. Cohort study findings are vulnerable to multiple factors that mimic treatment effectiveness (maturation, attrition, and regression to the mean). 66

E. Studies lacking control groups cannot show treatment effectiveness. 68

F. Non-representative samples, such as Internet surveys, lack *external validity:* Their results do not apply outside the study population. 68

G. Clinical "gate-keeping" permitted only the mentally healthy to transition, establishing a *selection bias,* a statistical illusion of improved mental health. 69

IX. Four components are required for clinical decision-making—*Risks, Benefits, Alternatives,* and *Uncertainties*—with the absence of any invalidating the decision. 69

A. Treatment safety and effectiveness are assessed relative to each other as a risk-to-benefit ratio, not as "safe" or "effective" relative to one threshold. 70

B. The acceptability of risk-to-benefit ratios differ with the presence versus lack of alternatives and with diagnostic uncertainty and other unknowns. 71

C. Evidence-Based Medicine opposes *discordant guidelines*—strong recommendations based on low quality evidence. 72

Part 4: Outcomes of Gender Transition in Minors 75

X. Gender transition spans both medical and non-medical interventions, each carrying both medical and psychological implications. 75

XI. Social changes to sex-specific indicators of gender status comprise *social transition,* a highly significant psychological intervention, with potentially profound and enduring consequences. 76

XII. Social transition of children is associated with greatly elevated persistence of gender dysphoria, rates of medical transition, and its risks to physical health. 77

A. Absent social transition, childhood-onset gender dysphoria desisted for the majority of children, in all 11 of the 11 existing outcomes studies. 78

B. The two follow-up studies which included children who underwent social transition found gender dysphoria persisted for the great majority. 81

C. The distinct outcomes of youth who underwent social transition versus those who did not is accepted even by groups that endorse medical transition. 82

XIII. Systematic review shows social transition to be unassociated with benefits to mental health. 83

A. The only systematic review of social transition outcomes in minors is from the *Cass Report,* which found the studies to be at high risk of bias and to fail to show mental health to improve. 83

B. Subsequent studies of social transition continue to confirm a lack of benefits to mental health. 86

XIV. Systematic reviews of medical transition consistently show the research to be low quality and unassociated with benefits to mental health 88

XV. Medical transition is associated with substantial medical risks of harms. 93

A. In minors, harms of puberty-blockers (especially if followed by cross-sex hormones) include sterility, loss of bone mass, and abnormal brain development. 94

B. In adulthood, long-term hormone use is linked to poor health indicators and greater frequencies of multiple diseases, and significant proportions of genital surgeries have surgical complications and urinary defects. 98

XVI. *Suicide* and *suicidality* are distinct phenomena representing distinct mental health issues, and neither is shown in reliable evidence to be reduced. 101

A. Suicidality is substantially more common among females, but suicide, among males. Sexual orientation is strongly associated with suicidality, but much less so with suicide. 102

B. Systematic reviews consistently find transition not to be associated with reductions of suicide or suicidality in minors or adults. 103

Part 5: Lack of Evidence and Consensus 107

XVII. Both the *known-unknowns* and *unknown-unknowns* are acknowledged by clinical scientists, international healthcare authorities, and even transition advocates. 107

A. Governmental health care agencies conducting systematic reviews consistently conclude transitions in minors to be *experimental*. 107

B. There is no effective method of identifying the children for whom gender dysphoria will persist versus desist. 108

C. Multiple other risks are suggested by preliminary research and remain unstudied, rather than ruled out. 109

D. The many groups acknowledging untested hypotheses, continuing unknowns, and lack of research include WPATH. 110

E. WHO excluded minors from clinical guidelines, due to lack of evidence. 112

XVIII. There is no consensus regarding gender transition in minors beyond acknowledgment of its many unknowns and lack of reliable evidence. 112

Part 6: Assessment of Specific References 117

XIX. Dr. Budge's report does not employ any established standard for objectively selecting and assessing research studies in clinical science, instead engaging in the very cherry-picking and biased criteria that evidence-based practice was developed to prevent. 117

A. Dr. Budge relies on clinical experience, rather than evidence-based medicine. 117

B. Dr. Budge relies on surveys and self-report studies that have significant methodological flaws. 120

C. Dr. Budge expressed opinions outside her expertise. 120

D. Dr. Budge is wrong to say that "biological sex" is an inaccurate or imprecise term. 120

E. Dr. Budge is wrong to say that the neuroimaging studies suggest that gender dysphoria is biologically based. 123

F. Contrary to Dr. Budge's report, science does not show that youth benefit from social transition, nor that it reduces suicide or suicidality. 125

G. Dr. Budge's reliance on minority stress theory is misplaced. 125

H. The changes in Dr. Budge's 2023 and 2025 declarations reflect the debunking of "authorities" like WPATH and further demonstrate the low quality of evidence that social or medical transitions are beneficial. 125

I. Dr. Budge points to select correlations without considering other possible explanations. 126

Declaration of James M. Cantor, PhD. 128

List of References 129

List of Appendices 149

PART 1:
BACKGROUND

I. Credentials and Qualifications.

1. I am over the age of eighteen and submit this expert declaration based on my personal knowledge and experience.

2. I have been retained by Plaintiffs in the above-captioned lawsuit to provide an expert opinion on: the status and reliability of the current science of gender dysphoria and its development; the risks, benefits, and unknowns of the medical and non-medical alternatives available for managing the needs and environments of people expressing gender dysphoria; the standards and procedures that constitute Evidence-Based Medicine (EBM) and Evidence-Based Practice in health care and mental health care policy development; the status of transition of gender in minors as medically necessary; and the consensus on these issues of community of experts studying them.

3. My opinions contained in this report are based on my education and training in the conduct and assessment of research methodology and design, human sexuality and its development, both in clinical and in forensic applications; statistical analysis in the behavioural sciences; my international history of assessing my peer scientists work, from research proposals and grant applications to evaluations of results as peer reviewer and Editor-in-Chief of a peer reviewed journal studying human sexuality.

A. Executive Summary.

4. Policy decisions for protecting the public ideally follow from reliable evidence comparing the outcomes of the available alternatives; however, there does not exist a body of research testing the effects of alternatives specific to the assignment or access to sex-segregated privacy spaces, such as overnight rooming, for minors who express gender dysphoria or transgender identities without a diagnosis of gender dysphoria. Rather, the available research science pertains to their *social transition* overall, of which using self-reported gender to access sex-segregated privacy spaces is a

single component. The existing research on social transitioning such minors is limited and low quality, providing only unreliable and uncertain results which may be substantially different from its actual effects.

5. Relevant to the present case are three well-established research findings about prepubescent children who express gender dysphoria: (1) The majority who are not permitted to undergo social transition cease to feel gender dysphoric with puberty, and no method has been developed for reliably predicting which cases of gender dysphoria are likely to persist. (2) Those youth who are permitted to transition socially are very likely to continue experiencing gender dysphoria and to undergo medical transition. (3) Social transition does not improve the mental health or resolve the distress expressed by gender dysphoric youth.

6. The ethical decisions require the integration of four components and cannot be made when ignoring any one of them: *risk* of harm, potential *benefit*, available *alternatives,* and remaining *unknowns* and uncertainties. It is a false equivalence to compare situations if they do not match on any of these features: e.g., decisions made when we have no choice are unlike decisions made when there are alternatives available; decisions made when a diagnosis is objectively verifiable, such as by blood test, are unlike decisions made when a diagnosis is a uncertain or unverifiable; etc.

7. In situations such as the present one, with substantial medical harms being risked and many unknowns remaining, the burden of proof is not neutral: Although it may not be unreasonable to explore potential benefits of social transition in minors, actively engaging in such procedures bears the burden of proof to demonstrate its effectiveness being greater than the risks of the medical harms it invokes. (See Section IX.B. on *Acceptability of Risk-to-Benefit Ratios.*)

8. Very many sources of bias—ideological, financial, and political—influence public and professional opinion regarding gender transition. Statements of support for facilitating transition follow from subjective and unreliable procedures that are

the most susceptible to bias, and policies restricting transition are those that follow from objective application of standard and widely accepted criteria. Especially in the current, highly politicized environment, the relative value of statements from seeming authorities and associations depends on the rigour of the processes used in formulating those statements, not by their perceived prestige or history. Very many assertions being circulated regarding these issues have failed to employ the methods those authorities used with prior issues.

9. In the present situation, the clinical science indicates that participating in the social transition of youth is potentially *iatrogenic:* that social transition increases the probability that the child's gender dysphoria will continue instead of resolve and will lead to medical interventions which in their turn impose otherwise avoidable risks. The primary treatment alternative to alleviate the distress and other mental health symptoms expressed by these youth is psychotherapy. Although the state of the science does not permit definitive statements that would pertain to all cases, the data consistently indicate that the amount of harm being done by unnecessary social transition and the medicalization to which it leads is much greater than that imposed by delaying transition to older ages.

B. Education and professional background.

10. I am a sexual behaviour scientist, with an internationally recognized record studying the development of human sexualities, and an expert in research methodology of sexuality. My curriculum vitae is attached as Appendix 1 to this report. My publication record includes both biological and non-biological influences on sexuality, ranging from pre-natal brain development, through adulthood, to senescence. The primary, but not exclusive, focus of my own research studies has been the development of atypical sexualities. In addition to the studies I myself have conducted, I am regularly consulted to evaluate the research methods, analyses, and proposals from sexual behaviour scientists throughout the world. The methodologies I am qualified

to assess span the neurochemical and neuroanatomic level, individual behavioural level, and social and interpersonal levels.

11. I am trained as a clinical psychologist and neuroscientist, and I am the author of over 50 peer-reviewed articles in my field, spanning the development of sexual orientation, gender identity, hypersexuality, and atypical sexualities collectively referred to as paraphilias. Although I have studied many atypical sexualities, the most impactful of my work has been MRI and other biological studies of the origins of pedophilia. That work has revolutionized several aspects of the sex offender field, both with regard to the treatment of offenders and to the prevention of sexual abuse of children. In 2022, I received the Distinguished Contribution Award from the Association for the Treatment and Prevention of Sexual Abuse in recognition of my research and its integration into public policy. My efforts in this regard have been the subject of several documentary films.

12. Over my academic career, my posts have included Senior Scientist and Psychologist at the Centre for Addiction and Mental Health (CAMH), and Head of Research for CAMH's Sexual Behaviours Clinic. I was on the Faculty of Medicine of the University of Toronto for 15 years and have served as Editor-in-Chief of the peer-reviewed journal, *Sexual Abuse*. That journal is one of the top-impact, peer-reviewed journals in sexual behaviour science and is the official journal of the *Association for the Treatment and Prevention of Sexual Abuse*. In that appointment, I was charged to be the final arbiter for impartially deciding which contributions from other scientists in my field merited publication. I believe that appointment indicates not only my extensive experience evaluating scientific claims and methods, but also the faith put in me by the other scientists in my field. I have also served on the Editorial Boards of *The Journal of Sex Research*, the *Archives of Sexual Behavior,* and *The Journal of Sexual Aggression*. Thus, I regularly interact with and am routinely exposed to the

views and opinions of most of the scientists active in our field today, within the United States and throughout the world.

13. For my education and training, I received my Bachelor of Science degree from Rensselaer Polytechnic Institute, where I studied mathematics, physics, and computer science. I received my Master of Arts degree in psychology from Boston University, where I studied neuropsychology. I earned my doctoral degree in psychology from McGill University, which included successfully defending my doctoral dissertation studying the effects of psychiatric medication and neurochemical changes on sexual behaviour, and it included a clinical internship assessing and treating people with a wide range of sexual and gender identity issues.

14. I have a decades-long, international, and award-winning history of advocacy for destigmatizing people with atypical sexualities. While still a trainee in psychology, I founded the American Psychological Association's (APA) Committee for Lesbian, Gay, and Bisexual Graduate Students. Subsequently, I have served as the Chair for the Committee on Science Issues for APA's Division for the Psychology of Sexual Orientation and Gender Diversity and was appointed to its Task Force on Transgender Issues. Throughout my career, my writings and public statements have consistently supported rights for transgender populations and the application of science to help policy-makers best meet their diverse needs. Because my professional background also includes neurobiological research on the development of other atypical sexualities, I have become recognized as an international leader also in the destigmatizing of the broader range of human sexuality patterns.

15. I am highly experienced in the application of sex research to forensic proceedings: I have served as the Head of Research for the Law and Mental Health Program of the University of Toronto's psychiatric teaching hospital, the Centre for Addiction and Mental Health, where I was appointed to the Faculty of Medicine.

16. In the past four years, I have testified in these depositions, hearings, or trials:

B.P.J. v. West Virginia State Board of Education
Civil Action No. 2:21-cv-00316
US District Court, Southern District, Charleston Division

Josephson v. Ganzel
Case No: 3:19-cv-00230-RGJ
Kentucky Western District, Louisville Division

A.M. v. Indianapolis Public Schools, et al.
Cause No. 1:22-cv-01705-JMS-DLP
U.S. District Court, Southern District of Indiana

Boe, et al. v. Marshall
Civil Action No. 2:22-cv-00184-LCB
U.S. District Court, Middle Dist. of Alabama, Northern Div.

PFLAG, et al. v. Abbott
No. D-1-GN-22-002569
Texas, Travis County District Court

K.C., et al. v. Medical Licensing Board of Indiana, et al.
Case No. 1:23-CV-595
Southern District of Indiana, Indianapolis Division

Koe, et al., v. Noggle, et al.
Civil Action No. 1:23-cv-02904-SEG
U.S. District Court, Northern Dist. of Georgia, Atlanta Div

Poe, et al., v. Labrador
Case No. 1:23-cv-00269-CWD
U.S. District Court, District of Idaho, Southern Division

Loe v. Texas
Cause No. D-1-GN-23-003616
201st Judicial District, Travis County, Texas

Noe, et al., v. Parson, et al.
Case No 23AC-CC04530
Circuit Court of Cole County, State of Missouri

Amy Hamm v. B.C. College of Nurses and Midwives
Citation issued under Health Professional Act

Voe, et al. v. Mansfield, et al.
Civil No. 1:23-cv-864
U.S. District Court, North Carolina
Middle Dist., Durham Div.

T.D., et al. v Wrigley, et al.
Case No. 08-2023-CV-2189
Dist. Court, South Central Judicial District, North Dakota

Cano v. South Carolina Department of Corrections
Civil Action No. 9:22-cv-4247-DCC-MHC
U.S. District Court, S.C., Columbia Div.

Moe, et al. v. Yost, et al.
Case No. 24-cv-002481
Court of Common Pleas, Franklin County, Ohio

Egale, et al. v. Province of Alberta
Court File Number 2401-17719
Court of King's Bench of Alberta, Calgary, Canada

Wailes, et al., vs. Jefferson County Public Schools, Board of Education
Case No. 1:24-cv-02439-RMR-NRN
US District Court, District of Colorado

17. For my work in this case, I am being compensated $400 per hour. My compensation does not change based on the conclusions and opinions that I provide here or later in this case or on the outcome of this lawsuit.

C. Clinical expertise vs. scientific expertise.

18. In clinical science, there are two kinds of expertise: Clinicians' expertise regards applying general principles to the care of an individual patient and the unique features of that case. A scientist's expertise is the reverse, accumulating information about many individual cases and identifying the generalizable principles that may be applied to all cases. Thus, different types of decisions may require different kinds of experts, such that questions about whether a specific patient represents an exception to the general rule might be better posed to a physician's expertise, whereas questions about establishing the general rules themselves might be better posed to a scientist's.

19. In legal matters, the most familiar situation pertains to whether a given clinician correctly employed relevant clinical standards. Often, it is other clinicians who practice in that field who will be best equipped to speak to that question. When it is the clinical standards that are themselves in question, however, it is the experts in the assessment of scientific studies who are the relevant experts.

D. The professional standard to assess treatment models is to use objective assessors, not the treatment-providers in conflict of interest with the result.

20. I describe in a later section the well-recognized procedures for conducting reviews of literature in medical and scientific fields to evaluate the strength of evidence for particular procedures or treatments. Importantly, the standard procedure is for such evaluations to be conducted by objective assessors with expertise in the science of assessment, and not by those with an investment in the procedure being assessed. Because the people engaged in providing clinical services are necessarily in a conflict of interest when claiming that their services are effective, formal evaluations of evidence are routinely conducted by those without direct professional involvement and thus without financial or other personal interest in whether services are deemed to be safe or effective. This routine practice standard is exemplified by each of the only three systematic reviews that have been conducted of the safety and efficacy of puberty blockers and cross-sex hormones as treatments for gender dysphoria in children.

21. In 2020, England's National Health Service (NHS) commissioned a major review of the use of puberty blockers and cross-sex hormones in children and young people and appointed prominent pediatrician Dr. Hilary Cass to lead that review, explicating: "Given the increasingly evident polarization among clinical professionals, Dr. Cass was asked to chair the group as a senior clinician *with no prior involvement or fixed views in this area."* (Cass 2022 at 35, italics added.) Cass's committee in turn commissioned a series of formal systematic reviews of evidence. The first set were commissioned from the England National Institute for Health & Care Excellence (NICE), a government entity of England's Department of Health and Social Care, established to provide guidance to health care policy, such as by conducting systematic reviews of clinical research, doing so without direct involvement in providing treatment to affected individuals, in this case, gender dysphoric individuals.

(https://www.nice.org.uk/) The second, and more extensive, set of systematic reviews to be commissioned were conducted by the *Centre for Reviews and Dissemination of University of York,* again independent of any direct involvement in the provision of clinical care for gender dysphoria. (Cass 2024a). The process of The Cass Report received input from a team of advisors, called the "Assurance Group" who were experts in the conduct of such reviews. The review's documentation noted of the Assurance Group that:

> Members are independent of NHS England and NHS Improvement and of providers of gender dysphoria services, and of any organisation or association that could reasonably be regarded as having a significant interest in the outcome of the Review. (https://cass.independent-review.uk/about-the-review/assurance-group/)

This second set of systematic reviews were much more extensive, yet came to the same conclusion as the first: The existing research is of poor quality, inadequate for justifying the transition of minors with gender dysphoria.

22. Similarly, the Finnish health care council commissioned its systematic review to an external firm, *Summaryx Oy*. (Finland PALKO/COHERE 2020.) Summaryx Oy is a "social enterprise" (a Finnish organization analogous to a non-profit think-tank) that conducts systematic research reviews and other analyses for supporting that nation's medical and social systems. Its reviews are conducted by assessment professionals, not by clinicians providing services. (www.summaryx.eu/en/.) The systematic review published by Sweden's *National Board of Health and Welfare* (NBHW) included six experts. (Ludvigsson 2023.) These contributors conduct research and provide clinical services in fields adjacent to—but apart from—children with gender dysphoria. Such fields included gender dysphoria in adults (Dr. Mikael Landén) and disorders of sexual development (DSDs; Dr. Berit Kriström).

23. My own most-cited peer-reviewed paper relating to gender dysphoria in minors illustrates the expertise in the evaluation of scientific evidence that I have and for which I am widely recognized. That is, that paper provided not clinical advice or

a clinical study, but rather a review and interpretation of the available evidence concerning desistance in children who suffer from gender dysphoria, as well as of evidence (and lack of evidence) concerning the safety and effectiveness of medical transition to treat gender dysphoria in minors. (Cantor 2019.)

24. My extensive background in the assessment of sexuality research and in the development of human sexuality places me in exactly the position of objectivity and freedom from conflict-of-interest required by the universal standards of medical research science.

25. I do not offer opinions about the best public policy. Multiple jurisdictions have attempted multiple different means of implementing that science into various public policies. Although I accept as an axiom that good public policy must be consistent with the scientific evidence, science cannot objectively assess societal values and priorities. Therefore, my opinions summarize and assess the science on which public policy is based, but I can offer no opinion regarding which public policy mechanisms would be best in light of that science.

E. Basis of My Opinions.

26. My opinions provided in this report follow from the research findings as reported in the peer-reviewed literature and the standard criteria for assessing research quality and reliability. Public debates regarding these issues have become highly polarized, with both sides claiming to be supported by the science, and their conclusions, to be evidence-based. The court and other decision-makers are in the position of evaluating which of these conflicting narratives accurately portrays the state of the science. The standard, internationally accepted procedures for identifying the best evidence and for translating it into policy guidelines are what is known as *Evidence-Based Medicine* (EBM) or *Evidence-Based Practice* (to be inclusive of mental health and other non-medical policy decisions). The standard manuals for applying evidence-based practice in developing guidelines come from three sources, the *World*

Health Organization, the U.S. *Institutes of Medicine* (IoM, now named the *National Academy of Medicine),* and *The Cochrane Collaboration* (producers of the *Cochrane Reviews*):

Agency for Healthcare Research and Quality (AHRQ). (2021, May). *Clinical guidelines and recommendations.* Rockville, MD. Retrieved from https://www.ahrq.gov/prevention/guidelines/index.html

Carande-Kulis, V., Elder, R. W., & Koffman, D. M. (2022). Standards required for the development of CDC evidence-based guidelines. *Morbidity and Mortality Weekly Report, 71* (suppl. 1), 1–6. Retrieved from http://dx.doi.org/10.15585/mmwr.su7101a1

Guyatt, G., Rennie, D., Meade, M., & Cook, D. (Eds.) (2015). *Users' guide to the medical literature: Essentials of evidence-based clinical practice (3rd ed.).* JAMAevidence: American Medical Association.

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2024). *Cochrane handbook for systematic reviews of interventions* (version 6.5, updated August 2024). Available from www.training.cochrane.org/handbook

Institute of Medicine, National Academy of Sciences. (2009). *Conflict of interest in medical research, education, and practice.* Washington, DC: The National Academies Press. Available from https://doi.org/10.17226/12598

Institute of Medicine, National Academy of Sciences. (2011). *Clinical practice guidelines we can trust.* Washington, DC: The National Academies Press. https://www.ncbi.nlm.nih.gov/books/NBK209539/

Institute of Medicine, National Academy of Sciences. (2011). *Finding what works in health care: Standards for systematic reviews.* Washington, DC: The National Academies Press. Available from https://doi.org/10.17226/13059

World Health Organization. (2014). *WHO handbook for guideline development (2nd ed.).* World Health Organization: Geneva. https://www.who.int/publications/i/item/9789241548960

27. Both the principles of evidence-based practice and these manuals are widely accepted. The principles have been adopted and these manuals adopted for use by U.S. government agencies including U.S. Centers for Disease Control and Prevention (CDC; Carande-Kulis 2022) and the Agency for Healthcare Research and Quality (AHRC; 2021) of the U.S. Department of Health and Human Services (HHS). The lack of controversy over these standards is also reflected by their acceptance, not only by organizations and institutions advocating restrictions on the transition of minors, but also by those advocating removal of barriers to gender transition: Such

organizations claim to be following evidence-based practice, describe their policies as evidence-based, and cite one or more of these same manuals. Thus, this declaration uses these manuals as central sources, and many of my opinions represent assessing where associations' statements and policies conflict or are consistent with the procedures explicated in these manuals. The basic principles of all three largely overlap, differing in their emphasis on different aspects of evidence-based practice, as relevant to the contexts in which each was meant to be applied. The procedures themselves are summarized herein.

28. My opinions have also included my consideration of the recommendations about the care and needs of youth expressing gender dysphoria. The most widely cited sets of recommendations about treating minors expressing gender dysphoria come from three organizations: the *World Professional Association for Transgender Health* (WPATH), the *American Academy of Pediatrics* (AAP), and the *Endocrine Society*. Over time, these organizations have introduced substantial changes, replacing their policies with new versions. Because of these differences, one cannot meaningfully refer to "the standards" or research based on "the standards," without indicating which one. That is, one cannot justify contents of the current (lower) standards on the basis of research that had tested prior (higher) standards. For reference, the most recent and relevant documents are used as the basis of my opinions are:

- *WPATH Standards of Care, version 6* (Meyer 2001/2002)
- *WPATH Standards of Care, version 7* (Coleman 2011/2012)
- *WPATH Standards of Care, version 8* (Coleman 2022)
- *Endocrine Society Clinical Practice Guideline* (Hembree 2009)
- *Endocrine Society Clinical Practice Guideline* (Hembree 2017)
- *American Academy of Pediatrics Policy Statement* (Rafferty 2018; reaffirmed without changes in 2023)

All three of these associations cited the aforementioned evidence-based medicine manuals and have explicitly declared their adoption of evidence-based practice as the

basis of their policies: American Academy of Pediatrics (Alvarez 2019), Endocrine Society (McCartney 2022; Endocrine Society, undated), and WPATH (Coleman 2022).

29. Despite the above, these organizations and their policies have not, in fact, followed the procedures or principles of evidence-based medicine: None conducted a systematic review of the risks and benefits in minors in order to be able evaluate the ratio between them. None of the organizations conducted—and, thus, none of these documents is based on—such a review of social transition or medical transition.

30. As part of applying the international standards for the objective assessment of research, my opinions also integrated consideration of the systematic reviews of the research on the effects on gender dysphoric minors of social and medical interventions. Such reviews have been conducted by the national health care systems of several countries and by independent researchers. These include:

Christensen, J. A., Oh, J., Linder, K., Imhof, R. L., Croarkin, P. E., Bostwick, J. M., & McKean, J. S. (2023). Systematic review of interventions to reduce suicide risk in transgender and gender diverse youth. *Child Psychiatry & Human Development*. doi: 10.1007/s10578-023-01541-w

Finland PALKO/COHERE (2020). Recommendation by the board for selection of choices for health care in Finland: Medical treatment methods for dysphoria related to gender variance in minors. [Certified translation of Palveluvalikoimaneuvoston suositus Alaikäisten sukupuoli-identiteetin variaatioihin liittyvän dysforian lääketieteelliset hoitomenetelmät.]

Hall, R., Taylor, J., Hewitt, C. E., Heathcote, C., Jarvis, S. W., Langton, T., & Fraser, L. (2024). Impact of social transition in relation to gender for children and adolescents: A systematic review. *Archives of Disease in Childhood*. doi: 10.1136/archdischild-2023-326112

Ludvigsson, J. F., Adolfsson, J., Höistad, M., Rydelius, P.A., Kriström, B., & Landén, M. (2023). A systematic review of hormone treatment for children with gender dysphoria and recommendations for research. *Acta Paediatrica*. doi: 10.1111/apa.16791

Sweden National Board of Health and Welfare (NBHW). (2022). Care of children and adolescents with gender dysphoria: National knowledge support with recommendations for professionals and decision-makers. (Report 2022-12-8302) [Certified translation of Vård av barn och ungdomar med könsdysfori : Nationellt kunskapsstöd med rekommendationer tillprofession och beslutsfattare. Available from https://www.socialstyrelsen.se/globalassets/sharepointdokument/artikelkatalog/kunskapsstod/2022-12-8302.pdf]

Taylor, J., Mitchell, A., Hall, R., Langton, T., Lorna Fraser, & Hewitt, C. E. (2024b). Masculinising and feminising hormone interventions for

adolescents experiencing gender dysphoria or incongruence: A systematic review. *Archives of Disease in Childhood*. doi: 10.1136/archdischild-2023-326670

Taylor, J., Mitchell, A., Hall, R., Heathcote, C., Langton, T., Fraser, L., & Hewitt, C. E. (2024a). Interventions to suppress puberty in adolescents experiencing gender dysphoria or incongruence: A systematic review. *Archives of Disease in Childhood*. doi: 10.1136/archdischild-2023-326669

Thompson, L., Sarovic, D., Wilson, P., Irwin, L., Visnitchi, D., Sämfjord, A., & Gillberg, C. (2023) A PRISMA systematic review of adolescent gender dysphoria literature: 3) treatment. *PLOS Global Public Health, 3,* e0001478.

U.S. Department of Health and Human Services. (2025). *Treatment for pediatric gender dysphoria: Review of evidence and best practices*. Available from https://opa.hhs.gov/sites/default/files/2025-05/gender-dysphoria-report.pdf

In addition to treatment outcomes research, systematic reviews of other relevant research have also been conducted, including studies characterizing the psychological profiles and demographic features of these groups. Those systematic reviews are cited in their corresponding sections of the present document.

31. Systematic reviews, such as the above, provide the best means for assessing bodies of research addressing an issue. Many scientific questions have been addressed only by individual research studies which have not been subject to systematic review. Such studies are evaluated by the individual strengths and weaknesses of their research designs. The reliability of these research designs is described by their positioning what is called the *Pyramid of Evidence* and the identification of methods used within those studies to ameliorate potential biases that would reduce the reliability of their findings and any conclusions based on them.

32. It merits emphasis that in assessing a body of scientific evidence with seemingly contradictory studies, it is the *quality* of research studies and not the *quantity* of studies that determines the weight as scientific evidence. Studies representing higher levels of evidence on the *Pyramid of Evidence* outrank studies from lower levels. Even large numbers of lower-level studies cannot overcome a study representing a higher level of evidence. Indeed, because high-quality studies take more time, effort,

and often money, it is typical for high-quality studies to be outnumbered by low-quality studies.

33. In preparing this report, I reviewed (1) Dr. Stephanie Budge's expert declaration, signed May 12, 2023; (2) Dr. Stephanie Budge's rebuttal declaration, signed Aug. 31, 2023; and (3) Dr. Stephanie Budge's expert declaration, signed June 23, 2025.

PART 2: CENTRAL TERMINOLOGY AND CONCEPTS

II. Definitions of *sex* and *gender identity*.

A. What determines the correct definition of a term differs in each of science, law, professional policy, and lay language.

34. In science, the correct definition of a term is determined by its *construct validity:* by its ability to account for existing observations and predict the results of experiments. That is, the correct or valid definition is discovered. Valid definitions are non-arbitrary: One cannot simply decide to change the definition. Such changes occur only as required by new evidence. Although the laws of science (and the definitions of the terms or constructs in those laws) are universal, there can often be debate in the face of unknowns, and different definitions can be pragmatic/applicable in different contexts.

35. In law, the definitions of terms are determined by society's legislation and any subsequent judicial procedures which established and interpreted them. They are arbitrary in the sense that they can be changed at society's will, through those same institutions. Legal definitions of terms are not universal, as they can apply in one jurisdiction and not another, or apply in one context but not another context within that same jurisdiction.

36. Professional associations define terms according to their individual internal procedures and policy-making procedures which, especially within large clinical associations, can resemble those of government legislative bodies. The definitions that

professional associations express are arbitrary in the same sense of being modifiable by the will of that association's decision-making body. Procedures varying by professional association, and the definitions used in their policy statements can work to integrate research evidence, but they are also subject to the political, financial, and ideological interests of that profession and its members.

37. In common language, definitions are the most subject to "what it means to me," including implicit and subjective meanings. The meanings of terms vary on their own and are socially influenced, independent of any evidence. Influences on them include fashion and implicitly perceived political statements, both of stigma and of virtue signalling.

B. *Sex* and *sex-assigned-at-birth* represent objective features.

38. Sex is an *objective* feature: It can be ascertained regardless of any declaration by a person, such as by chromosomal analysis or visual inspection. Gender identity, however, is *subjective:* There exists no means of either falsifying or verifying people's declarations of their gender identities. In science, it is the objective factors—and only the objective factors—that matter to a valid definition. Objectively, sex can be ascertained, not only in humans or only in the modern age, but throughout the animal kingdom and throughout its long history in natural evolution.

39. I use the term "sex" in this report with this objective meaning, which is consistent with definitions articulated by multiple medical organizations:

> Endocrine Society (Bhargava 2021 at 220):
>
> > Sex is dichotomous, with sex determination in the fertilized zygote stemming from unequal expression of sex chromosomal genes.
>
> American Academy of Pediatrics (Rafferty 2018 at 2, Table 1):
>
> > An assignment that is made at birth, usually male or female, typically on the basis of external genital anatomy but sometimes on the basis of internal gonads, chromosomes, or hormone levels.
>
> American Psychiatric Association (American Psychiatric Association Guide):
>
> > Sex is often described as a biological construct defined on an anatomical, hormonal, or genetic basis. In the U.S., individuals are assigned a sex at birth based on external genitalia.
>
> American Psychological Association (APA Answers 2014):

> Sex is assigned at birth, refers to one's biological status as either male or female, and is associated primarily with physical attributes such as chromosomes, hormone prevalence, and external and internal anatomy.

American Psychological Association (APA Resolution 2021 at 1):

> While gender refers to the trait characteristics and behaviors culturally associated with one's sex assigned at birth, in some cases, gender may be distinct from the physical markers of biological sex (e.g., genitals, chromosomes).

40. The phrases "assigned male at birth" and "assigned female at birth" are increasingly popular, but they lack any scientific merit. Science is the systematic study of natural phenomena, and nothing objective changes upon humans' labelling or re-labelling it. That is, the objective sex of a newborn was the same on the day before as the day after the birth. Indeed, the sex of a fetus is typically known by sonogram or amniocentesis many months before birth. The use of the term *assign* insinuates that the label is arbitrary and that it was possible to have been assigned a different label that is equally objective and verifiable, which is untrue. Infants were born male or female before humans invented language at all. Indeed, it is exactly because an expected child's sex is known before birth that there can exist "gender reveal" events. Biologically, the sex of an individual (for humans and almost all animal species) as male or female is irrevocably determined at the moment it is conceived. Terms such as "assign" obfuscate rather than clarify the objective evidence.

C. *Gender identity* refers to subjective feelings that cannot be objectively defined, measured, or verified by science.

41. Many debates, both public and professional, attempt to apply arguments by definition: asserting a definition of a term and then asserting that other claims must be true by virtue of that definition. Gender identity and related terms, however, do not have any such universal meanings and reflect popular usage rather than any evidence-based criteria. The diagnostic manual of the American Psychiatric Association, the *DSM-5-TR,* noted this explicitly:

> The area of sex and gender is highly controversial and has led to a proliferation of terms who meanings vary over time and within and between disciplines. (American Psychiatric Association 2022 at 511.)

42. It is increasingly popular to define gender identity as a person's "inner sense," however, neither "inner sense" nor any similar phrase is scientifically meaningful. In science, a valid construct must be both objectively measurable and falsifiable with objective measures. The concept of an inner sense fits none of these requirements. Other such definitions based on vague metaphors, such as "a person's core" and "an essential part of one's being" do not possess the fundamental features required of the scientific method.

43. Gender identity is unlike emotions, which are associated with objectively measurable physiological changes, such as respiration and brain activity. (E.g., Davidson 2003; Seeley 2015.) Gender identity is unlike sexual orientation, which can be objectively measured by genital and other physiological responses to sexual stimuli. (E.g., Freund 1967; Hess 1965; Rieger 2005.) Gender identity is unlike disorders of sexual development (DSD's, also called *intersex conditions)*, which are biological disorders with physical evidence that can be objectively detected with genetic testing and other physical measures. (Vilain 2006.) Indeed, existing medical tests can detect the presence of intersex conditions with extreme accuracy, allowing medical decisions to be made with high levels of confidence (Audi 2018; Witchel 2018). No such objective verification exists with regard to gender dysphoria, however. The diagnosis relies entirely upon subjective reports and whether the clinician believes the self-report of the patient. In contrast with being treated when confirmed by physical evidence, treatment of gender dysphoria proceeds *in spite of* all objective, physical evidence.

III. Gender Dysphoria is a *mental health* diagnosis: It does not meet the criteria of a *medical* diagnosis.

A. Mental health diagnoses are categorically distinct from medical diagnoses, lacking physical or objective features for validation or falsification.

44. The use of the word "medical" and related terms, including "medically appropriate," "medically verifiable," "serious medical condition," as well as "medically

necessary" are merely rhetorical. Their application in this context is not merely misleading, but factually incorrect, representing a profound misunderstanding of the fundamentals of psychiatric practice. Although psychiatry is a subfield of medicine, psychiatric diagnoses are *not* medical diagnoses. Medical diagnoses identify the *causes* of a patient's symptoms. Psychiatric diagnoses, however, label the *symptoms themselves,* regardless of the causes, which remain unknown. These points about the fundamental nature of diagnosis in psychiatry versus medicine have been vociferously expressed by many of the most established figures in the field of psychiatry, especially during the writing of the DSM diagnostic criteria in use today. As the leaders of that field emphasize, psychiatric diagnoses lack any measurable, physical features that can distinguish them objectively from a healthy state.

45. The director of the *National Institute of Mental Health* (NIMH) from 2002 to 2015 was Dr. Thomas Insel, a noted psychiatrist and neuroscientist. He explicitly named the non-medical basis of psychiatric categories as the reason for NIMH moving away from DSM diagnoses in mental health research:

> While DSM has been described as a "Bible" for the field, it is, at best, a dictionary…. The weakness is its lack of validity. Unlike our definitions of ischemic heart disease, lymphoma, or AIDS, the DSM diagnoses are based on a consensus about clusters of clinical symptoms, not any objective laboratory measure…. That is why NIMH will be re-orienting its research away from DSM categories. (Insel 2013.)

Dr. Allen Frances of Duke University headed the development of the prior version of the DSM (the DSM-IV) and famously opposed "diagnostic inflation," the broadening of psychiatric diagnoses to apply to more and more people in the absence of empirical justification:

> "Mental illness" is terribly misleading because the "mental disorders" we diagnose are no more than descriptions of what clinicians observe people do or say, not at all well-established diseases. (Frances 2015.)
>
> Psychiatric diagnosis must therefore still rely exclusively on fallible subjective judgments, not on objective biological tests…. Biological findings, however exciting, have never been robust enough to become test-worthy. (Frances 2013.)

Dr. David Kupfer chaired the task force that established the DSM-5 criteria and similarly emphasized the lack of biological evidence that might establish mental health diagnoses as medical conditions.

> In the future, we hope to be able to identify disorders using biological and genetic markers that provide precise diagnoses that can be delivered with complete reliability and validity. Yet this promise, which we have anticipated since the 1970s, remains disappointingly distant. We've been telling patients for several decades that we are waiting for biomarkers. We're still waiting. (Kupfer 2013.)

B. *Gender Dysphoria* is a mental health diagnosis.

46. Gender Dysphoria is a mental health condition identified by criteria listed in the current version of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5-TR). (American Psychiatric Association 2022.) While the criteria contain multiple components and vary modestly for children, adolescents, and adults, all cases are characterized by a strong and lasting desire to be the opposite sex and by "clinically significant" distress of sufficient severity to impair the individuals' ability to function in their daily life setting. Gender dysphoria is nowhere defined as a medical (as opposed to mental health) diagnosis, and it is not characterized by any disability or impairment or ill health affecting any part of the physical body.

IV. Adult-, adolescent-, and childhood-onset gender dysphoria represent distinct phenomena with objectively distinct features, with no justification for generalizing observations based on one type to other types.

A. The demographic and clinical epidemiology profiles differ across adult-, adolescent-, and childhood-onset gender dysphoria.

47. One of the most widespread public misunderstandings about people expressing gender dysphoria is that all such cases represent the same phenomenon; however, the clinical science has long and consistently demonstrated that prepubescent children expressing gender dysphoria represent a phenomenon distinct from that of adults starting to experience it. That is, gender dysphoric children are not simply younger versions of gender dysphoric adults. They differ in virtually every objective variable recorded, including in their response to treatments. A third

phenomenon has recently become increasingly observed among people presenting to gender clinics: These cases appear to have an onset in adolescence—after the onset of puberty but before adulthood—and occur in the absence of any childhood history of gender dysphoria. Such cases have been called *adolescent-onset* (or *"rapid-onset"* gender dysphoria; ROGD). Despite having only recently been observed, they have quickly grown to outnumber greatly the better characterized types. Moreover, large numbers of adolescents are today self-identifying in surveys as "gender fluid" and "non-binary." These are not recognized mental health diagnoses and do not relate in any known way to gender dysphoric groups that have been the subject of previous treatment outcome studies. Because each of these phenomena differ in multiple objective features, it is scientifically invalid to extrapolate findings between them.

B. Outcomes associated with one demographic or diagnostic group cannot be generalized to other groups, remaining experimental until tested.

48. Each of the systematic reviews from Sweden, Finland, and England emphasized that the recently observed, greatly increased numbers of youth coming to clinical attention are a population different in important respects from the participants in often-cited research studies. Conclusions from studies of adult-onset gender dysphoria and from childhood-onset gender dysphoria cannot be assumed to apply to the current patient populations of adolescent-onset gender dysphoria. The final review of the Cass Report correctly identified this issue, noting: "This is a different cohort from that looked at by earlier studies." (Cass 2024a at 26.) Specifically:

> Today's population is different from that for which clinical practice was developed with a higher proportion of birth-registered females presenting in adolescence. They are a heterogenous group with wide-ranging co-occurring conditions, often including complex needs. (Cass 2024a at 97.)

Similarly, the experiences reported by adults cannot be generalized to minors: "There are different issues involved in considering gender care for children and young people than for adults." (Cass 2024a at 26.) Moreover:

> This is a heterogenous group, with broad ranging presentations often including complex needs that extend beyond gender-related distress… Too often this cohort are considered a homogenous group for whom there is a single driving cause and an optimum treatment approach, but this is an over-simplification." (Cass 2024a at 27.)

The final report of The Cass Review refuted the idea that the use of puberty-blockers to treat precocious puberty justifies its use with gender dysphoric children. The report noted that puberty-blockers "have undergone extensive testing for use in precocious puberty" (Cass 2024a at 173), but that:

> The situation for the use of puberty blockers in gender dysphoria is different. Although some endocrinologists have suggested that it is possible to extrapolate or generalise safety information from the use of puberty blockers in young children with precocious puberty to use in gender dysphoria, there are problems in this argument. In the former case, puberty blockers are blocking hormones that are abnormally high for, say, a 7-year-old, whereas in the latter they are blocking the normal rise in hormones that should be occurring into teenage years, and which is essential for psychosexual and other developmental processes. (Cass 2024a at 174.)

49. In other words, treatment of gender dysphoria in children and adolescents presents novel use-cases very dissimilar to the contexts in which puberty blockers and cross-sex hormones have previously been studied. Whereas use of puberty blockers to treat precocious puberty *avoids* the medical risks caused by undergoing puberty growth before the body is ready (thus outweighing other risks), use of blockers to treat gender dysphoria in patients already at their natural puberty pushes them *away* from the mean age of the healthy population. Instead of avoiding an objective problem, one is created: Among other things, patients become subject to the issues and risks associated with being late-bloomers, *very* late-bloomers. This transforms the risk-to-benefit ratio, where the offsetting benefit is primarily (however validly) cosmetic. Similarly, administering testosterone to an adult male to treat testosterone deficiency addresses both a different condition and a different population than administration of that same drug to an adolescent female to treat gender dysphoria; the benefits and harms observed in the first case cannot be extrapolated to the second. The DHHS also noted this important distinction in its 2025 review. (DHHS 2025 at 108–110.)

50. Finland's review repeated the observation of greatly increased numbers (by a factor of 20), an entirely different demographic of cases, and increased proportions of psychiatric co-morbidities. (Finland PALKO/COHERE 2020 at 4–6.) The Swedish review highlighted "the uncertainty resulting from the lack of clarity about the causes to the continued increase in the number of people diagnosed with gender dysphoria, particularly between the ages of 13 and 17 and especially among people whose registered gender at birth was female." (Sweden National Board of Health and Welfare 2022 at 16.)

51. It is well established that males and females differ dramatically in the incidence of many mental health conditions and in their responses to treatments for those mental health conditions. This repeats that research from male-to-female transitioners (the predominant population until recent years) cannot be extrapolated to female-to-male transitioners (the predominant population presenting at clinics today). Outcomes from people who clearly experienced childhood-onset gender dysphoria (prepubertal) cannot be extrapolated to people who first manifest diagnosable gender dysphoria well into puberty and adolescence. Outcomes from clinics employing rigorous and transparent gate-keeping procedures cannot be extrapolated to clinics or clinicians employing only minimal or perfunctory assessments without external review. Developmental trajectories and outcomes preceding the social media era cannot be assumed to apply to those of today (or the future). Research from youth with formal diagnoses and attending clinics cannot be extrapolated to self-identifying youth or to those responding to surveys advertised on social media sites or activist mailing lists.

C. *Adult-Onset* Gender Dysphoria occurs nearly exclusively in biological males who experience specific sexual interest pattern (a paraphilia called *autogynephilia),* and typically adjust well to a social role as female under certain conditions including successful completion of *"real life experience."*

52. Whereas *Childhood-Onset Gender Dysphoria* occurs both in biological males and females and is strongly associated with later homosexuality (Section

IV.D.), *Adult-Onset Gender Dysphoria* consists primarily of biological males and only those sexually attracted to females. (Lawrence 2010.) Unlike the childhood-onset type, the adult-onset type rarely showed gender atypical (effeminate) behaviour or interests in childhood (or adulthood). Some individuals express being sexually attracted to both men and women, and some profess asexuality, but very few indicate having a primary sexual interest only in men. (Blanchard 1989a.) Cases of adult-onset gender dysphoria are typically associated with a sexual interest pattern involving themselves in female form (a paraphilia called *autogynephilia*). (Blanchard 1989a, 1989b, 1991.)

53. Systematic review of all studies examining mental health issues in transgender adults identified 38 such studies. (Dhejne 2016.) The review indicated that many studies were methodologically weak, but nonetheless consistently found (1) that the average rate of mental health issues among adults is highly elevated both before *and after* transition, (2) but that the average was less elevated among adults who completed transition. It could not be concluded that transition improves mental health, however: Because very many patients were also receiving psychotherapy at the same time, it cannot be determined whether the change was caused by the transition or the psychotherapy (i.e., the evidence is *confounded*). Further, several studies showed more than 40% of patients to become "lost to follow-up" (i.e., showed high rates of *attrition*). It remains unknowable to what extent the information from the remaining participants meaningfully applies to the whole population.

D. *Childhood-Onset* Gender Dysphoria (prepubertal-onset) is a majority male phenomenon that, when not transitioned, typically desists and develops into gay or lesbian identities.

54. For many decades, small numbers of prepubescent children have been brought to mental health professionals for help with their unhappiness with their sex and expressing the belief they would be happier living as the other sex. The large majority of cases of childhood-onset gender dysphoria occurs in biological males, with

clinics reporting 2–6 biological male children to each female. (Cohen-Kettenis 2003; Steensma 2018; Wood 2013.)

55. Elevated rates of multiple mental health issues among gender dysphoric children are reported throughout the research literature. A formal analysis of children (ages 4–11) undergoing assessment at the Dutch child gender clinic showed that 52% fulfilled criteria for a formal DSM diagnosis of a clinical mental health condition other than Gender Dysphoria. (Wallien 2007 at 1307.) A comparison of the children attending the Canadian versus Dutch child gender dysphoria clinics showed only few differences between them, and a large proportion of both groups were diagnosable with clinically significant mental health issues. On a standard assessment instrument (Child Behavior Check List, or CBCL) used with 6–11-year-olds, showed 61.7% of the Canadian and 62.1% of the Dutch sample to meet diagnostic criteria for one or more mental health conditions other than gender dysphoria. (Cohen-Kettenis 2003 at 46–47.)

56. A systematic review of all studies of *Autism Spectrum Disorders* (ASDs) and *Attention-Deficit Hyperactivity Disorder* (ADHD) among children diagnosed with gender dysphoria was recently conducted. (Thrower 2020.) It identified a total of 22 studies examining the prevalence of ASD or ADHD youth with gender dysphoria. Studies reviewing medical records of children and adolescents referred to gender clinics showed 6–26% to have been diagnosed with ASD. (*Id.* at 695.) Moreover, those authors gave specific caution on the "considerable overlap between symptoms of ASD and symptoms of gender variance, exemplified by the subthreshold group which may display symptoms which could be interpreted as either ASD or gender variance. Overlap between symptoms of ASD and symptoms of GD may well confound results." (*Id.* at 703.) The rate of ADHD among children with GD was 8.3–11%. Conversely, data from children (ages 6–18) with ASDs show they are more than seven times more likely to have parent-reported "gender variance." (Janssen 2016 at 63.)

57. The outcomes studies have shown there to be little reliable evidence of transition improving the mental well-being of children. (Summarized in Sections XIII and XIV.) As shown repeatedly by clinical guidelines from multiple professional associations, mental health issues are expected or required to be resolved *before* undergoing transition. The need for such guidelines is that children may be expressing gender dysphoria, not because they are experiencing what gender dysphoric adults report, but because the children mistake what their experiences mean and to what they might lead. For example, a child experiencing depression from social isolation might develop the hope—or unrealistic expectation—that transition will help them fit in better as a member of the other sex.

58. In cases where gender dysphoria is secondary to a different issue, efforts at transition are aiming at the wrong target, leaving the actual issue(s) unaddressed. The highly reliable, consistently replicated evidence that childhood-onset gender dysphoria resolves with puberty for the large majority of children indicates that blocking a child's puberty blocks the very process of maturation that would naturally resolve the dysphoria.

E. *Adolescent-Onset* Gender Dysphoria is a largely unstudied and majority female phenomenon, with distinct features, unobserved before the social media age, but becoming the predominant type since.

59. Simultaneously with the advent of social media, a third profile of gender dysphoria appeared, both clinically and socially, which is characteristically distinct from the two previously identified profiles. (Kaltiala-Heino 2015; Littman 2018.) As described by Chen "[Y]outh who first recognize their gender incongruence in adolescence may represent a distinct subgroup of transgender and nonbinary youth who have more psychosocial complexities than youth recognizing gender incongruence in childhood." (Chen 2023 at 245.)

60. Despite lacking any history before the social media age, this profile has now numerically overwhelmed the previously observed and better characterized types,

both in clinics and on Internet surveys. Unlike adult-onset or childhood-onset gender dysphoria, this group is predominantly biologically female. This group typically presents in adolescence and lacks the history of cross-gender behaviour that childhood-onset cases have. (It is that feature which suggested the alternative term, *Rapid Onset Gender Dysphoria*; ROGD). (Littman 2018.)[1] Cases commonly appear to occur within clusters of peers in association with increased social media use (Littman 2018) and among people with Autism Spectrums Disorders (ASDs) or other mental health issues. (Kaltiala-Heino 2015; Littman 2018; Warrier 2020.) The patterns reported by Littman have recently been independently replicated by another study which also found it to be a predominantly female phenomenon, associated with very high rates of social media use, among youth with other mental health issues, and in association with peers expressing gender dysphoria issues. (Diaz & Bailey 2023.)[2] Due to the multiple differences across the epidemiological and other objective variables, there is no justification for extrapolating findings from adult-onset or childhood-onset gender dysphoria to this new presentation.

61. There do not yet exist any outcomes studies of people with adolescent-onset gender dysphoria undergoing medical transition. Current research is limited to surveys primarily of members of activist and support groups on the Internet.

62. Moreover, no study has yet been organized in such a way as to allow for a distinct analysis of the adolescent-onset group, as distinct from childhood-onset or adult-onset cases. Many published studies fail to distinguish between people who exhibited childhood-onset gender dysphoria and have aged *into* adolescence versus people who never expressed gender dysphoria *until* adolescence. (Analogously, there are

[1] After initial criticism, the publishing journal conducted a reassessment of the article. The article was expanded with additional detail and republished. The relevant results were unchanged. Littman's paper as revised has been widely cited.

[2] This peer-reviewed article was originally published in the *Archives of Sexual Behavior* became a subject of protest, including by WPATH President, Dr. Marci Bowers, demanding the retraction of the article and the dismissal the journal's Editor, Dr. Kenneth Zucker. No action was taken against Zucker, and the article was re-published in the *Journal of Open Inquiry in the Behavioral Sciences.* The latter version is cited in the reference list of the present report.

reports failing to distinguish people who had adolescent-onset gender dysphoria and aged into adulthood from people with adult-onset gender dysphoria.) Studies selecting groups according to their *current* age instead of their *onset* age produces only confounded results, mixing both types, yielding mixed results that do not accurately reflect either.

63. The literature varies in the range of gender dysphoric adolescents with co-occurring disorders. In addition to self-reported rates of suicidality (See Section XVI on *Suicide and Suicidality*), clinical assessments reveal elevated rates not only of depression (Holt 2016; Skagerberg 2013; Wallien 2007), but also of anxiety disorders, disruptive behaviour difficulties, *Attention Deficit/Hyperactivity Disorder* (ADHD), *Autism Spectrum Disorder* (ASD), and personality disorders, especially *Borderline Personality Disorder* (BPD). (Anzani 2020; de Vries 2010; Jacobs 20 14; Janssen 2016; May 2016; Strang 2014, 2016.)

64. Of particular concern in the context of adolescent-onset gender dysphoria is *Borderline Personality Disorder* (BPD; diagnostic criteria in Table below). Symptoms of BPD overlap in important respects with symptoms commonly interpreted as signs of gender dysphoria, and it is increasingly hypothesized that very many cases appearing to be adolescent-onset gender dysphoria actually represent cases of BPD. (E.g. Anzani 2020; Zucker 2019.) That is, some people may be misinterpreting their experiencing the "identity disturbance" symptom (Criterion 3, below) to represent a *gender* identity disturbance specifically. Like adolescent-onset gender dysphoria, BPD begins to manifest in adolescence, is three times more common in biological females than males, and occurs in 2–3% of the population, rather than 1-in-5,000 people. (Thus, if even only a portion of people with BPD experienced an identity disturbance, and focused that disturbance on gender identity resulting in transgender identification, they could easily overwhelm the number of genuine cases of gender dysphoria.) Thus, the objective evidence offered of these epidemiological and

demographic features shows adolescent-onset gender dysphoria to have a strong objective resemblance to BPD but little if any objective resemblance to either childhood- or adult-onset gender dysphoria.

> **DSM-5-TR Diagnostic Criteria for Borderline Personality Disorder.**
>
> A pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:
>
> 1. Frantic efforts to avoid real or imagined abandonment. (Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5.)
> 2. A pattern of unstable and intense interpersonal relationship characterized by alternating between extremes of idealization and devaluation.
> 3. *Identity disturbance: markedly and persistently unstable self-image or sense of self.*
> 4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). (Note: Do not include suicidal or self-mutilating behavior covered in Criterion 5.)
> 5. *Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behavior.*
> 6. Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days).
> 7. Chronic feelings of emptiness.
> 8. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights).
> 9. Transient, stress-related paranoid ideation or severe dissociative symptoms.
>
> (American Psychiatric Association 2022 at 752–753, italics added.)

65. Mistaking cases of BPD for cases of Gender Dysphoria may prevent such youth from receiving the correct mental health services for their condition. A primary cause for concern is symptom Criterion 5: *Recurrent suicidal behaviour*. (See Section XVI on *Suicide and suicidality*.) Regarding the provision of mental health care, the distinction between these conditions is crucial: A person with BPD going undiagnosed will not receive the appropriate treatments (the currently most effective of which is

Dialectical Behavior Therapy). The problem was not about gender identity but about having an *unstable* identity (Criterion 3).

66. Regarding research, there have now been several attempts to document rates of suicidality among gender dysphoric adolescents. The scientific concern presented by BPD is that it potentially poses a very substantial confound: samples of gender dysphoric adolescents could appear to have elevated rates of suicidality, not because of the gender dysphoria (or transphobia in society), but because of the number of people with BPD in the sample.

V. The features of adolescent-onset gender dysphoria are much better explained by social-contagion and social-media than by sex differences in the brain or sexual-minority-stress.

A. Social influence on the social development of adolescent females in the social media age.

67. Adolescents use social media for social comparison and feedback, and social media use is associated with decreased mental health (Nesi & Prinstein, 2015). Social media exposure to ideals of beauty and appearance reduces body image, especially in adolescent females (Kleemans, 2018). Adolescent females are the demographic most vulnerable to social comparison and use social media as the basis of their self-image (Fioravanti 2022), especially so for those with co-morbid mental illnesses that interfere with social functioning, who are disproportionately influenced negatively by social media (Maheux 2022). The mental illness profiles associated with adolescent-onset gender dysphoria/incongruence are unlike those shown by the better- and longer-established types of gender dysphoria/incongruence including in their overrepresentation of issues such as Autism Spectrum Disorder, which reflects problems in social functioning. The mental illness profile associated with sexual minority stress, in contrast, consists of anxiety and depression. Sexual minority stress does not cause Autism Spectrum Disorder, but it can increase vulnerability to social identity development. Although these data are still only correlational, they strongly

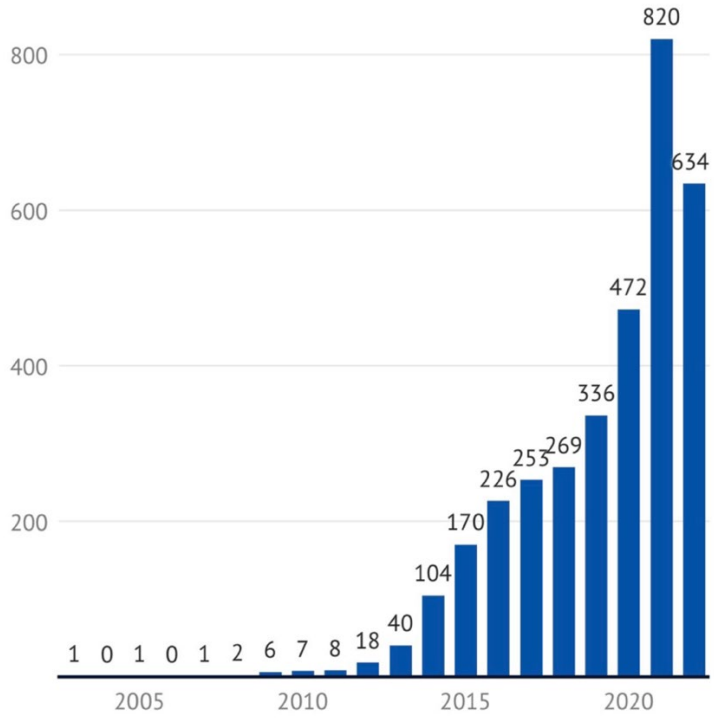
suggest that to support is to reinforce the belief of these youth that they are not "real women" or "real men" because they do fit the exaggerated and perfected social images of femaleness and maleness now flooding their virtual social environments.

68. Some advocates reject the social contagion explanation of the sudden epidemiological changes, citing political, social, and therapeutic implications they claim follow from that explanation. No other interpretation has been offered that is capable of explaining the evidence, however, and multiple, highly reliable sources (including national surveys), confirm the patterns predicted by the social contagion explanation. Large quantities of mental health data have been produced recently due to the interest in investigating the impact of COVID on public mental health. What this research has repeatedly revealed is that, although there have been some decreases in mental health indicators during the COVID era, the precipitous decline began nearly a decade before the COVID era (Villas-Boas 2023): It instead corresponds with the ubiquity of smartphones and social media among adolescents.

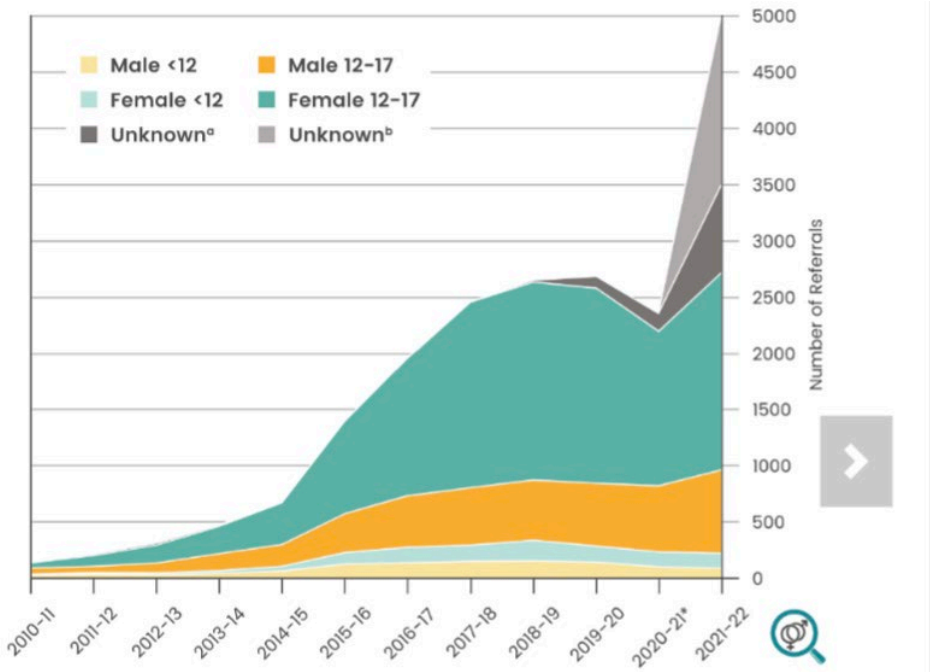
69. As demonstrated by the following evidence, each of these explosive changes occurred simultaneously and primarily within the same demographic group: adolescent, biological females with psychosocial vulnerabilities and greater susceptibility to social influences. Neither the claims of sexual minority stress nor any other hypothesis predicts or provides any explanation for the multiple concurrent and ubiquitous changes as does the impact of smartphones and social media.

B. The explosive increase in occurrence of gender dysphoria throughout the industrialized world coincided exactly with social media culture.

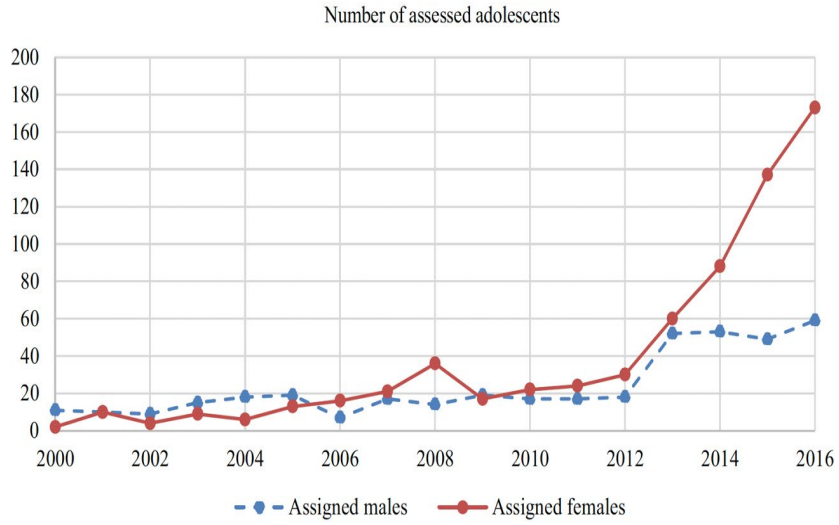
70. **Australia**: The Royal Children's Hospital gender service reports the following data on referrals to its gender service, with an exponential rise beginning in 2011–2012. (Bachelard 2023.)



71. **United Kingdom:** The Cass Report provides the following data on referrals of minors for gender dysphoria in the U.K., following almost exactly the same timing and curve. (Cass 2024a at 85.)

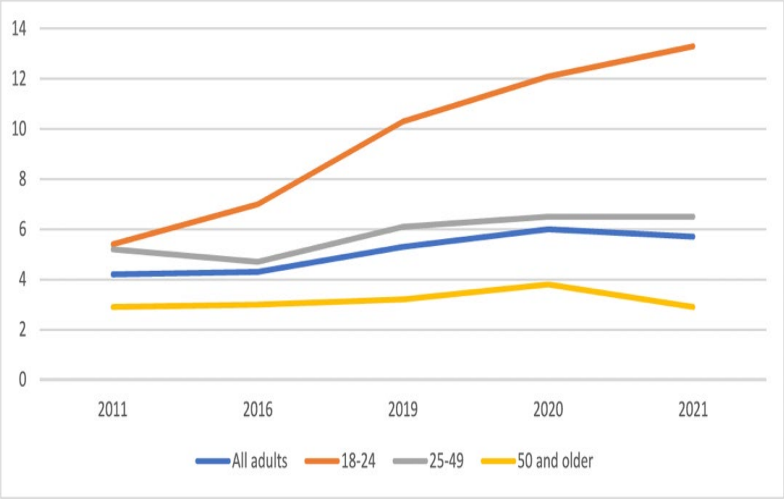


72. **The Netherlands:** Data from the Netherlands shows the same pattern and timing and breaks out the fact that the phenomenon is primarily affecting biological females. (Arnoldussen 2020.)

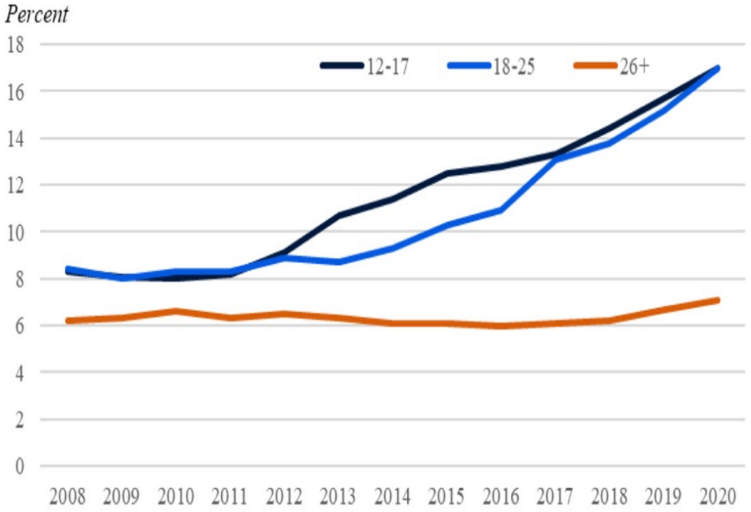


C. Data also show a sharp decrease in mental health among teens since the wide uptake of social media.

73. Brunette (2023) plotted data from *U.S. National Survey on Drug Use and Health* demonstrating that increases in depression began at the same time and occurred among younger rather than older adults:



74. Data from the *U.S. Substance Abuse and Mental Health Services Administration* (SAMHSA) (2022) likewise show the rapid rise in depressive episodes, more than doubling, accompanying the social media age, and mostly affecting youth under 25:



D. The post-2011 crisis in mental health, like the explosion of gender dysphoria referrals, has been a largely female phenomenon.

75. The sudden and dramatic increases in depression primarily occurred among biologically *female* adolescents. The *U.S. Centers for Disease Control and Prevention* (CDC) released the results of its biannual *Youth Risk Behavior Survey* (CDC 2023). The report confirmed that mental health and suicidal thoughts and behaviours worsened significantly between 2011 and 2021. It also found these problems primarily affecting biological females, noting:

> Across almost all measures of substance use, experiences of violence, mental health, and suicidal thoughts and behaviors, female students are faring more poorly than male students. These differences, and the rates at which female students are reporting such negative experiences, are stark.… In 2021, almost 60% of female students experienced persistent feelings of sadness or hopelessness during the past year and nearly 25% made a suicide plan. (Centers for Disease Control 2023 at 2.)

76. Twenge (2022) showed an explosive increase in major depression rates among U.S. adolescents (ages 12–17) beginning in 2011, as reported by the *U.S. National Study of Drug Use and Health,* illustrating again this to be primarily among females:

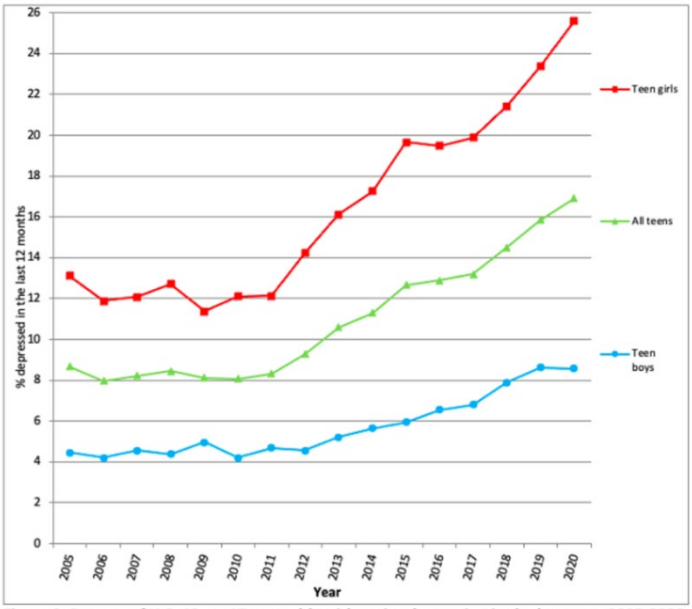


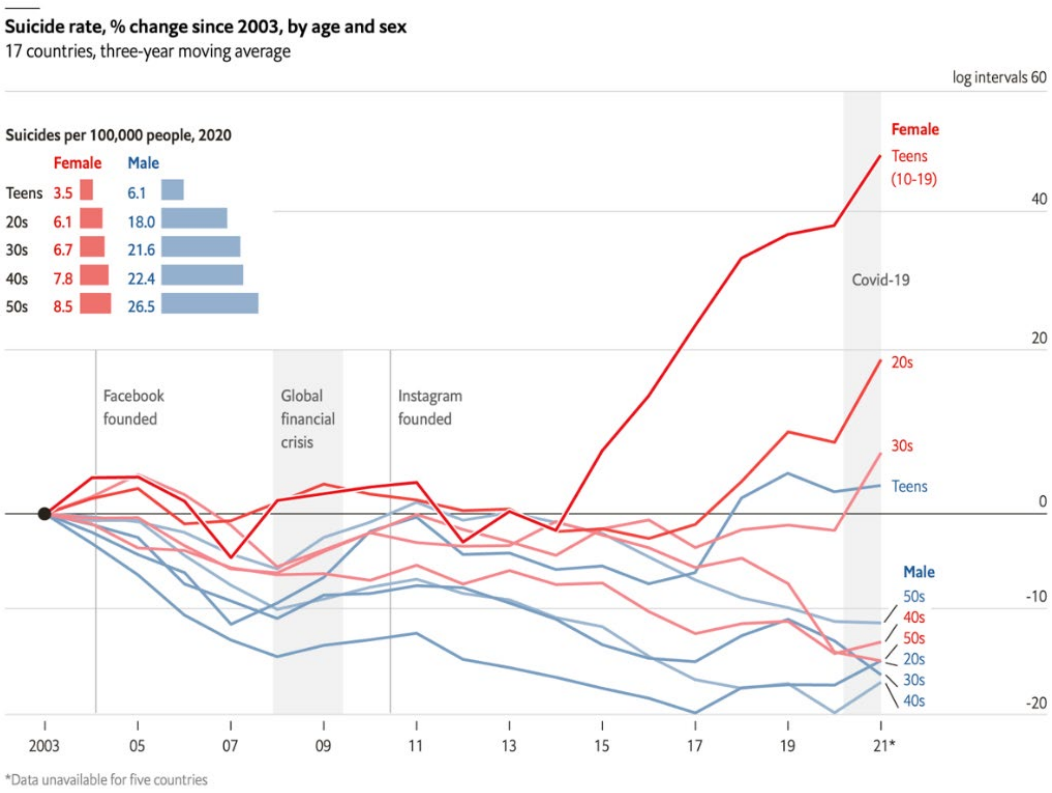
Figure 2: Percent of U.S. 12- to 17-year-olds with major depression in the last year, 2005-2020
Source: National Study of Drug Use and Health. NOTE: Depression assessed using DSM criteria.

(Twenge 2022 at 3.)

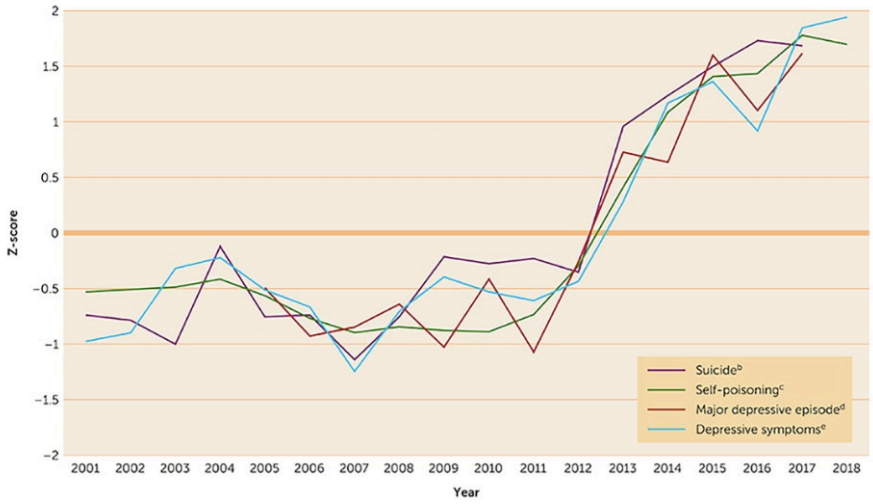
77. Tragically, the same pattern extends beyond depression and mental health to actual completed suicide. While suicide rates for most groups have fallen or remained constant since 2011, completed suicide rates for adolescent girls instead have skyrocketed:

> Suicide rates have been falling overall, but girls—who kill themselves less often than other groups—are an exception. Among girls aged 10–19, suicide rates rose from an average of 3.0 per 100,000 people in 2003 to 3.5 per 100,000 in 2020. The rate among boys, although higher at 6.1 per 100,000 population, has barely changed. (Economist 2023.)

Changes in suicide rates, by biological sex and age group. (Economist 2023.)



78. Twenge (2020) compared multiple indicators of poor mental health among U.S. girls and young women across 2001–2018, again illustrating the dramatic worsening beginning in 2011. "In most cases, the increases in indicators of poor mental health have been larger among girls and young women than among boys and young men." (Twenge 2020 at 19.) These findings confirm the patterns identified herein.



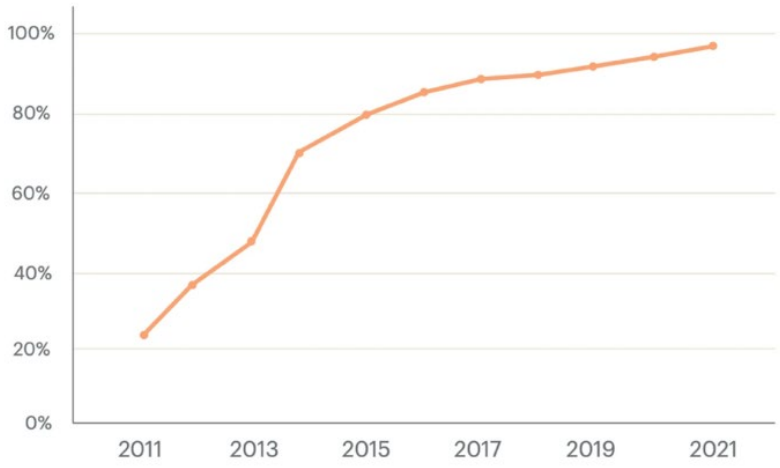
E. The post-2011 decrease in mental health and increase in gender dysphoria is recognized as co-occurring with adolescents' uptake of smartphones.

79. New reports increasingly recognize social media and smartphone usage as the common link behind the proliferation of mental health disorders among adolescents (Brunette 2023; Haltigan 2023), including the recent health advisory by the *American Psychological Association* (APA) on social media use among adolescents. The advisory concluded:

> Research suggests that using social media for social comparisons related to physical appearance, as well as excessive attention to and behaviors related to one's own photos and feedback on those photos, are related to poorer body image, disordered eating, and depressive symptoms, *particularly among girls.* (American Psychological Association 2023 at 8, emphasis added.)

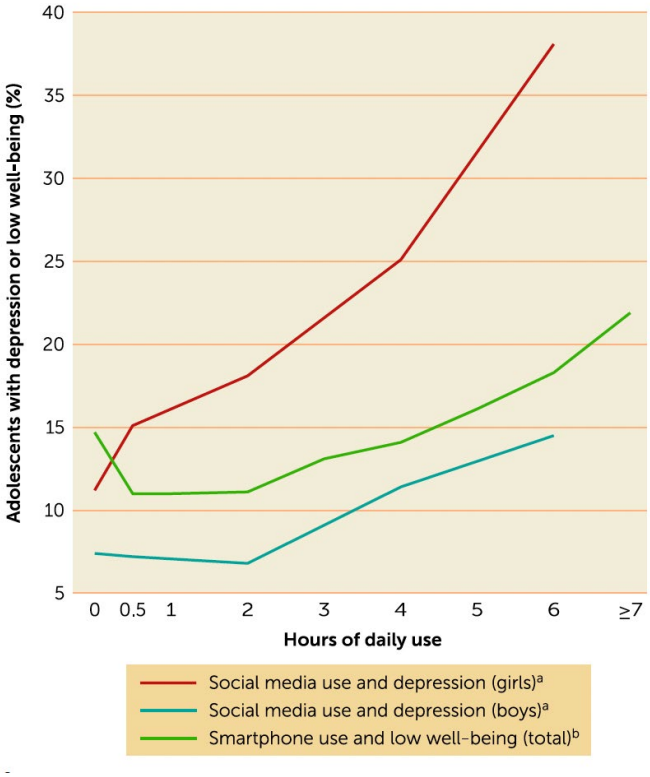
These conclusions further confirm the conclusions of systematic review associating smartphone usage and poorer mental health. (Sohn 2019.)

80. The timing of the increase in gender dysphoria referrals exactly correspond with the penetration of smartphones and social media into adolescent lives: Data published by *Pew Research* illustrates that the rates of smartphone usage among teenagers also began its dramatic rise in 2011–2012:



(Lebrow 2022.)

81. Twenge (2020) documents that it is precisely the heavy users of social media who are most likely to report being depressed, feeling unhappy, or exhibiting suicidality. Again, the association is, by far, most striking for adolescent girls:



(Twenge 2020 at 22.)

82. In their peer-reviewed, nation-wide analysis of Finland's centralized gender identity services (GIS), Kaltiala observed:

> The increase in all the younger people contacting GIS and in psychiatric needs among them have taken place simultaneously with the emergence of the widely recognized crisis in mental health among adolescents and young adults throughout the Western world [44, 45], largely associated with the increasing use of social media [44–46]. Social influences that reduce stigma and barriers to care for people suffering from incongruence between their sexed body and lived gender experience likely improve mental health in this group and social media may offer invaluable support and belongingness that buffers against minority stress. However, social media influences may also result in adolescent and emerging adult females—who present particularly frequently with identity confusion [47]—seeking for a solution to their distress through GR [11] and overshadow the need for psychiatric treatment. (Kaltiala 2023 at 6.)

The sources cited by Kaltiala in this paragraph are:

11: Marchiano, L. (2017). Outbreak: On transgender teens and psychic epidemics. *Psychological Perspectives, 60,* 345–366.
44: Twenge, J. M. (2020). Increases in depression, self-harm, and suicide among U.S. adolescents after 2012 and links to technology use: Possible mechanisms. *Psychiatric Research and Clinical Practice, 2,* 19–25.
45: Krokstad, S., Weiss, D. A., Krokstad, M. A., Rangul, V., Kvaløy, K., Ingul, J. M., Bjerkeset, O., Twenge, J., & Sund, E. R. (2022). Divergent decennial trends in mental health according to age reveal poorer mental health for young people: Repeated cross-sectional population-based surveys from the HUNT Study, Norway. *BMJ Open, 12,* e057654.
46: Abbasi, J. (2023). Surgeon General sounds the alarm on social media use and youth mental health crisis. *JAMA, 330,* 11–12.
47: Bogaerts, A., Claes, L., Buelens, T., Verschueren, M., Palmeroni, N., Bastiaens T., & Luyckx, K. (2021). Identity synthesis and confusion in early to late adolescents: Age trends, gender differences, and associations with depressive symptoms. *Journal of Adolescence, 87,* 106–116.

F. Multiple detransition studies confirm features consistent with the hypothesis that adolescent-onset gender dysphoria is largely a social contagion phenomenon.

83. Respected national health care systems of several countries have warned of the risk that medical transition of minors can lead to detransition and severe regret due to irreversible physical harms. (See Section XV on *Medical Harms*.) Because detransition: (1) can occur several years after transition, (2) is not typically reported to the clinic that provided transition (Littman 2021), (3) thus cannot be distinguished by the clinic from dropping out of a clinical study for other reasons, and (4) is not systematically tracked by any centralized database in the U.S., reliable knowledge about the features and frequencies of detransition cannot develop at the same rate as other aspects of study. The scientific study of detransition has only just begun, with even WPATH's most recent Standards of Care (SoC-8; Coleman 2022) noting that basic information about detransition remains unknown (at S77). In this situation, it is unjustified and misleading to claim that the paucity of evidence suggests that rates of detransition are low, rather than absent and merely reflecting the difficulties collecting reliable data and there having been insufficient time (and effort) for conducting such research.

84. Nevertheless, scientific interest in this issue is extremely high, with the evidence is only now beginning to accumulate. Multiple new studies of detransition are now beginning to appear in the peer-reviewed literature:

Littman, L., O'Malley, S., Kerschner, H., & Bailey, J. M. (2023). Detransition and desistance among previously trans-identified young adults. *Archives of Sexual Behavior*. doi: 10.1007/s10508-023-02716-1

MacKinnon, K. R., Gould, W. A., Enxuga, G., Kia, H., Abramovich, A., Lam, J. S. H., & Ross, L. E. (2023). Exploring the gender care experiences and perspectives of individuals who discontinued their transition or detransitioned in Canada. *PlosONE*. doi: 10.1371/journal.pone.0293868

MacKinnon, K. R., Kia, H., Gould, W. A., Ross, L. E., Abramovich, A., Enxuga, G., & Lam, J. S. H. (in press). A typology of pathways to detransition: Considerations for care practice with transgender and gender diverse people who stop or reverse their gender transition. *Psychology of Sexual Orientation and Gender Diversity*. doi: 10.1037/sgd0000678

Sanders, T., du Plessis, C., Mullens, A. B., & Brömdal, A. (2023). Navigating detransition borders: An exploration of social media narratives. *Archives of Sexual Behavior, 52,* 1061–1072.

Sansfaçon, A. P., Gelly, M. A., Gravel, R., Medico, D., Baril, A., Susset, F., & Paradis, A. (2023). A nuanced look into youth journeys of gender transition and detransition. *Infant and Child Development, 32,* e2402.

Sansfaçon, A. P., Gravel, É., Gelly, M., Planchat, T., Paradis, A., & Medico, D. (in press) A retrospective analysis of the gender trajectories of youth who have discontinued a transition. *International Journal of Transgender Health*. doi: 10.1080/26895269.2023.2279272

These empirical studies have employed a range of techniques to examine detransitioners' characteristics, including semi-structured interviews, thematic analysis of social media sites, and quantitative surveys using independently validated instruments.

85. The most scientifically rigorous of these studies is Littman (2023). To recruit detransitioners to participate in this quantitative, peer-reviewed study, the researchers noted: "Efforts were made to reach communities with differing perspectives about gender dysphoria, desistance, transition, and detransition." (*Id.* at 60.) The study's sample consisted of individuals 91% of whom were biologically female, 81% white, and ranging in age from 18 to 33 years (mean of 24.9 years). The majority of these

individuals described themselves as politically liberal (68%), non-religious (82%), and supportive both of gay marriage rights (86%) and of transgender rights (91%).

86. This study of detransitioners confirmed the conclusions of the qualitative studies interviewing detransitioners and prior survey studies: The majority (53%) reported that the term "rapid-onset gender dysphoria" (the alternative term for adolescent-onset gender dysphoria) correctly described their experience (with 24% reporting it did not, and 23% reporting they did not know). Co-morbid psychiatric diagnoses were acknowledged by the majority, also consistent with prior studies. Self-harm was extremely prevalent in the sample, both before (71%) and during (64%) their time identifying as transgender. Interestingly (and indicating the urgent need for further research), after detransitioning and returning to identifying as their biological sex, the sample reported their rates of self-harm to drop radically—down to 23%.

87. The study's results also supported the social contagion hypothesis of adolescent-onset gender dysphoria:

> Participants in the current study were asked if, at the time of transgender identification, they belonged to a friendship group where one or more members of the group became transgender-identified around the same time. The majority (60.3%) answered in the affirmative (with 24.4% referring to offline friendship groups, 14.1% referring to online friendship groups, and 21.8% referring to both). More than a third of participants responded that the majority of their offline and online friends became transgender-identified (34.6% and 38.5%, respectively) and participants acknowledged that their offline and online friendship groups engaged in mocking people who were not transgender-identified (42.3% and 41.0%, respectively). (Littman 2023 at 68.)

Meriting emphasis is the finding that more than a third of these (overwhelmingly female) respondents reported that "*the majority*" of their friends were at some point transgender-identified. In my opinion, this finding is entirely inconsistent with claims that transgender identity is innate and immutable, analogous to sexual orientation, and is consistent instead with reflecting social and psychological influences.

88. Importantly, study participants were asked about the informed consent procedures they received from the clinicians providing the medical transition

services. The majority (61.5%) reported receiving hormonal treatments from clinicians using only the informed consent, rather than a gate-keeping model, and, although they received some information, the results indicated that:

> 66.7% felt they were inadequately informed about risks and 31.3% felt this about benefits. Only one participant (2.1%) reported that a clinician provided information about treatment alternatives to cross-sex hormones ... 75.0% of participants reported that they received inadequate information about these alternatives, [and fewer than] one-tenth (8.3%) of participants indicated that they were informed by their clinician about the lack of long-term studies about natal females with late-onset gender dysphoria. Similarly, only 12.5% were informed that the risks, benefits, and outcomes for medical transition of late-onset gender dysphoric youth have not been well studied. (Littman 2023 at 70–71.)

G. Suicidality in adolescents has skyrocketed since social media.

89. The sudden and profound increases in youth suicidality pertains to adolescents broadly, not only those expressing gender dysphoria. The *U.S. Centers for Disease Control* (CDC) conducted its Youth Risk Behavior Survey in 2019 and found that 24.1% of female and 13.3% of male high school students reported "seriously considering attempting suicide." (Ivey-Stephenson 2020 at 48.) The CDC survey reported not only that these already alarming rates of suicide attempt were still increasing (by 8.1%–11.0% per year), but also that this increase was occurring only among female students. No such trend was observed among male students. That is, the demographic increasingly reporting suicidality is the same demographic increasingly reporting gender dysphoria. (Ivey-Stephenson 2020 at 51.)

90. SAMHSA produces a series of evidence-based resource guides which includes their document *Treatment for Suicidal Ideation, Self-Harm, and Suicide Attempts Among Youth.* It notes (italics added):

> [F]rom 1999 through 2018, the suicide death rate doubled for females aged 15 to 19 and 20 to 24. For youth aged 10 to 14, the suicide death rate more than tripled from 2001 to 2018. Explanations for the increase in suicide may include bullying, social isolation, increase in technology and *social media*, increase in *mental illnesses*, and economic recession. (SAMHSA 2020 at 5, italics added.)

The danger potentially posed by social media follows from suicidality spreading as a social contagion: Suicidality increases after media reports, occurs in clusters of social groups, and among adolescents after the death of a peer. (Gould & Lake 2013.)

91. Social media voices today loudly advocate 'hormones-on-demand' while issuing hyperbolic warnings that teens will commit suicide unless this is not granted. Adolescents and their parents are both exposed to the widely circulated slogan that "I'd rather have a living son than a dead daughter," and such baseless threats or fears are treated as justification for referring to affirming gender transitions as "*life-saving*" or "*medically necessary*." Such claims grossly misrepresent the research literature, however. Indeed, they are dangerous and unethical: Suicide prevention research and public health campaigns repeatedly warn against circulating such messages, as they can be taken to publicize, or even glorify, suicide and to encourage copy-cat behaviour. (Gould & Lake 2013.)

92. A systematic review of 44 studies of suicidality in LGBTQ youth found only a small association between suicidality and sexual minority stress. (Hatchel 2021.) The quantitative summary of the studies (an especially powerful type of systematic review called *meta-analysis*) found no statistically significant association between suicidality and any of having an unsupportive school climate, stigma and discrimination, or outness/openness. Rather, there were significant associations between suicidality and indicators of social functioning problems, including violence from intimate partners, sexual risk-taking, and victimization from non-LGBT peers *as well as from LGBT peers*. That is, the pattern suggests issues with social functioning generally, not social interactions hampered by sexual minority status.

H. Neuroimaging studies have associated brain features with sex, sexual orientation, and atypical sexualities (paraphilias), but not gender identity.

93. Claims that transgender identity is an innate property resulting from brain structure remain unproven. Neuroimaging and other studies of brain anatomy

repeatedly identify patterns that differ between male and female brains, but when analyses search for those patterns among transgender individuals, "gender identity and gender incongruence could not be reliably identified." (Baldinger-Melich 2020 at 1345.) Although much smaller than male/female differences, statistically significant neurological differences are repeatedly associated with sexual orientation (termed "homosexual" vs "nonhomosexual" in the research literature). Importantly, despite the powerful associations between transsexuality and homosexuality, as explicated by Blanchard, many studies analyzing gender identity failed to control for sexual orientation, representing a problematic and centrally important confound. I myself pointed this out in the research literature, noting that neuroanatomical differences attributed to childhood-onset gender dysphoria should instead be attributed to sexual orientation. (Cantor 2011, Cantor 2012.) A subsequent review of the science agreed, stating:

> Following this line of thought, Cantor (2011, 2012, but also see Italiano, 2012) has recently suggested that Blanchard's predictions have been fulfilled in two independent structural neuroimaging studies. Specifically, Savic and Arver (2011) using VBM on the cortex of untreated nonhomosexual MtFs and another study using DTI in homosexual MtFs (Rametti et al., 2011b) illustrate the predictions. *Cantor seems to be right*". (Guillamon 2016 at 1634, italics added; see also Italiano 2012.)

94. In addition to this confound, because snapshot neurobiological studies can provide only correlational data, it would not be possible for such studies to distinguish whether brain differences cause gender identity or if gender atypical behavior modifies the brain over time, such as through neuroplasticity. As noted by one team of neuroscientists:

> [I]t remains unclear if the differences in brain phenotype of transgender people may be the result of a sex-atypical neural development or of a lifelong experience of gender non-conformity. (Fisher 2020 at 1731.)

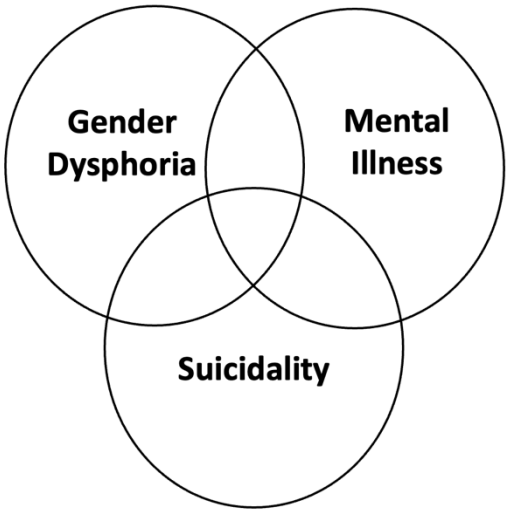
At present, assertions that gender identity is caused by features of neuroanatomy, independent of sexual orientation and other characteristics, represent faith, not science. Neuroimaging studies have repeatedly failed to find evidence supporting claims analogous to "female brains trapped in male bodies" (e.g., Hoekzema 2015; Sorouri

Khorashad 2020; Torgerson 2024). Brain differences identified that potentially distinguished transgender from cisgender samples disappeared when sexual orientation was taken into account (e.g., Burke 2017; Manzouri 2019).

I. Sexual minority stress fails to explain many of the features of adolescent-onset gender dysphoria.

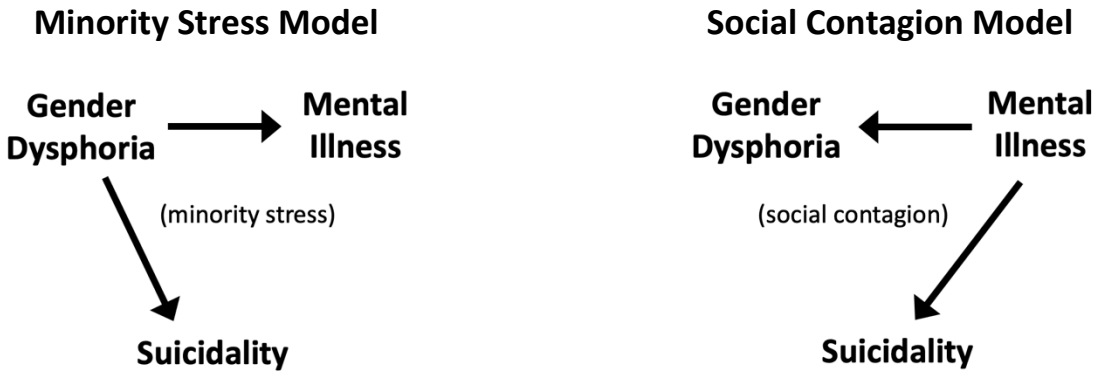
95. There is opposition to the idea that adolescent-onset gender dysphoria is a result of social contagion: The social contagion explanation suggests the identities being expressed by those in this group reflect mental health issues they are experiencing rather a genuine transgender identity. Advocates who reject the social contagion model instead posit *Sexual Minority Stress* (SMS) as the cause of the mental health struggles in this group. In this perspective, transphobia in society, lack of gender affirmation, and obstacles to transitioning cause depression, anxiety, suicidality, and other issues.

96. As evidence, advocates often cite correlations between gender dysphoria and mental health issues, inferring the causal conclusion that the mental health issues are caused by transphobia and failures to support transition. The figure below represents the correlations among these features, depicting them as the overlap between them.



Correlations reflect overlap between variables, including coincidence.

As noted already in the present report, correlations do not imply causation. Correlations are ambiguous: They can be caused in multiple different ways. As depicted in the figure below, the correlations between gender dysphoria and suicidality in this group could be caused by sexual minority stress, or mental health issues in this group are causing both the suicidality and discontent with the sex of their bodies.



Causality reflects which variables exert influence on which others.

97. Although the minority stress model merits consideration among the theoretical possibilities, it provides no explanation for multiple, widely reported phenomena that are readily explained by the social-media/social-contagion model. The minority stress model:

- provides no explanation for the sudden and simultaneous arrival of these phenomena in society;
- does not explain why there was no evidence of these mental health issues among purportedly gender dysphoric individuals before the possibility of medicalized transition became as widespread as it is now;
- is inconsistent with the great majority of new cases being among biological females while it is biological males who receive much more ridicule much more often for gender atypical mannerisms and preferences; and
- does not explain why the mental health profiles of the new demographic of transgender youth include high proportions of ADHD an autism spectrum disorders, which lack strong association with victimization.

98. Also left out by the assumption that these correlations imply causality is the evidence that sexual minority stress is associated with a specific *pattern* of issues

and the evidence that minors reporting gender dysphoria/incongruence are not fitting that *pattern*:

99. A nationwide study of 139,829 students in Finland compared those survey responses of students who indicated their sex matched their self-perceived gender with those whose self-perceptions did not match or responded as "both," "none," or "varies." (Heino 2021.) The analyses confirmed that status as transgender correlated with being bullied. Yet, this study also found transgender status correlated with the *perpetration of bullying*. Moreover, the analyses revealed:

> Transgender identities were also *more strongly associated with perpetration of bullying than subjection to bullying* [and] all involvement in bullying was more commonly reported by non-binary youth than those identifying with the opposite sex. (Heino 2021 at 1, italics added.)

Sexual minority stress theory predicts only the victimization. The existence of both correlations, however, is readily explained as outcome of social media induced lack of health socialization and mental health development.

100. Analysis of the U.S. Transgender Population Health Survey confirmed that transgender-identified youth show elevated rates of non-suicidal self-injury. (Jackman 2025.) The study also found, however, that such self-injury was reported *less* commonly among those who were reported being *more* gender non-conforming, which the study described as "contrary to expectations." (Jackman 2025 at 6.). Sexual minority stress theory predicts that the kids who were more non-conforming would have more stress and self-injury. In addition, the study also found that *greater* connectedness to the transgender community was associated with greater self-harm rather than less. These patterns are not consistent with what minority stress theory would predict, but they are readily explained as youth with poor socialization development employing unhealthy means of attention-seeking and help-seeking from the social environment.

101. A systematic review analyzed the correlations among sexual minority stress, depression, and suicidality among people identifying as transgender or gender

diverse. (Pellicane & Ciesle 2022). Consistent with the sexual minority stress theory, both *distal* and *proximal* factors were examined (also called *external* and *internal* stresses). Distal stress refers events occurring in the person's environment, whereas proximal factors are the mental or cognitive events. In the review of 85 individual studies of minority stress of transgender and gender diverse individuals, Pellicane and Ciesle found the effects to be predominantly associated with the *proximal* factors rather than the distal factors. That is, the associations of sexual minority stress with depression and suicidality were specifically associated with the *expectation* of rejection rather than actual rejection, and associated with *internalized* transphobia rather than transphobia expressed by other people in the environment:

> It is not the experience of rejection itself, but rather, the appraisal of rejection experiences that determines an individual's affective response to instances of rejection. For those that identify as TGD, this would suggest that expectations of rejection are more strongly associated with depression and suicide than experiencing status-based rejection itself, and this conclusion is supported by the findings of the current meta analysis. (Pellicane & Ciesle 2022 at 6.)

PART 3: THE SCIENTIFIC METHOD AND CRITERIA TO ASSESS RESEARCH

VI. The standard for developing *Clinical Practice Guidelines* is *Evidence-Based Medicine* based on formal *Systematic Review* of the evidence.

A. Evidence-Based Medicine applies the scientific method to clinical decisions to manage and minimize cognitive biases.

102. Since its establishment in the 1990s, *Evidence-Based Medicine* (EBM) has emerged as the dominant paradigm for medical decision-making. As described by its manual produced by the U.S. National Academy of Medicine (*f.k.a.*, The Institute of Medicine), *Clinical Practice Guidelines We Can Trust:*

> Before the end of the 20th century, clinical decisions were based largely on experience and skill (the "art" of medicine); medical teaching and practice were dominated by knowledge delivered by medical leaders.… Although some form of evidence has long contributed to clinical practice, there was no generally accepted, formal way of ensuring a scientific, critical approach to clinical decision making. (Institute of Medicine 2011a at 30.)

Thus, "[c]linical epidemiology and evidence-based medicine emerged as solutions to failings of the traditional approach to medical decision making" (*id.* at 32), defining evidenced-based medicine as "the application of scientific method in determining the optimal management of the individual patient" (*id.* at 33). The distinction between evidence-based medicine and the prior, traditional approach was described when it was first introduced by the *Evidence-Based Medicine Working Group,* led by Dr. Gordon Guyatt of McMaster University in Canada:

> Evidence-based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. (Evidence-Based Medicine Working Group 1992 at 2421.)

The evidence-based approach that replaced that view is described this way (Institute of Medicine 2011 at 33):

> The term "evidence-based medicine," coined in 1990, is defined by Daly as "the application of scientific method in determining the optimal management of the individual patient" (Daly 2005 at 89).

Similarly:

> In 1992 the EBM Working Group described the emergent paradigm of Evidence-Based Clinical Decision Making:
>
> - While clinical experience and skill are important, systematic attempts to record observations in a reproducible and unbiased fashion markedly increase the confidence one can have in knowledge about patient prognosis, the value of diagnostic tests, and the efficacy of treatment.
> - In the absence of systematic observation, one must be cautious in the interpretation of information derived from clinical experience and intuition, for it may at times be misleading.
> - The study and understanding of basic mechanisms of disease are necessary but insufficient guides for clinical practice.
> - Understanding certain rules of evidence is necessary to correctly interpret literature on causation, prognosis, diagnostic tests, and treatment strategy.
>
> (Evidence-Based Medicine Working Group 1992 at 2421.)

103. Today, *evidence-based medicine* is a term of art indicating the standard and rigorous procedures of the approach and the conclusions it reaches. It is an error to

describe or insinuate that a clinical intervention qualifies as evidence-based medicine (or evidence-based practice) simply because it appears in a peer-reviewed publication.

104. The most widely used method for assessing the quality of a body of clinical research evidence and for producing clinical recommendations from it is known as the GRADE system, *Grading of Recommendations Assessment, Development and Evaluation.* GRADE has been adopted by the World Health Organization (WHO) which outlines the procedure in the *WHO Handbook for Guideline Development:*

> According to the GRADE framework, the best estimates of the effects of an intervention come from systematic reviews of randomized controlled trials (RCTs) in which the intervention is tested against alternative management approaches. The certainty or level of confidence in an effect estimate depends on several factors, namely risk of bias, imprecision, indirectness, inconsistency and publication bias *(3).* GRADE rates certainty as high, moderate, low and very low based on a combination of these factors.
>
> GRADE also provides guidance on how to formulate recommendations based on systematic reviews of the evidence *(4).* Recommendations can be strong or conditional, depending in part on the level of confidence (certainty) in the effects of a given intervention. When guideline development groups are confident that the desirable consequences (benefits) of an intervention outweigh its undesirable consequences (risks or harms), they will likely issue a strong recommendation in favour of the intervention; when they are confident that the opposite is true, they issue a strong recommendation against the intervention. In cases in which the balance between desirable and undesirable consequences is less certain, the guideline development group will issue a conditional recommendation. (WHO 2014 at 169.)

References (3) and (4) in that passage refer to:

> (3) Balshem, H., Helfand, M., Schünemann, H. J., Oxman, A. D., Kunz, R., Brozek J., et al. (2011). GRADE guidelines: 3. Rating the quality of evidence. *Journal of Clinical Epidemiology, 64,* 401−406.
>
> (4) Andrews, J. C., Schünemann, H. J., Oxman, A. D., Pottie, K., Meerpohl, J. J., Coello, P. A., et al. (2013). GRADE guidelines: 15. Going from evidence to recommendation-determinants of a recommendation's direction and strength. *Journal of Clinical Epidemiology, 66*, 726−735.

105. The *WHO Handbook for Guideline Development* also describes the other standard considerations that contribute to making recommendations:

> In addition to the certainty surrounding effect estimates, several other factors influence the strength of a recommendation under the GRADE approach. These factors include the magnitude of the potential *benefits* and *harms* of *alternative* courses of action; value judgements

> on the trade-off between these harms and benefits; the level of *uncertainty* surrounding the value judgements and preferences of the individuals affected by the recommendation; the extent to which these value judgements and preferences are estimated to vary across population groups; and considerations pertaining to the use of resources. (WHO 2014 at 170, italics added.)

These components again reflect the four aspects of clinical decisions described in their own section of the present report. (Section IX on *Risks, Benefits, Alternatives, and Uncertainties.)*

B. The systematic review process prevents the cherry-picking of studies that favor a particular result.

106. As described by Dr. Gordon Guyatt, the internationally recognized pioneer in evidence-based medicine, "A fundamental principle to the hierarchy of evidence [is] that optimal clinical decision making requires systematic summaries of the best available evidence." (Guyatt 2015 at xxvi.) Systematic reviews are required as the starting point for developing clinical practice guidelines because, by design, that process prevents bias introduced by researchers including only the studies with results they favor. (Moher 2009.) The steps of a systematic review include:

- Define the scope of the review: Population/Patient, Intervention, Comparison/Control, and Outcome(s);
- Select and disclose the keywords used to search the research database(s);
- Select and disclose the criteria used to select "hits" from the search;
- Review abstracts to select the final set of studies, with 2+ two independent reviewers;
- Code and disclose each study's results impacting the research question(s);
- Evaluate the reliability [risk of bias] of each study's results with uniform criteria.

107. As detailed in its own section of the present report, multiple systematic reviews have been conducted of the outcomes of transition of gender in minors. Their conclusions are highly consistent with each other. The contrary views circulating, by contrast, remain unsupported by evidence above the least reliable and most easily biased methods at the very bottom level of pyramid of evidence (e.g., "expert opinion") or beneath the pyramid entirely (e.g., non-representative surveys of whatever people wanted

to fill out the survey) while ignoring the thorough, high-quality evidence of the systematic reviews. Doing so is in direct conflict with very principles of evidence-based medicine. Indeed, the harms resulting from the clinical fads produced by overconfidence in those methods is the very error evidence-based medicine was developed to prevent.

108. When multiple systematic reviews of a topic become available, those reviews can themselves be systematically assessed and summarized. This 'systematic review of systematic reviews' is called an *umbrella review*. In May 2025, the U.S. Department of Health and Human Services (DHHS) published an umbrella review of the research on the treatment of gender dysphoria in minors. The treatment methods spanned social transition, puberty blocking medication, cross-sex hormone treatment, surgery, and psychotherapy. (DHHS 2025.) The DHHS umbrella review largely echoed the findings of the Cass Report from England and highlighted all the systematic reviews to be highly consistent with each other in their conclusions.

C. Systematic review ensures all studies are uniformly assessed with the same criteria.

109. It is common for researchers to read studies and develop their own perceptions of studies' strengths and weaknesses. Although common, doing so allows for the other major source of bias in assessing research evidence: In the absence of explicit criteria and a systematic method of applying them and disclosing their results, assessors can (intentionally or not) exaggerate features of some studies while minimizing or overlooking them in others. Systematic review minimizes the opportunities for such influences by explicating the assessment criteria being applied and disclosing, typically in table form, the features or scores associated with each study. The reliability of the process is demonstrated by the great consistency of its results: The same conclusions were reached by each of multiple institutions and individual researchers applying them. Contradictory claims about the state of the science were limited to those applying only their own, idiosyncratic criteria.

110. Different types of research study have different features requiring assessment, with key distinctions including whether there is one or more different groups of participants, whether data is collected only once or repeatedly over time, and whether participants are assigned to groups in an experiment or select themselves while the researcher observes. Thus, different systems have been developed for assessing what is called the *risk of bias* of these different types. The remainder of the present section describes the most widely used systems for assessing risk of bias. None of these systems is controversial, as demonstrated by both sides of the present debate citing materials based on them. The conclusions of those works themselves are summarized in their own sections of the present report.

111. One of the best established assessment methods, especially for randomized clinical trials (RCTs), is called GRADE. GRADE incorporates the greater level of evidence provided by RCTs by prioritizing them above observational studies. (Guyatt 2011b.) None of the outcomes studies of transition used an RCT design, however, and GRADE's risk of bias system has not been used by the systematic reviews summarizing the evidence. (The other procedures within the GRADE system, for assessing the overall quality of the overall body evidence, however, was used by most such systematic reviews and is described below.)

112. The standard tool for assessing the risk of bias of *non*-randomized studies is the *Newcastle-Ottawa Scale* (NOS; Wells 2011), developed by a collaboration of British and Canadian researchers and in wide international use. The NOS was used by the Endocrine Society for its systematic reviews of cross-sex hormone effects in adults on cardiovascular health (Maraka 2017) and on bone health (Singh-Ospina 2017) and by England's Cass Report for its systematic reviews.

113. The third major quality assessment instruments are those developed by Cochrane: for randomized studies, the *Risk of Bias-2* system (RoB2; Stern 2019; Higgins 2016); and for non-randomized studies, the *Risk of Bias for Nonrandomized*

Studies system (ROBINS-I; Sterne 2016; Jeyaraman 2020). The ROBINS-I and RoB2 were used in the systematic review by Sweden's health care authorities (Ludviggson 2023) and in WPATH's systematic review of mental health effects (Baker 2021). (WPATH did not, however, perform any systematic review of the medical risks of transition.)

114. Other systematic assessment tools have been similarly developed for evaluating other types of materials, the most relevant of such materials being clinical practice guidelines (CPGs). Among the most widely used criteria-based systems for the assessment of CPGs is the *Appraisal of Guidelines for Research & Evaluation-II* (AGREE-II; Brouwers 2010.). AGREE II was applied by the Cass Report's two systematic reviews of CPGs for gender transition (Taylor 2024c, 2024d) and by the prior systematic review of CPGs. (Dahlen 2021).

D. Each treatment outcome study is assessed for its *risk of bias* and combined with other features to rate the *quality of evidence* (aka *confidence of evidence)* for the treatment overall.

115. The other criteria considered in addition to studies' risk of bias in the GRADE approach are:

- inconsistency,
- indirectness of evidence,
- imprecision, and
- publication bias (when studies with negative findings remain unpublished).

GRADE assessments yield a rating on a four-point scale representing the certainty that a reported treatment effect is true (Balshem 2011). These certainty scores and their meanings are:

Certainty	Meaning
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.

Very Low We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect.

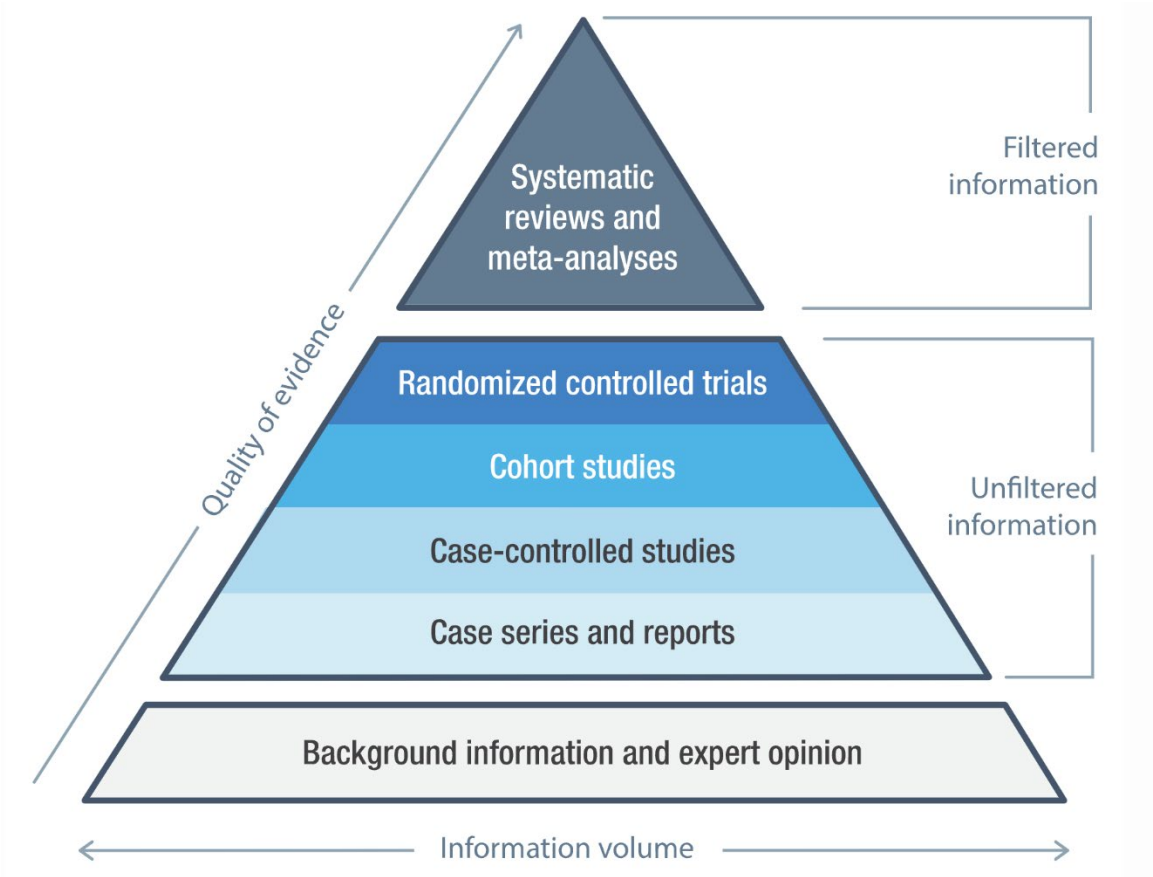
(Balshem 2011 at 404.)

VII. The quality of the types of clinical outcomes studies follows a hierarchy represented as the *Pyramid of Evidence*.

A. The highest level of evidence is the most resistant to bias, providing findings with the greatest certainty.

116. The accepted hierarchy of reliability for assessing clinical outcomes research is routinely represented as a *Pyramid of Evidence* (figure below). Because lower-level studies are generally faster and less expensive to conduct, it is typical for them to outnumber higher-level studies. This is the property meant to be reflected by the pyramid's shape, which is larger at the base and smaller at the apex.

Figure: Pyramid of Levels of Evidence



OpenMD. (2022, Nov. 1). *Levels of evidence (or hierarchy of evidence).* Retrieved from https://openmd.com/guide/levels-of-evidence.

117. The greater certainty of results from studies using higher level research designs follows from those designs incorporating features that rule out the influence of factors that can mimic treatment effectiveness:

Results are more certain when they track the same people over time (*longitudinal*):

- Otherwise, it is possible that the treated and untreated look different at the end because they were already different at the beginning.

Results are more certain from studies that include a *control group* for comparison.

- Otherwise, it is possible that everyone improves over time (*maturation*), and the treatment made no difference.

Results are more certain when they account for known potential *confounds,* such as receiving more than one treatment at the same time.

- Otherwise, improvement might have come from the confounds instead of the treatment.

Results are more certain when studies use *objective* instead of subjective measurement.

- Otherwise, changes may not reflect objective differences that would apply to other people, and instead reflect only unreliable differences in self-perception that continue to differ between people.

Results are more certain when people are *randomized* into treatment groups.

- Otherwise, improvement might be due to differences in unknown confounds that accumulated on one side instead of cancelling each other out.

RCTs provide the most certain results because they include the largest number of these features. Surveys provide the least certain results because they include the fewest.

Among RCTs, results are more certain when treatment group is "*masked*."

- Otherwise, improvements might have come from the placebo effect.

Among surveys, results are more certain when they come from *representative* samples of people chosen to match the features of the whole population, instead of *convenience* samples of people who chose themselves.

- Otherwise, proportions may reflect how the study was advertised and the motivations of the people who decided to participate in the study, instead of the population it was meant to reflect.

B. *Randomized Controlled Trials* (RCT) are the most reliable test of a treatment's effects, with lesser designs showing correlation instead of causality.

118. *Randomized Controlled Trials* (RCTs) are the gold standard method of assessing the effects caused by an experimental treatment. The great scientific weight of RCTs follows from the randomization: People do not pick which research group they are in—a treatment group or a control group. Without random group assignment, it is not possible to identify which, if any, changes are due to the treatment itself or to the factors that led to who did and did not receive treatment.

119. Levels of evidence lower than RCTs are unable to distinguish when changes are caused by the experimental treatment versus caused by other factors that can mimic treatment effects, such as the placebo effect and "regression to the mean."

120. In the absence of evidence that "*x* causes *y*," it is a scientific error to use language indicating there is causal relationship. In the absence of evidence of causality, it is scientifically unsupportable to describe a correlation with terms such as: *increases*, *improves*, *benefits*, *elevates*, *leads to*, *alters*, *influences*, *results in*, *is effective for*, *causes*, *changes*, *contributes to*, *yields*, *impacts*, *decreases*, *harms*, and *depresses*. Scientifically valid terms for correlations include: *relates to*, *is associated with*, *predicts*, and *varies with*.

C. *Cohort studies* are the highest level of evidence about medicalized transition currently available.

121. The highest-level study of medical transition of minors thus far conducted are cohort studies. In cohort studies, a sample of individuals is tracked over time. The researcher observes the variables of interest but does not assign whether or which treatment is received. Cohort studies are able to answer some questions that lower-level studies cannot, such as whether a high-functioning group improved over time versus having been composed of people who were already high-functioning. Cohort studies are, however, below RCTs and are unable to demonstrate causality and

unable to identify how much of any change was due to placebo effects, unknown confounding factors, etc.

D. *Surveys* are not capable of demonstrating treatment safety or treatment effectiveness.

122. Surveys represent observational research, not experimental research. (In science, experiments are studies involving a manipulation, not mere observation, by the researcher.) Surveys and cross-sectional studies can provide only correlational data and cannot demonstrate causality. (See Section VIII.B, *Correlation does not imply causation*.) It is not possible for a survey to yield evidence that a treatment is effective. No number of surveys can test a treatment, advancing it from "experimental" to "established" status.

123. Survey studies of 'convenience samples' (samples non-representative of the whole population) do not even appear on the *Pyramid of Evidence*. In accordance with the routine standards, systematic reviews of treatment studies typically exclude such surveys.

E. *Expert opinion* is the least reliable source, being susceptible to the structural biases above plus personal biases of the individual expert, for which evidence-based medicine was designed to compensate.

124. As Figure 1 illustrates, in evidence-based medicine, opinion based on an individual practitioner's clinical experience is identified as the *least* reliable source of medical knowledge. Among other reasons, this is because non-systematic recollections of unstructured clinical experiences with self-selected clientele in an uncontrolled setting is the most subject to bias. Indeed, mere "clinical experience" was long the basis of most medical and mental health clinical decisions, and it was precisely the scientific and clinical inadequacy of conclusions based on this that led to the development and widespread acceptance of evidence-based medicine. As Dr. Guyatt wrote, "EBM places the unsystematic observations of individual clinicians lowest on the hierarchy," both because EBM "requires awareness of the best available

evidence," and because "clinicians fall prey to muddled clinical reasoning and to neglect or misunderstanding of research findings." (Guyatt 2015 at 10, 15.)

VIII. Methodological defects limit or negate the evidentiary value of many studies of treatments for gender dysphoria in minors.

A. In science, to be valid, a claim must be objective, testable, and falsifiable.

125. In behavioral science, people's self-reports do not represent objective evidence. It is when emotional and other pressures are the strongest that the distinction between, and the need for, objective over subjective evidence is greatest. Surveys do not represent objective evidence. This is especially true of non-random surveys and polls, recruited through online social networks of the like-minded.

B. Correlation does not imply causation.

126. Studies representing lower levels of evidence are often used because they are faster and less expensive than studies representing higher levels. A disadvantage, however, is that they are often limited to identifying which features are *associated* with which other features, but they cannot show which ones are *causing* which. It is a standard property of statistical science that when a study reports a correlation, there are necessarily three possible explanations. Assuming the correlation actually exists (rather than representing a statistical fluke, for example), it is possible that x causes y, that y causes x, or that there is some other variable, z, that causes both x and y. (More than one of these can be true at the same time.) To be complete, a research analysis of a correlation must explore all of these possibilities.

127. For example, assuming there does exist a correlation between treatment of gender dysphoria in minors and mental health: (1) It is *possible* that treatment causes improvement in mental health. (2) Yet, it is *also possible* that having good mental health is (part of) what enabled transition to occur in the first place. That is, because of gate-keeping procedures in the clinical studies, those with the poorest mental health are typically not permitted to transition, causing the higher mental health

scores to be sorted into the transitioned group. (See Section VIII.G. on *Selection Bias*.) (3) It is also possible that a third factor, such as wealth or socioeconomic status, causes *both* the higher likelihood of transitioning (by being better able to afford it) *and* the likelihood of mental health (such as by avoiding the stresses of poverty or affording psychotherapy).

128. This principle of scientific evidence is why surveys do not (and cannot) represent evidence of treatment effectiveness. Surveys are limited to correlations.

C. Confounding: When gender transition is accompanied by psychotherapy, it cannot be known which one caused the changes observed.

129. Confounding is a well-known issue in science, and accounting for potential confounds, both known and unknown, is central to all research design. The failure to account for confounding factors is a serious methodological defect that can invalidate a study's conclusions; however, as detailed in the present report, that very failure pervades treatment studies of gender dysphoria. Patients who undergo medical transition procedures in research clinics routinely undergo mental health treatment (psychotherapy) at the same time. Without explicit procedures to distinguish them, it cannot be known which treatment produced which outcome (or in what proportions). Indeed, to the extent that they are observed at all, that any improvements to mental health were the result of treatments for mental health is a more parsimonious (and, therefore, scientifically superior) conclusion than is medicalized treatment being the cause of mental health improvement.

D. Cohort study findings are vulnerable to multiple factors that mimic treatment effectiveness (maturation, attrition, and regression to the mean).

130. *Regression to the mean* arises when researching issues, such as mood, depression, or levels of emotional distress that typically fluctuate over time. People are more likely to seek out treatment during low points rather than high points in their emotional lives. Thus, when tracking emotional states over time, the average of a group

of people in a treatment group may often show an increase; however, without an untreated control group to which to compare them, researchers cannot know whether the group average would have increased anyway, with only the passage of time.

131. Blinding or masking participants in an RCT from which group they are in has been described as a preferred strategy since the 1950s in order to exclude the possibility that a person's expectations of change caused any changes observed (the placebo effect). In practice, however, such masking makes little or no meaningful difference. Particularly very high quality review (a meta-analysis of meta-analysis research), revealed no statistical difference in the sizes of the effects detected by blinded/placebo-controlled studies from non-blinded/non-placebo-controlled studies of depression. (Moustgaard 2019.) That is, the pre-/post- treatment differences found in placebo groups are not as attributable to participants' expectations of improvement as they are to expectable regression to the mean. (Hengartner 2020.)

132. *Attrition* refers to people dropping out of treatment and research studies of treatment. Attrition rates can produce the statistical illusion of a treatment being effective because people experiencing no improvement are more likely to drop out of a study. Because it is normal for human feelings to fluctuate over time, it is always expectable in mental health research, for some people to report better at the end point; some, worse; and some, the same. Because people perceiving poorer moods are more likely to drop out of treatment and treatment studies, the average scores of the remaining people will be higher, despite the treatment having no effect of its own.

133. *Maturation* refers to situations when some psychological issues resolve on their own, without treatment. When a study lacks a control group for comparison against the treatment group, it cannot identify whether the treatment caused the improvement observed or if people would have improved anyway, even in the absence of the treatment, simply because they matured. It is already shown that gender dysphoria desists for the large majority of cases of childhood-onset gender dysphoria (See

Section IV.D. on *Childhood-Onset Gender Dysphoria*), and the desistance rate among adolescent-onset cases remains unknown.

E. Studies lacking control groups cannot show treatment effectiveness.

134. Among the deficiencies common to research on transition outcomes is that when comparing a sample's mental health before versus after transition, differences are not necessarily attributable to the transition itself. Especially during childhood and adolescence, very many changes occur in addition to the transition. Studies including one group that receives an intervention and a matched *control group* (which does not receive the intervention) can often find the levels of mental health change in *both* groups: When both the study participants who did and those who did not receive the intervention, changes are due some other factor (such as maturation). Studies that do not include any control group at all (that is, *pre-/post- studies* in which all participants transitioned) are unable to ascertain when participants would have improved anyway, even without transition. Such an issue is particularly problematic in studies for which the outcome measures are subjective, as in the present situation. The lack of control groups against which to compare the transitioning groups is one of the short-comings specifically identified by England's systematic review of outcomes of social transition:

> There is limited, low-quality evidence on the impact of social transition for children and adolescents experiencing gender dysphoria/incongruence. Most published studies are cross-sectional with non-representative samples and *lack an appropriate comparator group*. (Hall 2024 at 6.)

F. Non-representative samples, such as Internet surveys, lack *external validity:* Their results do not apply outside the study population.

135. The purpose of clinical science is to establish from a finite sample of study participants information about the effectiveness and safety, or other variables, of a treatment that can be generalized to other people. Such extrapolation is only scientifically justified with populations matched on all relevant variables. The identification of

those variables can itself be a complicated question, but when an experimental sample differs from another group on variables already known to be related, extrapolation cannot be assumed but must be demonstrated directly and explicitly.

G. Clinical "gate-keeping" permitted only the mentally healthy to transition, establishing a *selection bias,* a statistical illusion of improved mental health.

136. Importantly, clinics treating gender dysphoria are expected to conduct mental health assessments of applicants seeking medical transition, disqualifying from medical services patients with poor mental health. (The adequacy of the assessment procedures of specific clinics and clinicians remains under debate, however.) Such gate-keeping—which was also part of the original "Dutch Protocol" studies—can lead to misinterpretation of data unless care is explicitly taken. A side-effect of excluding those with significant mental health issues from medical transition is that when a researcher compares the average mental health of the gender dysphoric individuals first presenting to a clinic with the average mental health of those who completed medical transition, then the post-transition group would show better mental health—but only because of the *selection bias* (Larzelere 2004; Tripepi 2010), even when the transition had no effect at all.

IX. Four components are required for clinical decision-making—*Risks, Benefits, Alternatives,* and *Uncertainties*—with the absence of any invalidating the decision.

137. Clinical decision-making is based on assessing the *risk*-to-*benefit* ratios of each of the treatment *alternatives* given the *uncertainties* surrounding each. That is, a given benefit can be worth some risks, but not others. Treatments can be justified by low quality evidence of benefit when there is low risk of harm, but treatment with a high risk of harm require high quality evidence of benefit. A treatment can have a beneficial risk-to-benefit ratio yet still be unacceptable because we are highly *uncertain* that the patient actually has that disorder. As well, the potential benefit of a treatment can be worth its risks when we have no choice, but not worth those risks

when an *alternative* is available that poses less risk. Clinical decisions require the simultaneous consideration of all four components and are not valid if any is missing or isolated from the others.

138. These four criteria are reflected in, for example, the approval process of the U.S. Food and Drug Administration (FDA). In that process:

> FDA reviewers evaluate clinical *benefit* and *risk* information submitted by the drug maker, taking into account any *uncertainties*.... Evidence that the drug will benefit the target population should outweigh any risks and uncertainties. (U.S. Food and Drug Administration 2022, italics added.)

To consider alternatives, the process also includes:

> [A] drug intended to treat patients with a life-threatening disease for which no other therapy exists may be considered to have benefits that outweigh the risks even if those risks would be considered unacceptable for a condition that is not life threatening. (U.S. Food and Drug Administration 2022.)

A. Treatment safety and effectiveness are assessed relative to each other as a risk-to-benefit ratio, not as "safe" or "effective" relative to one threshold.

139. Activists have asserted that use of puberty blockers and cross-sex hormones on adolescents to be "safe." This claim is unsupported by any substantial scientific evidence, depreciates widely recognized risks of serious harm to minors so medicalized, and ignores both the many unknowns and the growing international doubts about their use.

140. At the outset, it is important to understand the meaning of "safety" in the clinical context. Treatments are not deemed simply "safe" or "unsafe," as activists repeatedly use those words. Rather, the criteria for assessing safety require simultaneous consideration of both components of the risk-to-benefit ratio, and discussion of the safety of hormonal interventions on the natural development of children requires consideration of both of them. These dual components are reflected in FDA regulations:

> There is reasonable assurance that a device is safe when it can be determined, based upon valid scientific evidence, that *the probable benefits* to health from use of the device for its intended uses and conditions of use,

> when accompanied by adequate directions and warnings against unsafe use, outweigh *any probable risks.* (Code of Federal Regulations Title 21 Sec. 860.7, italics added.)

B. The acceptability of risk-to-benefit ratios differ with the presence versus lack of alternatives and with diagnostic uncertainty and other unknowns.

141. Valuations of risk-to-benefit ratios are relative to the other treatment alternatives available. The risk-to-benefit ratio of a given treatment can be acceptable when there are no alternatives but unacceptable when there are alternatives with superior risk-to-benefit ratios. In the present situation, for treating the psychological distress of youth reporting gender dysphoria, the pertinent task is comparing the risk-to-benefit ratios of social and subsequent medical transition to that of psychotherapy.

142. Outcome studies of medical transition have found either no overall benefit to mental health in minors or found no benefit beyond that of psychotherapy alone. (See Section XIII on *Social Transition Not Associated with Mental Health Benefits.*) Although the elements of social transition do not themselves pose physical, medical risks, social transition is strongly associated with advancing to medicalized interventions. In contrast, psychotherapy poses very low risk of harm (if any at all), whereas the risks of medicalization are objectively high. The evidence of potential benefits of transition is of low quality and is highly subjective. Because psychotherapy poses so much less risk than does medical transition, it does not hold the same burden of evidence as medical transition: It is the medicalization that holds the burden of proof to demonstrate it provides greater benefit to justify its greater harms to objectively healthy and functioning tissue. This represents an instance of the central medical ethic of *Do no harm.*

143. As the final component, valuations of risk-to-benefit ratios differ according to the relative certainty and unknowns of the alternatives. The risk-to-benefit ratio of a treatment may be acceptable given an objective and highly accurate blood test

that reliably predicts outcomes, but not worth the risks when one is uncertain the patient actually has the condition corresponding to the treatment posing the risks. The diagnoses of purely medical conditions (such as precocious puberty and disorders of sexual development) can be made with very high accuracy and on the basis of objective, physical testing, but the diagnosis of gender dysphoria is highly uncertain, based on ambiguous features with no objective means of verification.

C. Evidence-Based Medicine opposes *discordant guidelines*—strong recommendations based on low quality evidence.

144. Within the Evidence-Based Medicine (EBM) model, strong recommendations generally require having strong evidence—weak evidence can support only weak recommendations. The World Health Organization makes this explicit in the *WHO Handbook for Guideline Development.* EBM refers to this issue as "discordance," and Chapter 14 of the WHO Handbook, *Strong recommendations when the evidence is low quality,* includes:

> [G]uidance *warns against discordant recommendations* because when either the benefits or harms of an intervention are uncertain, one cannot be confident that an intervention does more good than harm. Strong recommendations are directives that are meant to be followed by all or almost all guideline users and under all or almost all foreseeable circumstances.… Because of this, discordant recommendations may entrench practices whose benefit is uncertain. For instance, a discordant recommendation may lead the users of a WHO guideline to carry out interventions that are detrimental individually or collectively or to waste scarce resources on ineffective interventions. (WHO 2014 at 170–171, italics added.)

145. A peer-reviewed article, published in *BMC Medical Research Methodology,* compared quality of evidence with strength of recommendations for all the National Clinical Guidelines (NCGs) of Ireland after 2019, when that country's national health care system formally adopted the evidence-based medicine approach. (Chong 2023). Chong opened by summarizing the basic principle behind evidence-based medicine:

> 1) Strong recommendations confirm confidence that the desirable effects outweigh the undesired consequences and 2) conditional/weak recommendations are made when there is uncertainty regarding potential harms or disadvantages.… For the development of trustworthy guidelines there should be concordance between the quality (certainty) of the

> evidence and the strength of the recommendations. (Chong et al. 2023 at 2.)

146. There can exist exceptions in which EBM will support a discordant recommendation: As outlined in the following, these mostly refer to weak evidence being sufficient to justify strong recommendations when they are recommendations *against* the treatment. (Thus, it is not possible to assess treatment recommendations without knowing whether they are recommendations for or against that treatment.) As Chong noted: When the evidence of benefit is of low or very low quality, but the evidence of harm is high or moderate, then the recommendation is a strong recommendation *against* the treatment, and when the evidence shows that two treatments have potentially equivalent effectiveness but that one clearly poses less risk (such as with psychotherapy versus medical transition), then the recommendation is a strong recommendation *against* the treatment with the greater risk. (Chong 2023 at 3.)

147. WHO (2014) provides the same instructions:

> When guideline development groups are confident that the desirable consequences (benefits) of an intervention outweigh its undesirable consequences (risks or harms), they will likely issue a strong recommendation in favour of the intervention; when they are confident that the opposite is true, they issue a strong recommendation against the intervention. In cases in which the balance between desirable and undesirable consequences is less certain, the guideline development group will issue a conditional recommendation. (WHO 2014 at 169.)

For example, when there is only low or very low quality evidence of benefit (such as with mental health benefits from medical transition), but high or moderate level evidence of harm (such as with the sterilization caused by cross-sex hormones administered to prepubescent reproductive organs), the proper application of the principles of GRADE as clearly set out in these sources yields a strong recommendation *against* the intervention, not for it.

148. Both Chong (2023) and WHO (2014) identify five situations which represent exceptions to the concordance principle, in which strong recommendations may be

appropriate despite low quality evidence. These give situations are listed below, with four of them being recommendations *against* the treatment:

Situations in which a strong recommendation may be indicated despite low quality evidence.

Situation	Evidence Quality		Recommendation
	Benefits	Harms	
Uncertain benefit, certain harm	Low or very low	High or moderate	Strong recommendation *against* the more harmful/costly option
Potentially equivalent options, one clearly less risky or costly than the other	Low or very low	High or moderate	Strong recommendation *against* the more harmful/costly option
High confidence in benefits being similar, but one option potentially more risky/costly	High or moderate	Low or very low	Strong recommendation *against* the potentially more harmful/costly option
Potential catastrophic harm	Immaterial (very low to high)	Low or very low	Strong recommendation *against* the more harmful/costly option
Life-threatening situation	Low or very low	Immaterial (very low to high)	Strong recommendation in favor of the intervention

149. A "life-threatening situation" is one for which it is well documented that death would result in very substantial proportion of the affected individuals. The *WHO Handbook* offers as an example that, because multidrug resistant tuberculosis so often results in death, it is acceptable to recommend a fluoroquinolone, despite the evidence of its lesser generally effectiveness and greater toxicity than front-line treatment. (WHO (2014) at 172). As the science reviewed herein makes very clear, it is not

possible to assert that a child or adolescent presenting at a gender clinic presents a comparable "life-threatening situation." Nor does any responsible voice (nor even WPATH) assert that the risks posed by administering puberty blockers or cross-sex hormones to minors are "immaterial." In short, the *only* situation in which the principles of evidence-based medicine permit a strong recommendation based on low quality evidence does not apply.

PART 4: OUTCOMES OF GENDER TRANSITION IN MINORS

X. Gender transition spans both medical and non-medical interventions, each carrying both medical and psychological implications.

150. Gender transition includes both social and medical aspects. Social transition describes steps such as: changing names, pronouns, and, when engaging in sex-segregated activities, such as athletics or restroom and locker room use, doing so with the biologically opposite sex. Medical transition includes puberty-blockers, cross-sex hormones, and surgeries such as mastectomy, vaginoplasty, or phalloplasty.

151. The available evidence strongly associates undergoing social transition with substantially greater likelihoods of subsequently undergoing medical interventions. Although the nature of this association has not been definitively established, the interpretation that best explains the evidence is that social transition causes gender dysphoria to persist when it would otherwise remit, leading youth to undergo medical transition when they otherwise would not. Thus, knowledge of the effects of the medical interventions is necessary for making informed decisions about social transition. The known physical health risks to minors of treatment with puberty-blockers, cross-sex hormones, and their combination are summarized in a later section as are summaries of potential risks that remain untested. Although there do not yet exist data on the long-term consequences of these treatments when they are

begun at puberty or during adolescence, the medical consequences known from the research with adult transitioners are also described in the present report.

152. Because of the association between social transition and greater likelihoods of medical transition, enabling or facilitating social transition conveys ethical responsibility for the effects of the then expectable medical procedures. By way of analogy, enabling and facilitating opportunities for exercise and healthy eating are not themselves medical procedures, but nonetheless have profound medical implications.

153. *Gender Dysphoria* and the transition of gender represent a highly complicated interplay of physical and subjective elements. A person's claim of being the other sex contradicts all physical, objective evidence. Medicalized transition is carried out on objectively healthy tissue—interventions that reduce rather than increase their biological functioning. Despite being physical interventions with objective measures of success, their outcomes are subjective and psychological: A surgical or hormonal procedure may have the desired physical effect, yet still be a failure, for not having the psychological effects as hoped.

154. The alternatives for treating reported cases of gender dysphoria pit physical intervention (endocrinological and surgical) with nonphysical intervention (psychotherapy). Yet, these are performed by entirely different clinical providers: Despite any subjective perceptions by any clinicians of their own effectiveness or their own professional experiences, no one clinician can compare the outcomes of these distinct interventions with each other.

XI. Social changes to sex-specific indicators of gender status comprise *social transition,* a highly significant psychological intervention, with potentially profound and enduring consequences.

155. Several of the best known and most widely cited clinicians and researchers on children expressing gender dysphoria describe social transition as a very substantial mental health intervention unto itself.

> Social transition is also seen as a significant intervention which may alter the course of gender development with medical and surgical interventions being sought by children whose gender dysphoria/incongruence might not have otherwise persisted beyond puberty. (Hall 2024 at 1–2.)
>
> [T]hose who had socially transitioned at an earlier age and/or prior to being seen in clinic were more likely to proceed to a medical pathway … it is possible that social transition in childhood may change the trajectory of gender identity development for children with early gender incongruence. (Cass 2024a at 31–32.)
>
> [P]arents who support, implement, or encourage a gender social transition (and clinicians who recommend one) are implementing a psychosocial treatment that will increase the odds of long-term persistence. (Zucker 2018 at 237.)
>
> [I]f one conceptualizes gender social transition as a type of psychosocial treatment, it should come as no surprise that the rate of gender dysphoria persistence will be much higher as these children are followed into their adolescence and young adulthood (see Rae et al., 2019). If this is, in fact, the case, one might ask why would one recommend a first-line treatment that is, in effect, iatrogenic. (Zucker 2020 at 37.)

The research confirms such predictions. (See Section XII on *Social Transition and Persistence*.)

156. Despite activists describing social transition as simple to reverse, clinicians and researchers studying the development of youth expressing gender dysphoria describe the difficulties youth experience when actually experiencing in that situation:

> In the desisting group, two girls, who had transitioned when they were in elementary school, reported that they had been struggling with the desire to return to their original gender role, once they realized that they no longer wanted to live in the "other" gender role. Fear of teasing and shame to admit that they had been "wrong" resulted in a prolonged period of distress. (Steensma & Cohen-Kettenis 2011 at 649.)

XII. Social transition of children is associated with greatly elevated persistence of gender dysphoria, rates of medical transition, and its risks to physical health.

157. Despite only low quality evidence being available, studies repeatedly suggest social transition to increase the probably of persistence. The Cass Report, integrating the results of its multiple systematic reviews and offering its final set of recommendations, noted "social transition in childhood may change the trajectory of gender identity development for children with early gender incongruence." (Cass 2024a at 32.)

158. Finland, when re-evaluating its medical policies, also conducted a systematic review of potential risks and benefits to minors of gender transition. (Finland PALKO/COHERE 2020.) It came to the same conclusion, warning that transition might interfere with desistance occurring as a natural process of maturation and instead *cause* or *prolong* gender dysphoria and its distress. (That is, that gender transition in minors may be *iatrogenic*.) According to Finland's subsequent recommendations:

> In cases of children and adolescents, ethical issues are concerned with the natural process of adolescent identity development, and the possibility that medical interventions may interfere with this process. It has been suggested that hormone therapy (e.g., pubertal suppression) alters the course of gender identity development; i.e., it may consolidate a gender identity that would have otherwise changed in some of the treated adolescents. The reliability of the existing studies with no control groups is highly uncertain, and because of this uncertainty, no decisions should be made that can permanently alter a still-maturing minor's mental and physical development. (Finland PALKO/COHERE 2020 at 8.)

The conclusions of these systematic reviews are consistent with my own analysis of the several lines of pertinent research, summarized in the following sections.

A. Absent social transition, childhood-onset gender dysphoria desisted for the majority of children, in all 11 of the 11 existing outcomes studies.

159. Currently, there exist 11 cohort studies that followed up children who expressed gender dysphoria before puberty, listed in the following table. I first published this comprehensive list of studies in my own peer-reviewed article on the topic. (Cantor 2019.) The children in these studies were receiving professional mental health support during the study period but were not permitted to engage in social transition. In sum, despite coming from a variety of countries, conducted by a variety of labs, using a variety of methods, at various times across four decades, every study without exception has come to the identical conclusion: Among prepubescent children expressing gender dysphoria, the majority cease to want to be the other gender over the course of puberty—ranging from 61–88% desistance across the large, prospective

studies. Such cases are often referred to as "desisters," whereas children who continue to feel gender dysphoric are often called "persisters." After puberty, the majority of such children report being gay or lesbian instead of being transgendered.

160. The developers of the Dutch Protocol, at the Vrije University gender clinic, drew the same conclusions, noting that "[a]lthough the persistence rates differed between the various studies . . . the results unequivocally showed that the gender dysphoria remitted after puberty in the vast majority of children" (Steensma 2010 at 500) and that "a more likely psychosexual outcome in adulthood is a homosexual sexual orientation without gender dysphoria" (Steensma & Cohen-Kettenis 2011 at 649.). Those authors' reference to remittance of dysphoria "*after* puberty" is accurate and important. Many advocates of transition claim that children misrepresent this as referring to children still expressing dysphoria at the very *onset* of puberty and claim that the dysphoria will persist for them as well. There is no research justifying such a slippage in language.

Cohort studies of gender dysphoric, prepubescent children.

Count	Group	Study
2/16 4/16 10/16	gay trans-/crossdress straight/uncertain	Lebovitz, P. S. (1972). Feminine behavior in boys: Aspects of its outcome. *American Journal of Psychiatry, 128,* 1283–1289.
2/16 2/16 12/16	trans- uncertain gay	Zuger, B. (1978). Effeminate behavior present in boys from childhood: Ten additional years of follow-up. *Comprehensive Psychiatry, 19,* 363–369.
0/9 9/9	trans- gay	Money, J., & Russo, A. J. (1979). Homosexual outcome of discordant gender identity/role: Longitudinal follow-up. *Journal of Pediatric Psychology, 4,* 29–41.
2/45 10/45 33/45	trans-/crossdress uncertain gay	Zuger, B. (1984). Early effeminate behavior in boys: Outcome and significance for homosexuality. *Journal of Nervous and Mental Disease, 172,* 90–97.
1/10 2/10 3/10 4/10	trans- gay uncertain straight	Davenport, C. W. (1986). A follow-up study of 10 feminine boys. *Archives of Sexual Behavior, 15,* 511–517.
1/44 43/44	trans- cis-	Green, R. (1987). The "sissy boy syndrome" and the development of homosexuality. New Haven, CT: Yale University Press.
0/8 8/8	trans- cis-	Kosky, R. J. (1987). Gender-disordered children: Does inpatient treatment help? *Medical Journal of Australia, 146,* 565–569.
21/54 33/54	trans- cis-	Wallien, M. S. C., & Cohen-Kettenis, P. T. (2008). Psychosexual outcome of gender-dysphoric children. *Journal of the American Academy of Child and Adolescent Psychiatry, 47,* 1413–1423.
3/25 6/25 16/25	trans- lesbian/bi- straight	Drummond, K. D., Bradley, S. J., Badali-Peterson, M., & Zucker, K. J. (2008). A follow-up study of girls with gender identity disorder. *Developmental Psychology, 44*, 34–45.
47/127 80/127	trans- cis-	Steensma, T. D., McGuire, J. K., Kreukels, B. P. C., Beekman, A. J., & Cohen-Kettenis, P. T. (2013). Factors associated with desistence and persistence of childhood gender dysphoria: A quantitative follow-up study. *Journal of the American Academy of Child and Adolescent Psychiatry, 52,* 582–590.
17/139 122/139	trans- cis-	Singh, D., Bradley, S. J., Zucker, K. J. (2021). A follow-up study of boys with Gender Identity Disorder. *Frontiers in Psychiatry*, 12:632784.

*For brevity, the list uses "gay" for "gay and cis-", "straight" for "straight and cis-", etc.

161. The consistent observation of high rates of desistance among pre-pubertal children who express gender dysphoria demonstrates a pivotally important—yet often overlooked—feature: Because gender dysphoria so often desists on its own, clinical researchers cannot assume that therapeutic intervention cannot facilitate or speed desistance for at least some patients. That is, it cannot be assumed that gender identity is immune to influence such as from psychotherapy. Such is an empirical question, and there has not yet been any such research.

B. The two follow-up studies which included children who underwent social transition found gender dysphoria persisted for the great majority.

162. The Olson team have published a cohort study of prepubescent children, ages 3–12 (average age of 8), who had already made a complete, binary (rather than intermediate) social transition, including a change of pronouns. (Olson 2022.) The study did not employ DSM-5 diagnosis:

> This study did not assess whether participants met criteria for the Diagnostic and Statistical Manual of Mental Disorders, Fifth edition, diagnosis of gender dysphoria in children. Many parents in this study did not believe that such diagnoses were either ethical or useful and some children did not experience the required distress criterion. (Olson 2022 at 2.)

Conflicting entirely with the outcomes reported by all 11 prior studies, feelings of gender dysphoria desisted for only very few of Olson's sample of socially transitioned children: 7.3%.

163. Although the Olson team did not mention it, their result confirms the prediction of other researchers who postulated that social transition *itself* represents an active intervention able to cause gender dysphoria to persist when it would otherwise have resolved and avert any need for subsequent medicalization and its attendant risks. That is, the Olson results suggest that the social transition of prepubescent children prevents gender dysphoria from desisting on its own. (Singh 2021; Zucker 2018, 2020.) Similarly, the Dutch team examined a variety of factors in an attempt

to develop a means of distinguishing the children whose gender dysphoria would desist versus persist past puberty and found social transition to be a significant indicator:

> *Childhood social transitions were important predictors of persistence,* especially among natal boys. Social transitions were associated with more intense GD in childhood, but have never been independently studied regarding the possible impact of the social transition itself on cognitive representation of gender identity or persistence. *[Social transition] may, with the hypothesized link between social transitioning and the cognitive representation of the self, influence the future rates of persistence.* (Steensma 2013 at 588–589, italics added.)

164. Consistent with my interpretations above, the systematic review of social transition for England's Cass Report identified these same two research studies and came to the same conclusion about the implications of the evidence:

> In this review, two studies suggest that children who socially transition are more likely to continue to experience gender dysphoria/incongruence in adolescence.... One of these studies also reported that the majority of those who socially transitioned progressed to medical interventions. (Hall 2024 at 6.)

C. The distinct outcomes of youth who underwent social transition versus those who did not is accepted even by groups that endorse medical transition.

165. These conclusions are long established. They have been noted, not only by the recent Cass Report, but also by current and earlier versions of clinical practice guidelines. These include the guidelines from the Endocrine Society:

> [S]ocial transition (in addition to GD/gender incongruence) has been found to contribute to the likelihood of persistence. (Hembree 2017 at 3879.)
>
> In most children diagnosed with GD/gender in congruence, it did not persist into adolescence ... the large majority (about 85%) of prepubertal children with a childhood diagnosis did not remain GD/gender incongruent in adolescence (20). *If children have completely socially transitioned, they may have great difficulty in returning to the original gender role upon entering puberty* (40). (Hembree 2017 at 3879, italics added.)

Similarly, such groups have historically recognized also that the common outcome was homosexuality or bisexuality, as already noted. (See Section IV.D.):

> In adolescence, a significant number of these desisters identify as homosexual or bisexual. (Hembree 2009 at 3876.)

166. WPATH noted that after social transition, a "change back to the original gender role can be highly distressing and [social transition can] even result in postponement of this second transition on the child's part." (Coleman 2012 at 176.)

XIII. Systematic review shows social transition to be unassociated with benefits to mental health.

A. The only systematic review of social transition outcomes in minors is from the *Cass Report,* which found the studies to be at high risk of bias and to fail to show mental health to improve.

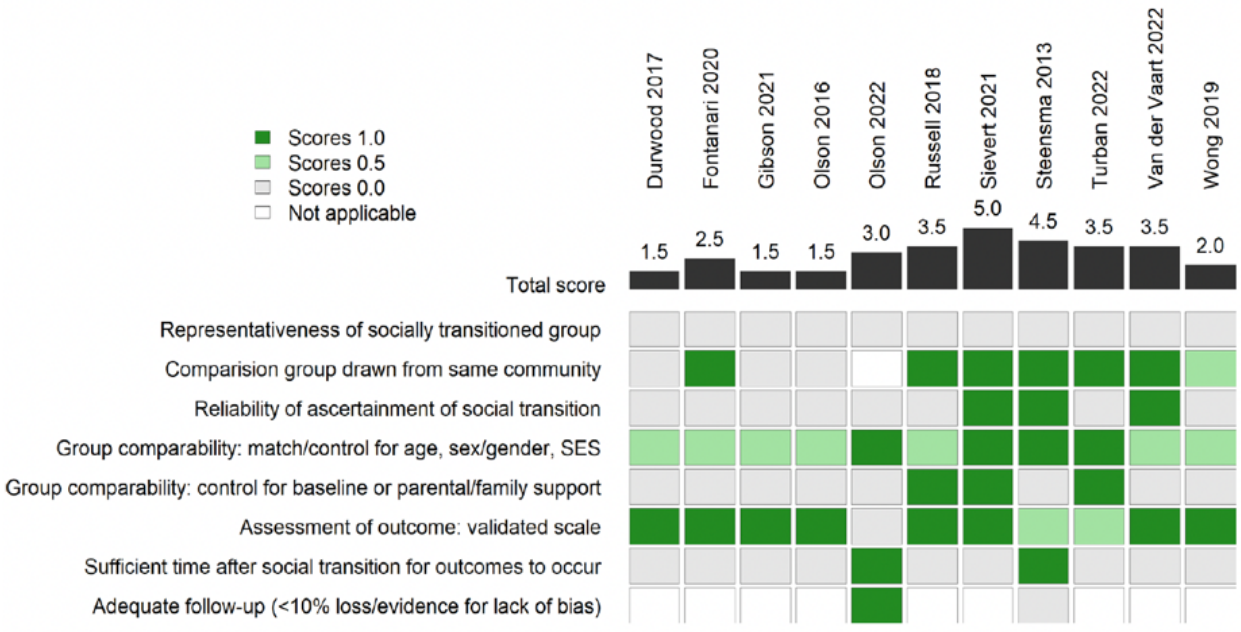
167. Although social transition typically precedes medical transition and does not involve the participation of medical service-providers, much less research has been conducted on the effects of social transition. Before 2023, all research on the social transition of minors was highly limited, coming from subjective self-report and personal anecdote instead of objective measurement, and from convenience samples instead of samples representative of the wider population. Further limiting the reliability of their results, these self-reports were highly retrospective: coming from adults recalling their childhood emotions (e.g., Turban 2021) rather than anyone reporting on contemporaneous experiences. Studies came to highly contradictory conclusions, some reporting correlations between social transition and greater mental health or well-being (e.g., Kuvalanka 2017; Olson 2016), and others reporting their lack (e.g., Sievert 2021; Wong 2019).

168. The systematic review commissioned for the Cass Review of England regarding impacts of social transition spanned studies up through April 27, 2022, and it confirmed the dearth of reliable evidence. (Hall 2024.) After conducting an exhaustive search of the research literature for studies of the effects of social transition, the review found that "there are no prospective longitudinal studies with appropriate comparator groups which have assessed the impact of social transition on the mental health or gender- related outcomes for children or adolescents." (Hall 2024 at 6.) The studies of social transition that did exist, 11 in total, were either cross-sectional (nine

of the 11) or lacked any control group to compare to the youth undergoing social transition (two of the 11). That is, each of the studies used research designs providing only low levels of evidence. (See Section VIII.E on *Lack of Control Groups* an Section VIII.F on *Non-Representative Surveys*.) The 11 studies (eight of children and three of adolescents) were then assessed individually on each of the eight criteria of the *Newcastle-Ottawa Scale* (NOS). The NOS was adapted to the aspects relevant to the social transition studies and to use ratings of 1.0, 0.5, or 0 (representing adequate, partially adequate, or inadequate) for each criterion. Their sum yielded the total quality or *Risk of Bias* score for each study, which represented:

Total score	**Quality Rating**
0.0–3.5	low
4.0–5.5	moderate
6.0–8.0	high

The scores of all 11 studies on each of the eight assessment criteria and the total quality scores appear in the figure below:



(Hall 2024 at 3.)

In addition to using research designs that provide only low levels of evidence, nine of the 11 social transition studies were of low quality even within that (low) level of evidence. The two exceptions, assessed has having moderate quality in this level of evidence, were Sievert (2021), which found no mental health improvement, and Steensma (2013), which found that gender dysphoria was more likely to persist after social transition (See Section XII on *Social Transition and Increased Persistence*.)

169. The body of evidence contained in these 11 studies showed no mental health improvements with social transition. As summarized in the systematic review itself:

> Overall studies consistently reported no difference in mental health outcomes for children who socially transitioned across all comparators. Studies found mixed evidence for adolescents who socially transitioned. (Hall 2024 at 1.)

In light of these ratings, the review concluded:

> The studies included in this review are of low quality, therefore, it is difficult to assess the impact of social transition in this population. Importantly, there are no prospective longitudinal studies with appropriate comparator groups which have assessed the impact of social transition on the mental health or gender-related outcomes for children or adolescents experiencing gender dysphoria/ incongruence. Healthcare professionals, clinical guidelines and advocacy organisations should acknowledge the lack of robust evidence of the benefits or harms of social transition when working with children, adolescents and their families. (Hall 2024 at 6)

170. It went on to criticize WPATH SoC8's recommendation in favor of early social transition as "not supported from the findings of this systematic review." (Hall 2024 at 6.)

171. The 2025 DHHS review similarly concluded:

> [T]he impact of social transition on long-term GD, psychological outcomes and well-being, and future treatment decisions such as hormones or surgeries remains poorly understood. Evidence on regret associated with social transition is extremely limited. The certainty of evidence for these outcomes is very low. (DHHS 2025 at 84.)

B. Subsequent studies of social transition continue to confirm a lack of benefits to mental health.

172. The conclusions of the 2024 Cass Report from its systematic review of social transition confirm the conclusions I had previously offered in testimony and the expert reports I have previously submitted on this topic. The systematic review completed its final scan for relevant studies on April 27, 2022 (Hall 2024). I therefore searched for any additional studies in the peer-reviewed literature reported since that time. I was able to identify four such studies, and their results repeat and confirm the conclusions reached by the Cass Report and by my own reading of this literature, as shown in the following.

173. In 2023, the first study of the mental health impact of social transition based on objective and contemporaneous assessments conducted by professionals was published in the peer-reviewed literature: Morandini (2023) is a study by a team of co-authors including one from the gender dysphoria clinic at Vrije University, Amsterdam (a widely recognized source of the most-cited literature in *support* of medical transition of minors). The study examined "whether children and adolescents diagnosed with gender dysphoria who socially transitioned showed fewer psychological difficulties than those (also with gender dysphoria) who were still living in their birth-assigned gender." (Morandini 2023 at 1052.)

174. The study improved on prior studies in multiple aspects, including its use of objective and comprehensive mental health assessments, conducted by professional clinicians instead of only subjective self-reports; having a larger sample for analysis; and conducting separate analyses for: (1) the prepubescent versus adolescent age youth, (2) the male-to-female versus female-to-male transitioners, and (3) living status (biological sex or adopted gender) versus the names used (birth name versus new

name). Ultimately, the analyses identified no significant differences in any mental health indicator (mood disorders, anxiety disorders, or suicide attempts).[3]

175. The study concluded that for children and adolescents expressing gender dysphoria:

> [T]here were no significant effects of social transition or name change on mental health status. (Morandini 2023 at 1045.)
>
> Living in role and birth-assigned gender were not associated with mood, anxiety, or suicide attempts. (*Id.* at 1052.)
>
> The present findings, although preliminary, suggest that social gender transition is not associated with mental health status in children and adolescents, at least in the short term. These findings are consistent with the only other study that directly compared clinic-referred youth experiencing gender dysphoria who had socially transitioned with those who had not. (*Id.* at 1058.)

176. In reporting their results, the researchers also warned against over-interpreting or over-simplifying their findings. Although their study represents an improvement on prior studies analyzing social transition, I agree with their reminder that cross-sectional evidence such as theirs can be superseded in the future by studies using still superior methods, such as randomized controlled trials (RCTs). (See Section VII.B. on *RCTs*.)

177. Durwood (2023) described a sample of prepubescent youth (under age 12, mean age of 6.8 years) who had socially transitioned (76.5% from male-to-female). According to the study, the parents reported that, on average, the youth showed fewer symptoms of depression and anxiety, "suggesting a possible mental-health benefit of these transitions" (at 1); however, the study did not indicate whether psychotherapy was also being provided at the same time, which might have been responsible for such mental-health benefits (i.e., represented a confound). Conversely, Engel (2023) and

[3] The study noted a single potential exception among the 12 analyses conducted, suggesting the possibility that, among the male-to-female transitioners, when social transition was defined as living status, the frequency of mood disorders might have been lower. Subsequent analysis, however, suggested that to be a statistically spurious finding, "as more sensitive analyses that treated age as a continuous rather than as a categorical variable, failed to support that finding." (Morandini et al. 2023 at 1053.)

Diaz and Bailey (2023) found quality of life and mental health *worsened* after social transition. According to Engel (2023):

> An unexpected observation in our study was that those who had fully socially transitioned reported *lower* QOL [quality of life] scores. (Engel 2023 at 1, italics added.)

Diaz and Bailey (2023) found:

> According to the parents, AYA [adolescents and young adults] children's mental health *deteriorated considerably* after social transition. (Diaz & Bailey 2023 at 1, italics added.)

XIV. Systematic reviews of medical transition consistently show the research to be low quality and unassociated with benefits to mental health.

178. The goal of medical transition is to improve mental health. Whether medical transition benefits mental health has not been shown, or even examined, by RCT or other study of adequate research quality. All existing outcomes studies used lower level research designs, and their results are subject to the attendant biases and ambiguous interpretations of low-level studies.

179. There have been 18 studies of the mental health outcomes at the cohort-level of evidence. As these currently represent the highest level of evidence available, it is these which have been the subject to systematic review. That is, with the availability of multiple cohort studies, the lower quality and less reliable results from surveys and other cross-sectional research are moot.

180. All systematic reviews have come to the same conclusions, confirming and re-confirming my own assessments of these studies, to which I have provided expert testimony in cases preceding those reviews.

181. Of the cohort studies, approximately half report there being no meaningful improvement in mental health after medical transition. The other half report observing greater mental health after transition, but because the transitioners underwent both psychotherapy and medical transition (i.e., the treatments were *confounded;* See Section VIII.C), it cannot be known which, or what combination, produce the

improvement. Very many of these studies also exhibited very high attrition rates and multiple other issues, any one of which prevents any reliable conclusion from being drawn. (See Section VIII.D). The only consistent conclusion of these studies is their identification of the need next to conduct RCT-level studies, which has not yet been done.

182. The Cass Review for England's National Health Service included systematic reviews of the outcomes for minors both of puberty-blockers (Taylor 2024a) and of cross-sex hormones (Taylor 2024b). The systematic review of puberty-blockers (i.e., Taylor 2024a) included not only the studies of mental health and psychosocial outcomes, but also the studies of medical and physiological outcomes. A total of 50 studies were identified (29 of which were published between 2020 and 2022). Because different studies examined different sets of variables (e.g., some examined bone density while others did not, some examined cognitive development while others did not), different analyses in the systematic review included different numbers of studies. The assessment found most studies to be of low quality (i.e., unlikely to identify accurate estimates of safety or effectiveness), suffering from methodological issues. Such deficiencies included the failure to control for pre-existing differences between groups (See Section VIII.C. on *Confounding*), lacking any control group (See Section VIII.E.), and examining only non-representative samples. (See Section VIII.F.) Regarding mental health, the review re-confirmed that the existing studies show little evidence of mental health improvement:

> These findings add to other systematic reviews in concluding there is insufficient and/or inconsistent evidence about the effects of puberty suppression on gender dysphoria, body satisfaction, psychological and psychosocial health, cognitive development, cardiometabolic risk and fertility. Regarding psychological health, one recent systematic review reported some evidence of benefit while others have not. The results in this review found no consistent evidence of benefit. (Taylor 2024a at 12.)
>
> There are no high-quality studies using an appropriate study design that assess outcomes of puberty suppression in adolescents experiencing gender dysphoria/incongruence. No conclusions can be drawn about the effect on gender-related outcomes, psychological and psychosocial health,

> cognitive development or fertility. Bone health and height may be compromised during treatment. High-quality research and agreement on the core outcomes of puberty suppression are needed. (*Id.* at 13.)

183. England's systematic review of cross-sex hormone treatment (Taylor 2024b) came to similar conclusions. At total of 53 studies were identified, the majority of which pertain to whether the hormones successfully triggered puberty and corresponding physical development. The majority of studies of mental health and psychosocial outcomes were of low quality, suffering problems including the failure to control for other treatments being administered at the same time (i.e., confounding) and of non-representativeness. Overall, the review found:

> There is a lack of high-quality research assessing the outcomes of hormone interventions in adolescents experiencing gender dysphoria/incongruence, and few studies that undertake long-term follow-up. No conclusions can be drawn about the effect on gender-related outcomes, body satisfaction, psychosocial health, cognitive development or fertility. Uncertainty remains about the outcomes for height/growth, cardiometabolic and bone health. (Taylor 2024b at 7.)

There was some evidence of some improvement in mental health, but because studies provided psychotherapy together with hormone treatments, it cannot be known which, or both, might have contributed.

184. Sweden's systematic review spanned research on both the potential harms and benefits of medical transition and was published as a peer-reviewed article: Ludvigsson (2023). It included only those studies at moderate or low risk of bias. The review analyzed the studies' results for evidence of benefit to mental health; however, the review instead found that the studies "were limited by methodological weaknesses, for instance lack of or inappropriate control group, lack of intra-individual analyses, [and] high attrition rates that precluded conclusions to be drawn." (Ludvigsson 2023 at 9–10.) Their overall conclusion was that:

> This systematic review of almost 10 000 screened abstracts suggests that long-term effects of hormone therapy on psychosocial and somatic health are unknown, except that GnRHa treatment [blocking puberty] seems to delay bone maturation and gain in bone mineral density." (*Id.* at 12.)

185. Finland, seeking to balance the risk-to-benefit ratio of the alternatives after completing its systematic reviews (Finland PALKO/COHERE 2020) found the evidence of potential benefit to be inadequate relative to the evidence of harms. Their health service concluded: "As far as minors are concerned, there are no medical treatments that can be considered evidence-based." (*Id.* at 7.)

186. Thompson (2023) conducted a systematic review, independent of any professional association or government healthcare service, and found the information available from the current evidence to be insufficient for supporting clinical decisions. The review, published in the peer-reviewed journal, *PLoS Global Public Health*, spanning the physical and mental health outcomes of puberty-blocking medications, of cross-sex hormone administration, and of surgery (primarily, double mastectomy) in adolescents, ages 12 to 18. The review identified 19 relevant research reports from six countries. Of the 19 studies, five reported on the mental health outcomes, and the remainder, on physical health outcomes. The physical parameters assessed included bone density, liver enzymes, hemoglobin, glucose metabolism, lipid profile, and blood pressure. Consistent with the other systematic reviews, Thompson (2023) confirmed the available evidence to be inadequate, especially with regard to safety and to any aspect of adolescent-onset gender dysphoria:

> The evidence base for the outcomes of gender dysphoria treatment in adolescents is lacking. It is impossible from the included data to draw definitive conclusions regarding the safety of treatment. There remain areas of concern, particularly changes to bone density caused by puberty suppression, which may not be fully resolved with hormone treatment. (*Id.* at 2.)
>
> Whilst it is acknowledged that any intervention during puberty has to consider the potential negative impact on young people's development, there is a surprising lack of evidence of outcomes. Research has raised safety concerns around cardiovascular health, insulin resistance, and changes to lipid profile. (*Id.* at 2.)
>
> It is clear that we simply do not know enough about the observed phenomenon referred to as [adolescent-onset gender dysphoria, or] AOGD, nor do we fully understand the huge increase in numbers of adolescents (and especially NF) presenting for GD intervention in recent years, nor the comorbidities and long-term outcomes. (*Id.* at 42.)

> This review series has highlighted a lack of quality evidence in relation to adolescent GD in general: epidemiology, comorbidity, and treatment impact is difficult to robustly assess. Without an improvement in the scientific field, clinicians, parents, and young people are left ill-equipped to make safe and appropriate decisions. (*Id.* at 43.)

187. More recently, a updated set of systematic reviews were published. Notably, these were conducted by a team at McMaster University in Canada, where the evidence-based medicine itself was developed, and participating in the project was Dr. Guyatt himself. The team has published independent systematic reviews on the outcomes both] of puberty blockers and cross-sex hormone administration. (Miroshnychenko 2025a; Miroshnychenko 2025b.) These systematic reviews confirm the prior conclusions, finding that the evidence base for interventions in both instances was too insufficient to "exclude the possibility of benefit or harm." (Miroshnychenko 2025a at 434; Miroshnychenko 2025b at 444.)

188. In contrast with the public healthcare systems of the countries noted above, none of the U.S.-based professional associations even attempted to conduct systematic reviews of evidence of the medical risks: The WPATH-sponsored review (Baker 2021) did not include safety either of puberty-blockers or of cross-sex hormones. Neither of the two Endocrine Society reviews (i.e., Maraka 2017; Singh-Ospina 2017) included puberty-blocker treatment (either its risks of harm or any potential benefits). In its systematic review of the safety of cross-sex hormone treatment, the Endocrine Society included exactly one study (and zero studies of mental health outcomes). The AAP policy statement (Rafferty 2018) did not include any systematic review of any aspect of transition, medical or social. Thus, because evaluating the risk-to-benefit ratio of a treatment requires the evidence of both its risks and its benefits (See Section IX on *Risks, Benefits, Alternatives, and Uncertainties*), none of the associations issuing clinical guidelines or policy statements was capable of conducting that assessment. Any claim that their recommendations represents evidence-based medicine is necessarily and demonstrably false.

189. The DHHS umbrella review of the systematic reviews on puberty blockers and cross-sex hormones contained in its wider evidence review (DHHS 2025) made the following observations:

> [T]he certainty of evidence is very low regarding the effect of PBs on GD (or gender incongruence), improvement in mental health, and safety. (*Id.* at 85.)
>
> Important gaps remain in both the range and quality of outcomes assessed across the existing literature [for PBs]. Many primary studies were not adequately designed for measuring or reporting on the outcomes related to PBs. For example, few primary studies included in the SRs assessed the impact of PBs on outcomes such as GD or mental health. (*Id.* at 85.)
>
> The certainty of evidence is very low regarding the effect on GD or incongruence, improvement in mental health, and safety metrics including fertility and bone health. (*Id.* at 86.)
>
> As with PBs, important evidence gaps exist for CSH. Many studies were not specifically designed to capture the full range of long-term outcomes and have primarily concentrated on short-term psychological or physiological changes. Key outcomes such as effects on GD, other mental health outcomes, and quality of life have been inconsistently measured and, when reported, often are derived from small, observational studies with limited follow-up. Critically important long-term outcomes remain poorly understood. (*Id.* at 86.)

XV. Medical transition is associated with substantial medical risks of harms.

190. The evidence has strongly shown that after social transition of gender, minors are highly likely to persist in gender dysphoria and as a result to desire and proceed to medical transition procedures. (See Section XII on *Social Transition and Increased Persistence.*) Thus, the appropriate assessment of the risk-to-benefit ratio for social transition must include the increased risks posed by the medicalized path to which it is likely to lead. Similarly, the evidence has shown strongly that youth who undergo puberty blocking are highly likely to undergo cross-sex hormone treatment. Thus, the appropriate risk-to-benefit evaluation must also consider its potential implications over the full lifespan.

A. In minors, harms of puberty-blockers (especially if followed by cross-sex hormones) include sterility, loss of bone mass, and abnormal brain development.

191. As expressed by the Cass Report, administering puberty blockers "could have a range of unintended and as yet unidentified consequences." (Cass 2024a at 178.)

192. Clinical guidelines for the medical transition of gender among children euphemistically include the need to counsel the children and their parents about "options for fertility preservation" (*Endocrine Society Guidelines,* Hembree 2017 at 3872.) For children receiving puberty-blockers from the start of puberty and proceeding to cross-sex hormones, however, there is no fertility to preserve. Fertility preservation for children prior to gamete maturation has been described as "nascent technology" that is largely "experimental." (Laidlaw et al. 2025 at 9.) The exposure of prepubescent tissue to cross-sex hormones sterilizes it—permanently, as best is currently known—and *most* children using puberty-blockers progress to using cross-sex hormones. That is, the decision to undergo medical transition also represents the decision never to have biological children of one's own.

193. Multiple studies have investigated the desires of transgender individuals to become biological parents, which have subsequently undergone systematic review. (Stolk 2023.) Across a total of 76 individual studies, the review found the majority of adults undergoing medical transition desired to become parents in the future. The rates of actually utilizing fertility preservation procedures, however, were low, leaves large room for future regret and harm.

194. WPATH guidelines include no means of preventing the sterilization that results from blocking puberty at its onset until initiating cross-sex hormones. It instead recommends that such individuals receive counseling about their loss of biological parenting capacity, but without any indication of how effective such counseling can be with, for example, a 10-year-old or prepubescent child making the irreversible

decision never to become a biological parent. No evidence or methodology exists for validating whether any consent or assent obtained from such a child could be meaningfully informed.

195. Similarly, while the removal of the breasts of an adolescent girl or young woman may be cosmetically revised, it is functionally irreversible. Even if the woman later regrets and detransitions before or during adulthood, breast-feeding her child will never be possible. To the adolescent determined to transition, this may seem no cost at all. To the future adult mother, it may be a very severe harm indeed.

196. There has not been systematic investigation of the effects on adult sexuality among people medically transitioned at an early stage of puberty. Notably, Dr. Marci Bowers, a recent president of WPATH and surgeon with substantial experience conducting penis-to-vagina operations, opined:

> If you've never had an orgasm pre-surgery, and then your puberty's blocked, it's very difficult to achieve that afterwards.… I consider that a big problem, actually. It's kind of an overlooked problem that in our 'informed consent' of children undergoing puberty blockers, we've in some respects overlooked that a little bit." (Shrier 2021.)

In my opinion as a psychologist and sex and couples therapist, this represents a large potential harm to future relationships and mental health to "overlook," and it must be taken into consideration in any serious risk-to-benefit analysis of "safety."

197. Multiple voices have expressed concern that blocking the process of puberty during its natural time could have a negative and potentially permanent impact on brain development (Chen 2020; Hembree 2017 at 3874; Cass 2024a at 178; DHHS at 70.) As Chen (2020) observed:

> [I]t is possible these effects are temporary, with youth "catching up".… However, pubertal suppression may prevent key aspects of development during a sensitive period of brain organization. Neurodevelopmental impacts might emerge over time, akin to the 'late effects' cognitive findings associated with certain [other] oncology treatments. (Chen 2020 at 249.)

Chen (2020) noted that no substantial studies have been conducted to identify such impacts outside "two small studies" (at 248) with conflicting results. I have not identified any systematic review of neurodevelopment or cognitive capacity.

198. Such a systematic review was attempted by University College London Professor Sallie Baxendale, about whether puberty-blockers' supposed reversibility includes brain development: Unlike the visible features of growth of the body, brain development in mammals is characterized by critical periods and windows of plasticity. The sequential, time-limited sensitivities to imprinting among these features during pubertal development predict the outcomes of altering the timing among them would not be reversible analogous to catch-up growth of the body. After finding that there existed insufficient studies of puberty-blockers on the neurodevelopment among gender dysphoric youth, she reviewed the analogous research on laboratory animals (11 studies) and the few neuropsychological studies of puberty-blockers on children with precocious puberty (five studies). (Baxendale 2023.) In the animal research:

> The results from these studies indicate that treatment with a GnRH antagonist/agonist has a detrimental impact on learning and the development of social behaviours and responses to stress in mammals…. There is no evidence in the animal literature that these effects are reversible following discontinuation of treatment. (Baxendale 2023 at 1159–1160.)

Studies of human children with central precocious puberty showed lower scores on IQ testing, with an effect sizes of d = –0.5 (or "moderate") or more in some single case studies; however, the small samples and large proportions of people dropping out of the studies prevent firm conclusions.

199. A related concern is that by slowing or preventing stages of neural development, puberty blockers may impair precisely the maturing of cognitive capabilities that would be necessary to evaluation of, and meaningful informed consent to, the type of life-changing impacts that accompany cross-sex hormones.

200. Studies of effects on bone health were included in the systematic reviews by Sweden, Finland, and England. *The New York Times* also recently commissioned its own independent review of the available studies. (Twohey & Jewett 2022.) These reviews all identified subsets of the same group of eight studies of bone health. (Carmichael 2021; Joseph 2019; Klink 2015; Navabi 2021; Schagen 2020; Stoffers 2019; van der Loos 2021; Vlot 2017.) These studies repeatedly arrived at the same conclusion. As described by *The New York Times* review:

> [I]t's increasingly clear that the drugs are associated with deficits in bone development. During the teen years, bone density typically surges by about 8 to 12 percent a year. The analysis commissioned by *The Times* examined seven studies from the Netherlands, Canada and England involving about 500 transgender teens from 1998 through 2021. Researchers observed that while on blockers, the teens did not gain any bone density, on average—and lost significant ground compared to their peers.[4] (Twohey & Jewett 2022.)

201. There is some evidence that some of these losses of bone health are regained in some of these youth when cross-sex hormones are later administered. The rebounding appears to be limited to female-to-male cases, while bone development remains deficient among male-to-female cases.

202. The long-term effects of the deficient bone growth of people who undergo hormonal interventions at puberty remain unstudied. The trajectory of bone quality over the human lifetime includes decreases during aging in later adulthood. Because these individuals may enter their senior years with already deficient bone health, greater risks of fracture and other issues are expectable in the long term. As the *New York Times'* analysts summarized, "That could lead to heightened risk of debilitating fractures earlier than would be expected from normal aging—in their 50s instead of 60s." Such harms, should they occur, would not be manifest during the youth and younger adulthood of these individuals. This distinction also represents one of the

[4] The eighth study was Lee 2020, which reported the same deficient bone development.

differences between adult transitioners and childhood transitioners and why their experiences cannot be extrapolated between them.

203. There does not exist an evidence-based method demonstrated to prevent these outcomes. The recommendations offered by groups endorsing puberty blockers are quite limited. As summarized by *The Times:*

> A full accounting of blockers' risk to bones is not possible. While the Endocrine Society recommends baseline bone scans and then repeat scans every one to two years for trans youths, WPATH and the American Academy of Pediatrics provide little guidance about whether to do so. Some doctors require regular scans and recommend calcium and exercise to help to protect bones; others do not. Because most treatment is provided outside of research studies, there's little public documentation of outcomes. (Twohey & Jewett 2022.)

B. In adulthood, long-term hormone use is linked to poor health indicators and greater frequencies of multiple diseases, and significant proportions of genital surgeries have surgical complications and urinary defects.

204. Minors undergoing social transition of gender are very likely to proceed to medical transition, and the maintenance of the medicalized status continues for life. Thus, the implications for one's health in adulthood are relevant to decisions about embarking on a trajectory of transition, now being made in childhood.

205. Because cross-sex hormones have been used with transgender adults for many years, much more evidence available about their effects in adults than in minors (reviewed below). Because adults who undergo medical transition have already completed puberty, there is little equivalent evidence for the use of puberty-blocking medication in adults, however. Although this class of drugs (gonadotropin releasing hormone agonists) is used in adults to treat hormone-dependent cancers or for sex-drive reduction in sex offenders (i.e., "chemical castration"), the medication's actions are distinct from when used in those situations.

206. Because of the role of sex hormones in cardiovascular disease and differences between males and females in such diseases, researchers from the Dutch Centre of Expertise on Gender Dysphoria conducted systematic review, *Cardiovascular*

disease in transgender people (van Zijverden 2024). This peer-reviewed study included not only a comprehensive review of all other studies of the topic, but also a *meta-analysis* (an advanced type of systematic review that calculates a numeric average across the studies reviewed) of rates of stroke, myocardial infarction, and pulmonary embolism, as well as death by any of these. The ten studies spanned a total of 14,781 male-to-female cases and 11,304 female-to-male cases. The cases of rates of death by any of these cardiovascular diseases 50% higher among males who transitioned to female (relative to control males who were not transitioning), and 120% higher among cases of females who transitioned to male (relative to control females who did not transition). More specifically:

- Of the six studies of stroke among cases of males who transitioned to female, 5 found a higher incidence relative to control males, *30% greater overall;*
- Of the five studies of venous thromboembolism among cases of males who transitioned to female, all five found a higher incidence relative to control males, *120% greater overall;*
- Of the six studies of stroke among cases of females who transitioned to male, four found a higher incidence relative to control females, *30% greater overall;*
- Of the five studies of myocardial infarction among cases of females who transitioned to male, three found a higher incidence relative to control females, *70% higher overall;*
- Of the five studies of venous thromboembolism among cases of females who transitioned to male, three found a higher incidence relative to control females, *40% higher overall.*

207. The study's authors pointed out that (1) like other systematic reviews about this population, studies were at high risk of bias, especially of bias from confounding factors, (2) that the research does not permit conclusions about the extent to which these outcomes are caused by hormone treatment, surgical interventions, or lifestyle issues, and (3) to the extent that hormone treatment is causing these conditions, the available evidence likely underestimates of the genuine levels of risk it poses.

208. There have been three systematic reviews of the research on the long-term effects of cross-sex hormone treatment on bone health. (Delgado-Ruiz 2019; Fighera 2019; Singh-Ospina 2017.) Overall, they reported the evidence to be of low quality,

due to their observational (non-experimental) design, small samples, and other research issues. They reported somewhat mixed results, with some studies showing no differences, and other studies associating treatment with estrogen to reduce bone mineral density and signs of osteoporosis in male-to-female transitioners, but not with testosterone in female-to-male transitioners.

209. The Endocrine Society, in preparation for the update of its clinical practice guidelines for gender dysphoric adults, sponsored a systematic review which identified 29 studies of the effects of cross-sex hormone treatment on cardiovascular health. (Maraka 2017.) By the two-year follow-up mark, the testosterone administration to female-to-male transitioners was associated with increased serum triglycerides (indicating poorer health), increased low-density-lipid cholesterol (LDL; indicating poorer health), and decreased high-density-lipid cholesterol (HDL; indicating poorer health). Among male-to-female transitioners, the administration of estrogen was associated with increased serum triglycerides (indicating poorer health).

210. Regarding surgical transition, Nassiri (2021) conducted a systematic review of surgical complications following genital surgery. A total of 32 studies were identified, 23 reporting on complications of male-to-female surgeries, 10 on female-to-male, and one on both. Most studies consisted of compiling existing medical charts within surgical clinics (retrospective cohort studies). Combined, the studies examined a total of 3,463 patients' outcomes. High rates of surgical complications were found in both male-to-female but especially in female-to-male surgeries. Whereas urinary tract infections were often treatable with antibiotics, treating narrowness of the urethra or urethral opening often require more aggressive treatment. Widening of the urethra could sometimes be accomplished by dilating and stretching it by inserting progressively larger instruments, and sometimes required surgical revision with tissue grafts. Widening or modifying the opening of the urethra more frequently required surgical intervention.

Urethral complications with vaginoplasty or phalloplasty. (Nassiri 2020.)

Range of urethral complications reported amongst studies of male-to-female and female-to-male gender-affirming surgery. (From Nassiri 2020 at 797, Table 3.)

	Male-to-Female	Female-to-Male
Urethral stricture (abnormal narrowing of the urethra)	15–23%	2.0–56%
Meatal stenosis (constriction of the urethral opening)	4.0–40%	4.7–20%
Fistulae (opening of urethra to skin, bladder, other tissue)	1.7–4.0%	5.0–60.3%
Incontinence (inability to hold urine)	4.0–19.3%	50–59%
Retention (inability to urinate)	5.4–12.8%	12–20%
Voiding dysfunction (splayed stream of urine; weak or dribbling stream)	5.6–33%	10–72.7%
Urinary tract infection	0.0–32%	3.4–45.8%

211. Given the high rates of complications reported across clinics performing these procedures, the review emphasized the need for prospective patients and physicians to manage expectations appropriately:

> The high rates of urethral complication must be well understood by patients and practitioners alike. It is imperative that patients recognize that it is likely they will develop at least one complication, and may need one or more revision surgeries. (Nassiri (2021) at 798.)

XVI. *Suicide* and *suicidality* are distinct phenomena representing distinct mental health issues, and neither is shown in reliable evidence to be reduced.

212. *Suicide* refers to completed suicides and the sincere intent to die. It is substantially associated with impulsivity, using more lethal means, and being a biological male. (Freeman 2017.) *Suicidality* refers to *para*-suicidal behaviours, including suicidal ideation, threats, and gestures.

A. Suicidality is substantially more common among females, but suicide, among males. Sexual orientation is strongly associated with suicidality, but much less so with suicide.

213. Notwithstanding public misconceptions about the frequency of suicide and related behaviours, the highest rates of death by suicide are among middle-aged and elderly men in high income countries. (Turecki & Brent 2016 at 3.) Males are at three times greater risk of death by suicide than are females, whereas suicidal ideation, plans, and attempts are three times more common among females. (Klonsky 2016; Turecki & Brent 2016.) In contrast with completed suicides, the frequency of suicidal ideation, plans, and attempts is highest during adolescence and young adulthood, with reported ideation rates spanning 12.1–33%. (Borges 2010; Nock 2008.) Relative to other countries, Americans report elevated rates of each of suicidal ideation (15.6%), plans (5.4%), and attempts (5.0%). (Klonsky 2016.) Suicide attempts occur up to 30 times more frequently than completed suicides. (Bachmann 2018.) The rate of completed suicides in the U.S. population is 14.5 per 100,000 people. (WHO 2022.)

214. There is substantial research associating sexual orientation with suicidality, but much less so with completed suicide. (Haas 2014.) More specifically, there is some evidence suggesting gay adult men are more likely to die by suicide than are heterosexual men, but there is less evidence of an analogous pattern among lesbian women. Regarding suicidality, surveys of self-identified LGB Americans repeatedly report rates of suicidal ideation and suicide attempts to be 2–7 times higher than their heterosexual counterparts. Because of this association of suicidality with sexual orientation, one must apply caution in interpreting findings allegedly about gender identity: Because of the overlap between people who self-identify as non-heterosexual and people who self-identify as transgender or gender diverse, correlations detected between suicidality and gender dysphoria may instead reflect (that is, be confounded by) sexual orientation. Indeed, other authors have made explicit their surprise that so many studies, purportedly of gender identity, entirely omitted measurement or

consideration of sexual orientation, creating the situation where features that are claimed to be associated with gender identity instead reflect the sexual orientation of the members of the sample. (McNeil 2017.)

B. Systematic reviews consistently find transition not to be associated with reductions of suicide or suicidality in minors or adults.

215. It is repeatedly asserted that, despite the known risks and despite the lack of research into the reality or severity of unquantified risks, it is essential and "the only ethical response" to provide medical transition to minors because medical transition is a "lifesaving intervention" known to reduce the likelihood of suicide among minors who suffer from gender dysphoria. This is simply untrue. *Zero* studies have documented medical transition to cause reduction of suicide rates in minors (or any other population). No methodologically sound studies have provided evidence that medical transition causes any reduction in suicide or suicidality in minors. Instead, multiple studies show tragically high rates of suicide even after medical transition, with that rate spiking several years *after* medical transition, as shown in this section.

216. Among adults who medically transition, completed suicide rates remain elevated. (Wiepjes 2020.) Systematic review of 17 studies of suicidality in transsexual adults confirmed suicide rates remain elevated even after complete transition. (McNeil 2017.) Even in Sweden's highly tolerant culture, death by suicide is 19 times higher among post-operative transsexual adults than among population-matched controls. (Dhejne 2011.) Among post-operative patients in the Netherlands, long-term suicide rates 6–8 times that of the general population were observed depending on age group. (Asscheman 2011 at 638.) Also studying patients in the Netherlands, Wiepjes (2020) reported what it called the "important finding [that] suicide occurs similarly" both before and after medical transition. (Wiepjes 2020 at 490.) In other words, *transition did not reduce suicide*. A very large dataset from the U.K. GIDS clinic showed that those referred to the GIDS clinic for evaluation and treatment for

gender dysphoria committed suicide at a rate five times that of the general population, both before *and after* commencement of medical transition (Biggs 2022). Reviewing the available evidence, the recent DHHS review found that "transgender individuals appear to have higher mortality risk when compared to members of the general population of similar age and sex." (DHHS 2025 at 124.) Finally, in a still-ongoing longitudinal study of U.S. patients, Chen have reported a shockingly high rate of completed suicide among adolescent subjects in the first two years *after* hormonal transition, although they provide no pre-treatment data for this population to compare against. (Chen 2023 at 245.)

217. The WPATH-commissioned systematic review of the effectiveness of puberty blockers and cross-sex hormones in minors concluded: "It was impossible to draw conclusions about the effects of [either] hormone therapy on death by suicide." (Baker 2021 at 12.) Similarly, the DHHS review found "there is no evidence that pediatric medical transition reduces the incidence of suicide, which remains, fortunately, very low." (DHHS 2025 at 16.) In short, I am aware of no respected voice that asserts that medical transition causes reduction in suicide among minors who suffer from gender dysphoria. ACLU counsel Chase Strangio agreed with me on this critical point during the oral argument in the Skrmetti case on December 3, 2024, acknowledging in response to a question from Justice Alito that "there is no evidence in ... the studies that [hormonal] treatment reduces completed suicide." *United States v. Skrmetti*, No. 23-477, Argument Trans. at 88 (Dec. 4, 2024), https://bit.ly/3S4ExXi.

218. As to the distinct and far more common phenomenon of suicidality, of course, that claim is widely made. Rather than support the common hypothesis that suicidal ideation and suicidal attempts rates would decrease upon transition however, the McNeil systematic review of studies of adults instead revealed a complicated set of interrelated factors: Rates of suicidal ideation did not show the same patterns as suicide attempts, male-to-female transitioners did not show the same patterns as

female-to-male transitioners, and social transition did not show the same patterns as medical transition. Importantly, the review included one study (Bauer 2015) that reported "a positive relationship between higher levels of social support from leaders (e.g., employers or teachers) and *increased* suicide attempt, which [Bauer] suggested may be due to attempts instigating increased support from those around the person, rather than causing it." (McNeil 2017 at 348.)

219. Christensen (2023) conducted the first systematic review of that research, which has now been published in the peer-reviewed journal, *Child Psychiatry & Human Development*, concluding there to be no evidence of sufficient quality to conclude that medical transition reduces rates of suicide or suicidality. Specifically, Christensen reviewed studies of preventing suicide in transgender youth ages 24 and under, including medical transition and other interventions (such as crisis intervention or online media). The review followed well-established and high-quality review procedures, including the PRISMA guidelines for data extraction, and applying a criterion-based assessment of the risk of bias posed by the included studies. In total, Christensen identified 17 studies, eight of which pertained specifically to medical transition. These eight yielded only inconsistent results, with some, but not other studies reporting statistically significant differences in rates of suicidality among medically transitioned youth. The review reported:

- Common flaws that created high risk of bias included self-reporting, lack of controls for comparability, small sample sizes, and lack of generalizability (Christensen (2023) at 7);
- Despite the pressing need for suicide prevention within this population, there has been a lack of high-quality evidence focusing on prevention of suicide amongst transgender youth (*id.* at 7–8);
- [N]o randomized controlled trials to date investigate the impact of interventions on rates of suicidal ideation and suicide attempt in transgender and gender diverse youth (*id.* at 9); and
- [T]he overall quality of evidence is low, and the risk of bias is high. There is an urgent need for high-quality studies of interventions to reduce risk of suicide amongst transgender youth... (*id.* at 9).

Christensen concluded: "It is yet largely unproven what the effect of such interventions may be on rates of suicidal ideation and attempt—let alone completion—amongst transgender and gender-diverse youth." (*Id.* at 9.)

220. Importantly, of the 17 studies included in this review, only two existed before 2019.[5] That is, both the Endocrine Society guidelines (published in 2017) and the AAP policy (published in 2018) lack the benefit of the relevant studies nearly entirely. The published systematic review conducted by WPATH (i.e., Baker 2021) cited zero of these 17 studies.

221. Moreover, Christensen et al. reiterated the fact that there have been no RCT studies, and called for high quality studies to be conducted (without any indication that it would be unethical to conduct such RCTs). (Christensen et al. 2023 at 9.)

222. Importantly, the 2020 Kuper cohort study of minors receiving hormone treatment found increases in each of suicidal ideation (from 25% to 38%), attempts (from 2% to 5%), and non-suicidal self-injury (10% to 17%). (Kuper 2020 at Table 5.) Research has found social support to be associated with increased suicide attempts, suggesting the reported suicidality may represent attempts to evoke more support. (Bauer 2015; Canetto 2021.)

223. Overall, the research evidence is only minimally consistent with the hypothesis that an absence or delay of transition causes mental health issues and suicide, but is very strongly consistent with the hypothesis that other mental health issues, such as Borderline Personality Disorder (BPD), cause both suicidality and unstable identity formation (including gender identity confusion). (See Sections IV.E on *Adolescent-Onset Gender Dysphoria* and XVI on *Suicide and Suicidality*.) BPD is

[5] Namely:
Lytle, M. C., Silenzio, V., Homan, C. M., Schneider, P., & Caine, E. D. (2018). Suicidal and help-seeking behaviors among youth in an online lesbian, gay, bisexual, transgender, queer, and questioning social network. *Journal of Homosexuality, 65,* 1916–1933.
Russell, S. T., Pollitt, A. M., Li, G., & Grossman, A. H. (2018). Chosen name use is linked to reduced depressive symptoms, suicidal ideation, and suicidal behavior among transgender youth. *Journal of Adolescent Health, 63,* 503–505.

repeatedly documented to be greatly elevated among sexuality minorities (Reuter 2016; Rodriguez-Seiljas 2021; Zanarini 2021), and both suicidality and identity confusion are symptoms of BPD. Diverting psychologically distressed youth towards transition necessarily diverts youth away from receiving the psychotherapies designed for treating the issues actually causing their distress.

224. Despite the fact that mental health issues, including suicidality, are repeatedly required by clinical standards of care to be resolved before transition, threats of suicide are instead oftentimes used as the very justification for labelling transition a "medical necessity." Contrary to the assertion that failing to affirm transition causes suicidality, the epidemiological evidence does not support that claim. The objective research evidence simply does not support claims that medical transition represents a "lifesaving" procedure.

PART 5: LACK OF EVIDENCE AND CONSENSUS

XVII. Both the *known-unknowns* and *unknown-unknowns* are acknowledged by clinical scientists, international healthcare authorities, and even transition advocates.

A. Governmental health care agencies conducting systematic reviews consistently conclude transitions in minors to be *experimental*.

225. The international institutions reviewing the research repeatedly concluded gender transition to be experimental: After conducting a systematic review of the evidence of safety and effectiveness, the council responsible for the assessment of public health care services in Finland (Finland COHERE 2020) concluded, "In light of available evidence, gender reassignment of minors *is an experimental practice*." (Finland PALKO/COHERE 2020 at 9, italics added.) Sweden's research on gender transition is conducted at the Karolinska Institutet in Stockholm. In 2015, that facility registered its research on medical transition with the U.S. National Institutes for Health (NIH), noting: "[H]ormonal treatment includes inhibition of one's own sex hormone

production followed by treatment with testosterone or estrogen levels that are normal for the opposite sex. *Seen as experimental model,* this is a process that provides an opportunity to study the sex hormone dependent influences." (Clinicaltrials.gov.) In its policy updates in 2021, Sweden limited medicalized treatments for gender dysphoria in minors to clinical research studies approved by the Swedish national research ethics board ("EPM"). (Nainggolan 2021.) In its 2023 policy review, Norway's National Commission of Inquiry for the Health and Care Services (Ukom) explicitly recommended that "gender-affirming treatment for children and adolescents be *defined as experimental treatment."* (Ukom Norway 2023 at 6.)

226. The widely cited Dutch studies were co-conducted by Dr. Thomas Steensma. Despite being an originator and international leader of medical transition of gender dysphoric minors, Dr. Steensma stated in an interview in 2021 that he still considers it to be experimental: "Little research has yet been done on the treatment with puberty inhibitors and hormones in young people. That is why it is also *seen as experimental*." (Tetelepta 2021.) Dr. Steensma decried other clinics for "blindly adopting our research" despite the indications that those results may not actually apply: "We don't know whether studies we have done in the past are still applicable to today. Many more children are registering, and also a different type." (*Id.*) Steensma opined that "every doctor or psychologist who is involved in transgender care should feel the obligation to do a good pre- and post-test." (*Id.*) Few, if any, are doing so, however.

B. There is no effective method of identifying the children for whom gender dysphoria will persist versus desist.

227. Although it has been shown that gender dysphoria will desist for the large majority of children in whom gender dysphoria manifests before puberty, research has not developed any reliable means of identifying those for whom it will persist. Groups of persisters are somewhat more gender non-conforming on average than desisters, but not so much more as to predict usefully the course of any particular child.

(Singh 2021; Steensma 2013.) Thus, Endocrine Society's guidelines statement remains true: "With current knowledge, we cannot predict the psychosexual outcome for any specific child." (Hembree 2017 at 3876.)

228. In contrast with the above evidence, the Olson research team has instead claimed the opposite, asserting that they developed a method of distinguishing persisters from desisters, using a score representing a combination of children's "peer preference, toy preference, clothing preference, gender similarity, and gender identity." (Rae 2019 at 671.) They reported a statistical association (mathematically equivalent to a correlation) between that composite score and the probability of persistence. As they indicated:

> Our model predicted that a child with a gender-nonconformity score of .50 would have roughly a .30 probability ... of socially transitioning. By contrast, a child with gender-nonconformity score of .75 would have roughly a .48 probability. (Rae 2019 at 673.)

229. Although the Olson team declared that "social transitions may be predictable from gender identification and preferences" (Rae 2019 at 669), their actual results suggest *the opposite:* The gender-nonconforming group who went on to transition (socially) had a mean composite score of .73 (i.e., less than .75), and the gender-nonconforming group who did *not* transition had a mean composite score of .61, also less than .75. (Rae 2019 supplemental material Table S1.) Because *both* of these scores are lower than .75, only *a minority of both* groups would transition. That is, despite their highly misleading language, Olson's statistical model does not distinguish *likely* from *unlikely* to transition; rather, it distinguishes *unlikely* from *even less likely* to transition.

C. Multiple other risks are suggested by preliminary research and remain unstudied, rather than ruled out.

230. The research cited by the WPATH Standards of Care (version 8) includes the evidence that children whose natural puberty started very late (top 2.3% in age) have elevated risks of multiple health issues in adulthood. (Zhu & Chan 2017.) These issues

include elevations in metabolic and cardiovascular disease, lower height, and decreased bone mineral density. It is also known that undergoing puberty much later than one's peers is associated with poorer psychosocial functioning and lesser educational achievement. (Koerselman & Pekkarinen 2018.) It has not been studied whether these correlations also occur in children whose puberty is chemically delayed.

231. Epidemiological research has shown adult women (without gender dysphoria) who undergo surgical removal of both ovaries for medical reasons have substantially elevated odds of developing Parkinson's Disease, relative to age-matched women randomly selected from the local population in an on-going epidemiological study. (Rocca 2022.) Importantly, the effect was greater among younger women (under age 43), for whom the odds were 7–8 times greater. The observed delay between removal of ovaries and the onset of Parkinson's was 26.5 years. It remains unknown whether chemically suppression of the ovaries of a biological female via puberty blockers during adolescence followed by cross-sex hormones will cause the same.

D. The many groups acknowledging untested hypotheses, continuing unknowns, and lack of research include WPATH.

232. The current WPATH Standards of Care (version 8; Coleman 2022) sidestepped the word "experimental," which would disqualify transition from health insurance coverage. Nonetheless, the document repeatedly included synonymous terms and phrases indicating the experimental status and lack of evidence for transition (italics added):

- "The criteria in this chapter [on assessment of adults] have been significantly revised from SOC-7 to reduce requirements and unnecessary barriers to care. *It is hoped that future research will explore the effectiveness* of this model." (Coleman 2022 at S33.)
- "It primarily includes an assessment approach that uses specific criteria that are examined by [a Health Care Provider, or] HCP in close cooperation with a TGD adult and does not include randomized controlled trials or long-term longitudinal research." (*Id.* at S33.)
- "While there was *limited supportive research,* this recommendation was considered to be good clinical practice as it allows a more reversible experience prior to the irreversible experience of surgery." (*Id.* at S40.)

- "Due to *the limited research in this area,* clinical guidance is based primarily on individual case studies and the expert opinion of HCPs." (*Id.* at S41.)
- "While available research shows consistent positive outcomes for the majority of TGD adults who choose to transition … some TGD adults may decompensate or experience a worsened condition following transition. *Little research has been conducted to systematically examine variables that correlate with poor or worsened biological, psychological, or social conditions following transition.*" (*Id.* at S42.)
- "Future research would shed more light on gender identity development if conducted over long periods of time with diverse cohort groups." (*Id.* at S45.)
- "In addition, elevated scrotal temperatures can be associated with poor sperm characteristics, and genital tucking could theoretically affect spermatogenesis and fertility (Marsh 2019) although *there are no definitive studies evaluating these adverse outcomes.* Further *research is needed to determine the specific benefits and risks* of tucking in youth." (*Id.* at S54.)
- *"There is no formal research evaluating* how menstrual suppression may impact gender incongruence and/or dysphoria." (*Id.* at S54–S55.)
- "Currently, there are only preliminary results from retrospective studies evaluating transgender adults and the decisions they made when they were young regarding the consequences of medical-affirming treatment on reproductive capacity. It is important not to make assumptions about what future adult goals an adolescent may have." (*Id.* at S57.)
- *"Only limited empirical research exists* to evaluate such interventions." (*Id.* at S75.)
- *"Research has not been conclusive* about when in the life span such detransition is most likely to occur, or what percentage of youth will eventually experience gender fluidity and/or a desire to detransition." (*Id.* at S77.)
- "Research on pitch-lowering surgeries is limited." (*Id.* at S139.)
- "The number and quality of research studies evaluating pitch-lowering surgeries are currently insufficient." (*Id.* at S141.)
- "To date, *research on the long-term impact of [Gender Affirming Hormone Treatment or] GAHT on cancer risk is limited.*… We have *insufficient evidence* to estimate the prevalence of cancer of the breast or reproductive organs among TGD populations (Joint et al., 2018)." (*Id.* at S144.)
- "Contraceptive *research gaps within this population are profound. No studies have examined* how the use of exogenous androgens (e.g., testosterone) may modify the efficacy or safety profile of hormonal contraceptive methods (e.g., combined estrogen and progestin hormonal contraceptives, progestin-only based contraceptives) or non-hormonal and barrier contraceptive methods." (*Id.* at S162.)
- "TGD individuals AFAB undergoing abortion still represents a critical gap in research." (*Id.* at S162.)
- "The effects of current TGD-related medical treatments on sexuality are heterogeneous (Ozer et al., 2022; T'Sjoen et al., 2020), and *there has been little research on the sexuality of TGD adolescents*." (*Id.* at S163.)
- "While sex-positive approaches to counseling and treatment for sexual difficulties experienced by TGD individuals have been proposed (Fielding, 2021;

> Jacobson et al., 2019; Richards, 2021), to date *there is insufficient research on the effectiveness of such interventions*." (*Id.* at S163.)

E. WHO excluded minors from clinical guidelines, due to lack of evidence.

233. In December 2023, the World Health Organization announced developing a guideline for the health services and legal recognition of self-determined gender identity. (WHO 2023). In January 2024, WHO then announced the guideline would no longer pertain to minors, because of the unknowns:

> Why will the guideline only cover adults and not also children or adolescents?
>
> The scope will cover adults only and not address the needs of children and adolescents, because on review, the evidence base for children and adolescents is limited and variable regarding the longer-term outcomes of gender affirming care for children and adolescents. (World Health Organization 2024.)

XVIII. There is no consensus regarding gender transition in minors beyond acknowledgment of its many unknowns and lack of reliable evidence.

234. Establishing public policy regarding gender dysphoria is complicated by the still limited science and lack of consensus in the medical and clinical communities. Health care providers and the national health care systems of several countries have noted not only the lack of professional consensus, but also the lack of free discussion of the issue.

235. Any seeming consensus is limited to U.S.-based organizations, increasingly isolated from the international consensus. Whereas public health care ministries in Europe shifted from affirmation-oriented to heavily restrictive policies, American professional associations instead have failed to employ the evidence-based practice methods they profess and failed to conduct the systematic reviews of research they otherwise use. Their leaders have instead reflected professional guild interests, limiting professional liability, maximizing profitability, and resisting governmental regulation.

236. When interviewed or surveyed in contexts without fear of reprisal, health care professionals and researchers report a 'cancellation culture' blocking meaningful

expressions of views or open debate. England's Cass Report included interviews with people representing the wide range of stakeholders in public policy. In the *British Medical Journal,* Dr. Cass noted:

> [M]any people are afraid to express an opinion; this is a dangerous situation for both doctors and patients. Indeed, in my 40 years of medical practice it proved to be the first time that it was not even possible to get individuals with the most polarised views into a room together.… A 2015 study[3] approached 17 multi-professional treatment teams worldwide to determine their views on the use of early intervention with puberty blockers. They identified seven themes on which there were widely disparate views, with two being fundamental to attitudes to treatment: "the (non-) availability of an explanatory model for gender dysphoria" and "the nature of gender dysphoria (normal variation, social construct or [mental] illness)." (Cass 2024a at 1-2.)

Footnote 3 of that passage referred to:

> Vrouenraets, L. J. J. J., Fredriks, A. M., Hannema, S. E., Cohen-Kettenis, P. T., & de Vries, M. C. (2015). Early medical treatment of children and adolescents with gender dysphoria: An empirical ethical study. *Journal of Adolescent Health, 57,* 367–373.

The head of the youth gender clinic in Finland, Dr. Kaltiala, expressed observing the same phenomenon as did Dr. Cass:

> I understood this silence. Anyone, including physicians, researchers, academics, and writers, who raised concerns about the growing power of gender activists, and about the effects of medically transitioning young people, were subjected to organized campaigns of vilification and threats to their careers. (Kaltiala 2023)

237. The peer-reviewed systematic review of social transition outcomes explicitly noted the lack of consensus with regard to that issue specifically:

> *Social transition among children is contentious with diverging views between clinicians* as to its role and potential benefits or harms. (Hall 2024 at 1, italics added.)
>
> *Social transition has become the subject of clinical and academic debate,* mainly centred on whether social transition is an active intervention with potential for benefits as well as risks or longer term consequences.… The concern then is that if children undergo an early social transition they may find it difficult to socially revert to their former gender.[2] By extension, some children may also then unnecessarily pursue medical and surgical[9] interventions, so raising concerns about iatrogenic harm. (Hall 2024 at 6, italics added.)

The footnotes of that passage referred to:

> Steensma, T. D., & Cohen-Kettenis P. T. (2011). Gender transitioning before puberty. *Archives of Sexual Behavior, 40,* 649–50.

Zucker, K. J. (2020). Debate: Different strokes for different folks. *Child and Adolescent Mental Health, 25,* 36–7.

The peer-reviewed systematic review of clinical practice guidelines indicated the lack of consensus among the guidelines:

> Published guidance recommends a care pathway for children and adolescents experiencing gender dysphoria/incongruence for which there is limited evidence about benefits and risks, and long-term effects. *Divergence of recommendations in recent guidelines suggest there is no current consensus about the purpose and process of assessment, or about when psychosocial care or hormonal interventions should be offered and on what basis.* (Taylor, Hall, Heathcote 2024b at 8, italics added.)

In summing up the conclusions of the multiple systematic reviews and other evidence gathered, the Cass Report emphasized the lack of consensus both regarding social transition and medical transition:

> *There remains diversity of opinion* as to how best to treat these children and young people. The evidence is weak and clinicians have told us they are unable to determine with any certainty which children and young people will go on to have an enduring trans identity. (Cass 2024a at 22, italics added)
>
> *There are different views on the benefit versus the harms of early social transition.* Some consider that it may improve mental health for children experiencing gender-related distress, while others consider that it makes it more likely that a child's gender dysphoria, which might have resolved at puberty, has an altered trajectory potentially, culminating in life-long medical intervention. (Cass 2024a at 31, italics added)

238. Upon the release of the Cass Report and its systematic reviews, England's National Health Service (NHS) accepted and supported the Report's conclusions.[6] One professional group in that country, the British Medical Association (BMA), instead opposed implementation of the Review's conclusions, which, in turn led to hundreds of physicians to resign in protest, including clinical leaders in the NHS and former presidents of medical royal college. (Hayward 2024.) The BMA has since withdrawn its opposition to the conclusions and recommendations of the Cass Report. (Barnes 2024)

[6] See also: https://www.england.nhs.uk/long-read/nhs-englands-response-to-the-final-report-of-the-independent-review-of-gender-identity-services-for-children-and-young-people/

239. The *United Kingdom Council for Psychotherapy* (UKCP) is the national registering body for psychotherapists in the UK, comprising 80 member organizations. It is the primary organization in that country for the education, training, accreditation, and regulation for psychotherapy and psychotherapeutic counselling. That body recently issued a statement explaining its guidance for psychotherapy with gender dysphoric minors:

> Psychotherapists and psychotherapeutic counsellors who hold [gender critical] views are likely to believe that the clinically most appropriate approach to working therapeutically with individuals who present with gender dysphoria, particularly children and young people, is exploratory therapy.... *The UKCP continues to recognise the fact that there are different professional beliefs on many differing topics within the psychotherapeutic community*. (United Kingdom Council for Psychotherapy 2023, italics added.)

240. The American Psychological Association appointed a task force to develop their *Guidelines for Psychological Practice with Transgender and Gender Nonconforming People,* but noted:

> When the Task Force discovered a *lack of professional consensus,* every effort was made to include divergent opinions in the field relevant to that issue" (American Psychological Association 2015 at 834, italics added.)

241. In revising its recommendations to reverse its policies and to restrict gender transition, Sweden's National Board of Health and Welfare explicated the factors that shifted its assessment of the risk-to-benefits ratio, which included, "*The experience-based knowledge of participating experts is less uniform than it was in 2015*." (National Board of Health and Welfare. (2022, Dec.).)

242. According to the Dutch research team, widely recognized as the international leaders on these issues:

> The Endocrine Society and the World Professional Association for Transgender Health published guidelines for the treatment of adolescents with gender dysphoria (GD). The guidelines recommend the use of gonadotropin-releasing hormone agonists in adolescence to suppress puberty. However, in actual practice, *no consensus exists* whether to use these early medical interventions... Strikingly, the *guidelines are debated both for being too liberal and for being too limiting*. (Vrouenraets 2015 at 367, italics added.).

243. The European Academy of Paediatrics published its statement on the clinical management of children and adolescents with gender dysphoria in 2024, noting:

> There is *an ongoing, increasingly polarised and vituperative debate* about how our current diverse society should treat transgender individuals (especially children) and how their rights should be respected. (Brierly 2024 at 2, italics added.)
>
> The optimal management of transgender children (both prepubertal and adolescent) remains *an area of active controversy* and increasingly politicised debate. (Brierly 2024 at 2, italics added.)
>
> [C]oncerns about the practical difficulties of doing so and doubts about long-term outcomes have led to *international reconsideration of this [gender affirming] approach.* (Brierly 2024 at 3, italics added.)

244. In developing their statement, the Royal Australian and New Zealand College of Psychiatrists concluded:

> Evidence and *professional opinion is divided* as to whether an affirmative approach should be taken in relation to treatment of transgender children or whether other approaches are more appropriate. (Royal Australian & New Zealand College of Psychiatrists 2021, italics added.)

245. With respect to their own area of expertise, the American Society of Plastic Surgeons issued the following statement in 2024:

> ASPS currently understands that there is considerable uncertainty as to the long-term efficacy for the use of chest and genital surgical interventions for the treatment of adolescents with gender dysphoria, and the existing evidence base is viewed as low quality/low certainty. (American Society of Plastic Surgeons 2024)

246. The recent 2025 DHHS review expressed the same observation:

> [S]ystematic reviews of the evidence have revealed deep uncertainty about the purported benefits of these interventions. The controversies surrounding the medical transition of minors *extend beyond scientific debate; they are deeply cultural and political.* Public discourse is dominated by intensely polarizing narratives. (DHHS (2025) at 10.)

247. The lack of consensus and that there exists enormous controversy and disagreement among experts is itself the topic of major media coverage. Recent examples include:

Bazelon, E. (2022, June 15). The battle over gender therapy. *The New York Times Magazine.* Available from https://www.nytimes.com/2022/06/15/magazine/ gender-therapy.html

Block, J. (2023). Gender dysphoria in young people is rising—and so is professional disagreement. [Feature BMJ Investigation] *British Medical Journal, 380,* 382. https://doi.org/10.1136/bmj.p382

Kaufman, E. (July 21, 2023) Is transgender care for children based on evidence?: Experts and readers debate the Endocrine Society's guidelines for 'gender-affirming care.' *Wall Street Journal*. Available from https://www.wsj.com/ articles/is-transgender-care-for-children-based-on-evidence-83315077?mod=WTRN_pos1&cx_testId=3&cx_testVariant=cx_171&cx_artPos=0

Klotz, F. (2023). A teen gender-care debate is spreading across Europe. *The Atlantic*. Available from https://www.theatlantic.com/health/archive/2023/04/gender-affirming-care-debate-europe-dutch-protocol/673890/?utm_source=twitter&utm_medium=social&utm_campaign=share

McDowell, M. (2023, March 8). Achieving a caring consensus on gender issues requires a broad national discussion. *The Irish Times*. Available from https:// www.irishtimes.com/opinion/2023/03/08/achieving-a-caring-consensus-on-gender-issues-requires-a-broad-national-discussion/

In short, regardless of anyone's view on these issues, there is no meaningful way to claim there exists a consensus in the relevant medical or professional communities.

PART 6: ASSESSMENT OF SPECIFIC REFERENCES

XIX. Dr. Budge's report does not employ any established standard for objectively selecting and assessing research studies in clinical science, instead engaging in the very cherry-picking and biased criteria that evidence-based practice was developed to prevent.

248. In the body of my report above, I summarized the nature and strength of the published scientific evidence regarding the central issues pertaining to the transition of gender in minors. The present section provides additional remarks directed to specific defects in the opinions offered in the declarations Dr. Stephanie Budge submitted in this case in 2023 and 2025, which I have also reviewed.

A. Dr. Budge relies on clinical experience, rather than evidence-based medicine.

249. Public discourse often accepts as common sense that clinical experience produces expertise; however, research on clinical experience and health care quality has long documented that supposition to be untrue. The association between experience and care quality was already established by systematic review of 62 studies published between 1966 and 2004:

> [E]vidence suggests that *there is an inverse relationship* between the number of years that a physician has been in practice and the quality of care that the physician provides.... Overall, 32 of the 62 (52%) *evaluations reported decreasing performance with increasing years* in practice for all outcomes assessed[.] (Choudhry 2005 at 260.)

In contemporary research, the majority of studies continue to show clinical care quality not to improve with clinical experience, as demonstrated by a systematic review of studies published between 2004 to 2020:

> Fifty-two studies reporting 63 evaluations of the association between physicians' clinical experience and healthcare quality were included in the final analysis.... We found no clear evidence of an association between measures of physicians' clinical experience and overall healthcare quality. (Ajmi 2021 at 1.)

The research shows the same to be true for psychotherapy experience and quality:

> Years of clinical experience were found to be positively associated with increased confidence and perceived mastery in clinical ability.... [But] evidence does not suggest that it is associated with improved ability to increase its quality. (Dawson 2018 at 89.)

250. Evidence cannot be considered reliable when derived only from clinicians' experiences or from committees re-stating experiences from its committee members. Referring to clinical experience with the legal terminology, *expert opinion,* does not change its content or veracity. As put by its Editor-in-Chief, Dr. Roger Bertholf, in the 50th anniversary edition of the peer-reviewed journal, *Laboratory Medicine*:

> Anecdotism is the antithesis of medical science.
>
> (Bertholf 2020 at 555.)

The advantages of accumulated personal experience is its low cost and potential utility when there do not exist systematic studies of the unique combination of variables presented by some cases. The disadvantages include that it is the most subject to human biases, such as recall bias and confirmation bias, as well as to sampling biases including both self-selection biases (who decides to come into the clinic in the first place) and any variables which led to dropping out of the clinic, leaving clinicians no capacity for knowing why.

251. Both my prior and present declarations included RCTs as the type of study capable of demonstrating whether a treatment caused any effects observed. In her

rebuttal, Dr. Budge claimed a study could not be conducted "randomizing transgender people to receive or not receive hormone therapy." (Budge 2023 Rebuttal Decl. ¶ 35.) Despite her belief, exactly such an RCT has indeed been conducted and published in the peer-reviewed literature:

> Nolan, B. J., Zwickl, S., Locke, P., Zajac, J. D., & Cheung, A. S. (2023). Early access to testosterone therapy in transgender and gender-diverse adults seeking masculinization: A randomized clinical trial. *JAMA Netw Open,* 6, e2331919.

252. Sweden's report reviewing the status of the research has now been published in the peer-reviewed literature:

> Ludvigsson, J. F., Adolfsson, J., Höistad, M., Rydelius, P.-A., Kriström, B., & Landén, M. (2023). A systematic review of hormone treatment for children with gender dysphoria and recommendations for research. *Acta Paediatrica, 112,* 2279–2292.

253. My prior declaration outlined the evidence reviewed by England's National Institute for Health and Care Excellence (NICE). That review has been expanded, independently replicated, and published as a large set of studies in the peer-reviewed literature in support of the Cass Review. The most directly relevant of these was its systematic review of social transition outcomes:

> Hall, R., Taylor, J., Heathcote, C., Langton, T., Hewitt, C. E., & Fraser, L. (2024). Gender services for children and adolescents across the EU-15+ countries: An online survey. *Archives of Disease in Childhood, 109 (suppl 2),* s83–92.

254. Dr. Budge's opinions are not the product of principles and methods accepted as reliable by the fields of medical science, behavioral science, or psychology. As outlined in the body of the present report, the standard in these fields is to apply systematic reviews of the research evidence, a formal process which minimizes opportunities for bias, such as the cherry-picking of studies from only one side of an issue (see Section II.B *Systematic Reviews*) and holding different studies up to different levels of scrutiny according to which side of an issue they support. Dr. Budge's report excluded all mention of the relevant systematic reviews other than those reflecting youth who self-report gender dysphoria and self-report victimization.

B. Dr. Budge relies on surveys and self-report studies that have significant methodological flaws.

255. Very many of the sources Dr. Budge cited as the basis of her opinions represent surveys of convenience samples (including Barr et al., 2021;[7] Durwood et al., 2017; Fox et al., 2020; Galupo et al., 2020; Price-Feeney et al., 2020; Olson et al., 2016; and Turban et al., 2021, among others). As outlined in the present report, surveys which record the replies of anyone who wants to respond are not systematic, do not yield reliable facts or data, and do not appear at all on the standard pyramid of evidence in clinical science. (See section VII.A. on the *Pyramid of Evidence.*)

C. Dr. Budge expressed opinions outside her expertise.

256. Dr. Budge expressed opinions outside her expertise. Dr. Budge indicated no educational background or training in neuroscience or sexually related offenses and their prevention, but she expressed (misinformed) opinions on the neuroanatomic basis of gender dysphoria (Budge 2025 Decl. ¶ 21); the associations of gender identity with the propensity to commit sex offenses (*id.* ¶ 64), a field of forensic psychology called *risk assessment;* and the association of gender identity with paraphilic behavior (*id.* ¶ 65), identified in the DSM-5-TR as *Exhibitionistic Disorder* and *Voyeuristic Disorder.*

D. Dr. Budge is wrong to say that "biological sex" is an inaccurate or imprecise term.

257. Consistent with the scientific method, sex is defined in science solely in terms of its objective and verifiable, biological features. Section II.B. of the present report quotes the definitions of sex from the Endocrine Society, the American Academy of Pediatrics, and the American Psychiatric Association, and the American Psychological Association, all of which explicitly define sex solely in terms of biological features, excluding gender identity. (These quotes were also included in my prior

[7] Dr. Budge's citation referring to this study is outdated. The current (now permanent) citation is: Barr, S. M., Snyder, K. E., Adelson, J. L., & Budge, S. L. (2022). Posttraumatic stress in the trans community: The roles of anti-transgender bias, non-affirmation, and internalized transphobia. *Psychology of Sexual Orientation and Gender Diversity, 9*, 410–421.

declaration.) In both her present declaration and 2023 declaration, however, Dr. Budge adds *gender identity* to those biological features that define sex:

> Every individual's sex is multifaceted and composed of many distinct biologically influenced characteristics, including, but not limited to, chromosomal makeup, hormones, internal and external reproductive organs, secondary sex characteristics, *and gender identity*. (Budge 2023 Decl. ¶ 22; Budge 2025 Decl. ¶ 18.)

Despite my showing their text verbatim, all lacking any mention of gender identity in their respective definitions of sex, Dr. Budge's rebuttal simply repeated her belief and cited these same documents without any quote or other demonstration that they did, in fact, include gender identity in their definition of sex. (Budge 2023 Rebuttal Decl. ¶ 20.) The only additional citation was a press release from the American Medical Association regarding sex markers on identity documents, not the inclusion of gender identity in the definition of sex.

258. In addition to the aforementioned sources, the definition of sex as a purely biological feature without gender identity is also what appears in the DSM-5-TR:

> *Sex* refers to factors attributable to an individual's reproductive organs and XX or XY chromosomal complement. (American Psychiatric Association 2022 at 19, italics in original.)
>
> This chapter employs constructs and terms as they are widely used by clinicians from various disciplines with specialization in treating gender dysphoria. In this chapter, *sex* and *sexual* refer to the biological indicators of male and female (understood in the context of reproductive capacity), such as in sex chromosomes, gonads, sex hormones, and nonambiguous internal and external genitalia. (American Psychiatric Association 2022 at 511, italics in original).

The same is true of the definition from the World Health Organization:

> Sex refers to the biological characteristics that define humans as female or male. (WHO, undated, available from https://www.who.int/health-topics/sexual-health#tab=tab_2.)

The Institute of Medicine concurs:

> *Sex* is understood here as a biological construct, referring to the genetic, hormonal, anatomical, and physiological characteristics on whose basis one is labeled at birth as either male or female. (Institute of Medicine 2011c at 25, italics in original.)
>
> (1) Generally understood as a biological construct, referring to the genetic, hormonal, anatomical, and physiological characteristics of males or females. Sex is typically assigned at birth based on the appearance of

> the external genitalia. Only when this appearance is ambiguous are other indicators of sex assessed to determine the most appropriate sex assignment. (2) All phenomena associated with erotic arousal or sensual stimulation of the genitalia or other erogenous zones, usually (but not always) leading to orgasm. (Institute of Medicine, 2011c, at 319.)

So does the Endocrine Society Clinical Practice Guideline for gender dysphoric/gender incongruent persons:

> *Sex:* This refers to attributes that characterize biological maleness or femaleness. The best known attributes include the sex-determining genes, the sex chromosomes, the H-Y antigen, the gonads, sex hormones, internal and external genitalia, and secondary sex characteristics. (Hembree 2017 at 3875, table 1.)

The official website of the U.S. Department of Health and Human Services provides the same:

> *Sex*: A type of eligibility criteria that indicates the sex of people who may participate in a clinical study (all, female, male). Sex is a person's classification as female or male based on biological distinctions. Sex is distinct from gender-based eligibility.
>
> *Gender-based eligibility*: A type of eligibility criteria that indicates whether eligibility to participate in a clinical study is based a person's self-representation of gender identity. Gender identity refers to a person's own sense of gender, which may or may not be the same as their biological sex.
>
> U.S. Department of Health and Human Services. (undated). Glossary, ClinicalTrials.gov. [Official Website] Available from https://clinicaltrials.gov/study-basics/glossary.

259. Although I offer no legal interpretation of the law, I note the Court describes the text of the law also to correspond to the text above:

> The Court will discuss this concept in greater detail later, but notes here that the definition of sex (in S.B. 1100 and in the legal community as a whole) does not include gender identity as Plaintiffs seem to suggest. (Memorandum Decision & Order (Oct. 12, 2023) at 11.)

260. Dr. Budge's 2023 declaration included the dramatic claim that:

> Where there is a divergence between these characteristics, gender identity is the most important and determinative factor. (Budge 2023 Decl. ¶ 22.)

I pointed out the lack of any scientific basis for such an assertion and noted that:

> Her report provides no citation to justify that claim nor the criteria by which such a claim might be distinguished from mere rhetoric. (Cantor 2023 Decl. ¶ 113.)

Dr. Budge's claim is removed from her present declaration.

261. The Budge declaration added a different claim, not merely unsupported, but entirely nonsensical:

> Accordingly, using a term such as "biological sex" is inaccurate, because there are a multitude of factors that contribute to one's sex. (Budge 2025 Decl. ¶ 18.)

Even if one accepted for argument's sake Dr. Budge's claim that "sex" included gender identity as well as biological factors, then language referring to biological sex aspects and non-biological sex aspects would be exactly how to maintain accuracy and precision.

262. Relatedly, in my report, I noted:

> Sex is an objective feature: It can be ascertained regardless of any declaration by a person, *such as by* chromosomal analysis or visual inspection. (Cantor 2023 Decl. ¶ 47, italics added.)

Dr. Budge diverted from this to claim:

> Dr. Cantor uses outdated, inaccurate, and narrow definitions of sex. Dr. Cantor mentions that sex *can only be* determined either by "visual inspection" or "chromosomes." (Budge 2023 Rebuttal Decl. ¶ 20, italics added.)

263. Dr. Budge claimed gender identity to be an "internal or psychological sense." (Budge 2023 Decl. ¶ 19; Budge 2025 Decl. ¶ 17.) Such a claim is scientifically invalid. To be scientifically valid, a construct must be each of objective, testable, and falsifiable. (See Section II on *Definitions of sex and gender identity*.)

264. Dr. Budge referred to gender identity as "a well-established concept in psychology and medicine." (Budge 2025 Decl. ¶ 17.) The claim does not reflect the status of the field. Indeed, the DSM-5-TR indicates the very opposite:

> The area of sex and gender is highly controversial and has led to a proliferation of terms who meanings vary over time and within and between disciplines. (APA 2022 at 511).

E. Dr. Budge is wrong to say that the neuroimaging studies suggest that gender dysphoria is biologically based.

265. Dr. Budge claimed:

> Neuroimaging data demonstrate strong evidence to indicate biological factors related to transgender identity. (Budge 2023 Decl. ¶ 20; Budge 2025 Decl. ¶ 21.)

As noted above, Dr. Budge is not an expert in neuroscience, and she misinterprets the neuroimaging evidence. As detailed in the present report (see Section V.H. *Neuroimaging studies*), the neuroimaging data demonstrate that brain features are associated with sexual orientation rather than with gender identity; studies that seemed to associate brain structure with gender identity did so because they confounded gender identity with sexual orientation; and other neuroscientists studying this topic have indicated my publishing exactly this observation to be correct. All four of the studies cited by Dr. Budge presenting neuroimaging data repeat the same error, confounding gender identity with sexual orientation:

- Carrillo et al. (2010) compared *homosexual* transsexuals (also called "early-onset" transsexuals) with *heterosexual* cissexuals.
- Nota et al. (2017) compared children and adolescents with early onset gender dysphoria (who mostly grow up into either *homosexual* transsexuals or *homosexual* cissexuals) with non-dysphoric youth (who mostly grow up into *heterosexual* cissexuals).
- Spizzirri et al. (2018) compared *homosexual* transsexuals with *heterosexual* cissexuals. The differences found between them are better attributable to sexual orientation than to gender identity (as per the "principle of parsimony" in science).
- Berglund et al. (2008) did compare *heterosexual* transsexuals with *heterosexual* cissexuals. In theory, such a design could be consistent with a difference attributable to gender identity distinct from sexual orientation; however, because only male-to-female transsexuals were tested (and not female-to-male transsexuals), and because these same researchers have also shown cissexual lesbians to have the corresponding neurological feature (Berglund et al. 2006), the results are necessarily inconclusive.

266. Dr. Budge's definitions and descriptions of gender identity are mutually inconsistent and contradictory. Her report claims on the one hand that gender dysphoria "*is* the psychiatric diagnosis for the distress associated with gender incongruence" (Budge 2025 Decl. ¶ 23, italics added), and yet that gender "incongruence can *cause* serious emotional distress" (*id.* ¶ 22, italics added). It is not possible in science for something to be its own cause.

F. Contrary to Dr. Budge's report, science does not show that youth benefit from social transition, nor that it reduces suicide or suicidality.

267. Dr. Budge claims that science demonstrates the "importance of social transition for transgender youth and young adults," which she contends includes using intimate facilities in accordance with the youth's claimed gender identity. (Budge 2025 Decl. ¶¶ 52–53.) But as I showed in Section XIII above, systematic reviews show that there's no demonstrated benefit from social transition. And as I demonstrated in Section XVII, no form of transition has been reliably shown to reduce suicide or suicidality.

G. Dr. Budge's reliance on minority stress theory is misplaced.

268. Dr. Budge relies on the concept of "minority stress" as the causative factor in mental health disparities between people who do and do not claim a transgender identity. (Budge 2025 Report ¶ 30.) But as I noted in Section V above, there are myriad problems with the theory that mental health concerns in the adolescent-onset population are driven by minority stress.

H. The changes in Dr. Budge's 2023 and 2025 declarations reflect the debunking of "authorities" like WPATH and further demonstrate the low quality of evidence that social or medical transitions are beneficial.

269. Dr. Budge's initial declaration included that receiving a diagnosis of gender dysphoria would follow from "questions that focus on the diagnostic criteria for gender dysphoria." (Budge 2023 Decl. ¶ 29.) I pointed out in my report that neglecting to look for any other explanation for the symptoms, such as *Borderline Personality Disorder*, is to engage in confirmation bias. (Cantor 2023 Decl. ¶ 115.) This section no longer appears in the present version of Dr. Budge's declaration.

270. Dr. Budge's prior declaration drew extensively from WPATH's Standards of Care, version 8. (Budge 2023 Decl. ¶¶ 25–33). In my prior declaration, I noted the succession of decreasing standards from version 6 to 7 to 8 and summarized the peer-reviewed studies that assessed the WPATH standards of care, repeatedly finding

them inadequate. (Cantor 2023 Decl. ¶¶ 118–26.) The present version of Dr. Budge's declaration does not mention the WPATH standards.

I. Dr. Budge points to select correlations without considering other possible explanations.

271. The remainder of Dr. Budge's declaration consists of her providing one of the several possible interpretations of (some of the) correlations reported in the research literature. Specifically, Dr. Budge cites correlations between gender dysphoria and mental health issues, repeatedly inferring the causal conclusion that the mental health issues are caused by transphobia and failures to support transition. As noted already in the present report, correlations are ambiguous and open to interpretation: They can be explained in more than one way. Dr. Budge does not consider, mention, or provide any evidence to rule out any of the other potential explanations of the correlations among these constructs.

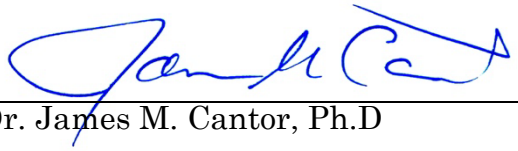
272. Missing entirely from Dr. Budge's interpretation of the correlations is that high rates of mental distress are not unique to gender dysphoric minors. Signs of distress are increasing throughout the current generation of youth, especially adolescent females, and these indicators all began their exponential increases at the same time—upon the introduction of social media. The great increases in each of gender dysphoria, mental illness, and suicide and suicidality, all are primarily affecting the same demographic group—adolescent females, the same demographic most vulnerable to negative social influence on body image and self-perception.

273. The correlations among mental health, sex, gender dysphoria, and treatment are potentially explained as individual facets of mental health brought on by social media. The treatments associated with improvement are those that include psychotherapy. Dr. Budge's explanation for these correlations is not an explanation at all: It leaves the conspicuous simultaneity of these phenomena, the consistent

demographic repeatedly the most affected, and the ubiquity of social perception and attachment needs across them all as merely coincidental.

DECLARATION OF JAMES M. CANTOR, PHD.

I, Dr. James Cantor, pursuant to 28 U.S. Code § 1746, declare under penalty of perjury under the laws of the United States of America that the facts contained in my foregoing expert report are true and correct to the best of my knowledge and belief, and that the opinions expressed therein represent my own expert opinions.



Executed July 21, 2025

Dr. James M. Cantor, Ph.D

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List of Appendices

Appendix 1

Curriculum Vita

Appendix 2

Cantor, J. M. (2020). Transgender and gender diverse children and adolescents: Fact-checking of AAP policy. *Journal of Sex & Marital Therapy, 46,* 307–313. doi: 10.1080/0092623X.2019.1698481

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EDUCATION

Postdoctoral Fellowship Jan., 2000–May, 2004
Centre for Addiction and Mental Health • Toronto, Canada

Doctor of Philosophy Sep., 1993–Jun., 2000
Psychology • McGill University • Montréal, Canada

Master of Arts Sep., 1990–Jan., 1992
Psychology • Boston University • Boston, MA

Bachelor of Science Sep. 1984–Aug., 1988
Interdisciplinary Science • Rensselaer Polytechnic Institute • Troy, NY
Concentrations: Computer science, mathematics, physics

EMPLOYMENT HISTORY

Director Feb., 2017–Present
Toronto Sexuality Centre • Toronto, Canada

Senior Scientist (Inaugural Member) Aug., 2012–May, 2018
Campbell Family Mental Health Research Institute
Centre for Addiction and Mental Health • Toronto, Canada

Senior Scientist Jan., 2012–May, 2018
Complex Mental Illness Program
Centre for Addiction and Mental Health • Toronto, Canada

Head of Research Nov., 2010–Apr. 2014
Sexual Behaviours Clinic
Centre for Addiction and Mental Health • Toronto, Canada

Research Section Head Dec., 2009–Sep. 2012
Law & Mental Health Program
Centre for Addiction and Mental Health • Toronto, Canada

Psychologist May, 2004–Dec., 2011
Law & Mental Health Program
Centre for Addiction and Mental Health • Toronto, Canada

Clinical Psychology Intern Sep., 1998–Aug., 1999
Centre for Addiction and Mental Health • Toronto, Canada

Teaching Assistant Sep., 1993–May, 1998
Department of Psychology
McGill University • Montréal, Canada

Pre-Doctoral Practicum Sep., 1993–Jun., 1997
Sex and Couples Therapy Unit
Royal Victoria Hospital • Montréal, Canada

Pre-Doctoral Practicum May, 1994–Dec., 1994
Department of Psychiatry
Queen Elizabeth Hospital • Montréal, Canada

ACADEMIC APPOINTMENTS

Associate Professor Jul., 2010–May, 2019
Department of Psychiatry
University of Toronto Faculty of Medicine • Toronto, Canada

Adjunct Faculty Aug. 2013–Jun., 2018
Graduate Program in Psychology
York University • Toronto, Canada

Associate Faculty (Hon) Oct., 2017–Dec., 2017
School of Behavioural, Cognitive & Social Science
University of New England • Armidale, Australia

Assistant Professor Jun., 2005–Jun., 2010
Department of Psychiatry
University of Toronto Faculty of Medicine • Toronto, Canada

Adjunct Faculty Sep., 2004–Jun., 2010
Clinical Psychology Residency Program
St. Joseph's Healthcare • Hamilton, Canada

PUBLICATIONS

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2. Cantor, J. M. (2020). Transgender and gender diverse children and adolescents: Fact-checking of AAP policy. *Journal of Sex & Marital Therapy, 46,* 307–313. doi: 10.1080/0092623X.2019.1698481
3. Shirazi, T., Self, H., Cantor, J., Dawood, K., Cardenas, R., Rosenfield, K., Ortiz, T., Carré, J., McDaniel, M., Blanchard, R., Balasubramanian, R., Delaney, A., Crowley, W., S Marc Breedlove, S. M., & Puts, D. (2020). Timing of peripubertal steroid exposure predicts visuospatial cognition in men: Evidence from three samples. *Hormones and Behavior, 121, 104712*. doi: 10.1016/j.yhbeh.2020.104712
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PUBLICATIONS

LETTERS AND COMMENTARIES

1. Cantor, J. M. (2015). Research methods, statistical analysis, and the phallometric test for hebephilia: Response to Fedoroff [Editorial Commentary]. *Journal of Sexual Medicine, 12,* 2499–2500. doi: 10.1111/jsm.13040
2. Cantor, J. M. (2015). In his own words: Response to Moser [Editorial Commentary]. *Journal of Sexual Medicine, 12,* 2502–2503. doi: 10.1111/jsm.13075
3. Cantor, J. M. (2015). Purported changes in pedophilia as statistical artefacts: Comment on Müller et al. (2014). *Archives of Sexual Behavior, 44,* 253–254. doi: 10.1007/s10508-014-0343-x
4. McPhail, I. V., & Cantor, J. M. (2015). Pedophilia, height, and the magnitude of the association: A research note. *Deviant Behavior, 36,* 288–292. doi: 10.1080/01639625.2014.935644
5. Soh, D. W., & Cantor, J. M. (2015). A peek inside a furry convention [Letter to the Editor]. *Archives of Sexual Behavior, 44,* 1–2. doi: 10.1007/s10508-014-0423-y
6. Cantor, J. M. (2012). Reply to Italiano's (2012) comment on Cantor (2011) [Letter to the Editor]. *Archives of Sexual Behavior, 41,* 1081–1082. doi: 10.1007/s10508-012-0011-y
7. Cantor, J. M. (2012). The errors of Karen Franklin's *Pretextuality* [Commentary]. *International Journal of Forensic Mental Health, 11,* 59–62. doi: 10.1080/14999013.2012.672945
8. Cantor, J. M., & Blanchard, R. (2012). White matter volumes in pedophiles, hebephiles, and teleiophiles [Letter to the Editor]. *Archives of Sexual Behavior, 41, 749–752.* doi: 10.1007/s10508-012-9954-2
9. Cantor, J. M. (2011). New MRI studies support the Blanchard typology of male-to-female transsexualism [Letter to the Editor]. *Archives of Sexual Behavior, 40*, 863–864. doi: 10.1007/s10508-011-9805-6
10. Zucker, K. J., Bradley, S. J., Own-Anderson, A., Kibblewhite, S. J., & Cantor, J. M. (2008). Is gender identity disorder in adolescents coming out of the closet? *Journal of Sex and Marital Therapy, 34,* 287–290.
11. Cantor, J. M. (2003, Summer). Review of the book *The Man Who Would Be Queen* by J. Michael Bailey. *Newsletter of Division 44 of the American Psychological Association, 19*(2), 6.
12. Cantor, J. M. (2003, Spring). What are the hot topics in LGBT research in psychology? *Newsletter of Division 44 of the American Psychological Association, 19*(1), 21–24.
13. Cantor, J. M. (2002, Fall). Male homosexuality, science, and pedophilia. *Newsletter of Division 44 of the American Psychological Association, 18*(3), 5–8.
14. Cantor, J. M. (2000). Review of the book *Sexual Addiction: An Integrated Approach. Journal of Sex and Marital Therapy, 26*, 107–109.

EDITORIALS

1. Cantor, J. M. (2012). Editorial. *Sexual Abuse: A Journal of Research and Treatment, 24*.

2. Cantor, J. M. (2011). Editorial note. *Sexual Abuse: A Journal of Research and Treatment, 23,* 414.
3. Barbaree, H. E., & Cantor, J. M. (2010). Performance indicates for *Sexual Abuse: A Journal of Research and Treatment* (SAJRT) [Editorial]. *Sexual Abuse: A Journal of Research and Treatment, 22,* 371–373.
4. Barbaree, H. E., & Cantor, J. M. (2009). *Sexual Abuse: A Journal of Research and Treatment* performance indicators for 2007 [Editorial]. *Sexual Abuse: A Journal of Research and Treatment, 21,* 3–5.
5. Zucker, K. J., & Cantor, J. M. (2009). Cruising: Impact factor data [Editorial]. *Archives of Sexual Research, 38,* 878–882.
6. Barbaree, H. E., & Cantor, J. M. (2008). Performance indicators for *Sexual Abuse: A Journal of Research and Treatment* [Editorial]. *Sexual Abuse: A Journal of Research and Treatment, 20,* 3–4.
7. Zucker, K. J., & Cantor, J. M. (2008). The *Archives* in the era of online first ahead of print[Editorial]. *Archives of Sexual Behavior, 37,* 512–516.
8. Zucker, K. J., & Cantor, J. M. (2006). The impact factor: The *Archives* breaks from the pack [Editorial]. *Archives of Sexual Behavior, 35,* 7–9.
9. Zucker, K. J., & Cantor, J. M. (2005). The impact factor: “Goin’ up” [Editorial]. *Archives of Sexual Behavior, 34,* 7–9.
10. Zucker, K., & Cantor, J. M. (2003). The numbers game: The impact factor and all that jazz [Editorial]. *Archives of Sexual Behavior, 32,* 3–5.

FUNDING HISTORY

Principal Investigators:	Doug VanderLaan, Meng-Chuan Lai
Co-Investigators:	James M. Cantor, Megha Mallar Chakravarty, Nancy Lobaugh, M. Palmert, M. Skorska
Title:	*Brain function and connectomics following sex hormone treatment in adolescents experience gender dysphoria*
Agency:	Canadian Institutes of Health Research (CIHR), Behavioural Sciences-B-2
Funds:	$650,250 / 5 years (July, 2018–August, 2020)

Principal Investigator:	Michael C. Seto
Co-Investigators:	Martin Lalumière , James M. Cantor
Title:	*Are connectivity differences unique to pedophilia?*
Agency:	University Medical Research Fund, Royal Ottawa Hospital
Funds:	$50,000 / 1 year (January, 2018–March, 2022)

Principal Investigator:	Lori Brotto
Co-Investigators:	Anthony Bogaert, James M. Cantor, Gerulf Rieger
Title:	*Investigations into the neural underpinnings and biological correlates of asexuality*
Agency:	Natural Sciences and Engineering Research Council (NSERC), Discovery Grants Program
Funds:	$195,000 / 5 years (April, 2017–March, 2022)

Principal Investigator:	Doug VanderLaan
Co-Investigators:	Jerald Bain, James M. Cantor, Megha Mallar Chakravarty, Sofia Chavez, Nancy Lobaugh, and Kenneth J. Zucker
Title:	*Effects of sex hormone treatment on brain development: A magnetic resonance imaging study of adolescents with gender dysphoria*
Agency:	Canadian Institutes of Health Research (CIHR), Transitional Open Grant Program
Funds:	$952,955 / 5 years (September, 2015–August, 2020)

Principal Investigator:	James M. Cantor
Co-Investigators:	Howard E. Barbaree, Ray Blanchard, Robert Dickey, Todd A. Girard, Phillip E. Klassen, and David J. Mikulis
Title:	*Neuroanatomic features specific to pedophilia*
Agency:	Canadian Institutes of Health Research (CIHR)
Funds:	$1,071,920 / 5 years (October, 2008–September, 2014)

Principal Investigator:	James M. Cantor
Title:	*A preliminary study of fMRI as a diagnostic test of pedophilia*
Agency:	Dean of Medicine New Faculty Grant Competition, Univ. of Toronto
Funds:	$10,000 (July, 2008–July, 2013)

Principal Investigator:	James M. Cantor
Co-Investigator:	Ray Blanchard
Title:	*Morphological and neuropsychological correlates of pedophilia*
Agency:	Canadian Institutes of Health Research (CIHR)
Funds:	$196,902 / 3 years (April, 2006–March, 2009)

KEYNOTE AND INVITED ADDRESSES

1. Cantor, J. M. (2025, May 15). *Paedophilia: Nature or nurture?* UK National Organisation for the Treatment of Abuse. Belfast, Northern Ireland.
2. Cantor, J. M. (2024, July 7). *Treating Gender Dysphoria in minors: Latest developments in science and policy.* Alliance Defending Freedom, Religious Liberties Summit. Fort Meyers, Florida.
3. Cantor, J. M. (2024, April 19). *Treating Gender Dysphoria in minors: Latest developments in science and policy.* Alliance Defending Freedom, Senior Staff Retreat. Vail, Colorado.
4. Cantor, J. M. (2022, December 5). The science of gender dysphoria and transgenderism. Lund University, Latvia. https://files.fm/f/4bzznufvb
5. Cantor, J. M. (2022, July 20). *Suicidality research on minors with gender dysphoria.* Alliance Defending Freedom, Religious Liberties Summit. Atlanta, Georgia.
6. Cantor, J. M. (2022, April 9). *Suicidality research on minors with gender dysphoria.* Alliance Defending Freedom, Senior Staff Retreat. Reno, Nevada.
7. Cantor, J. M. (2021, September 28). *No topic too tough for this expert panel: A year in review.* Plenary Session for the 40th Annual Research and Treatment Conference, Association for the Treatment of Sexual Abusers.
8. Cantor, J. M. (2019, May 1). *Introduction and Q&A for 'I, Pedophile.'* StopSO 2nd Annual Conference, London, UK.
9. Cantor, J. M. (2018, August 29). *Neurobiology of pedophilia or paraphilia? Towards a 'Grand Unified Theory' of sexual interests.* Keynote address to the International Association for the Treatment of Sexual Offenders, Vilnius, Lithuania.
10. Cantor, J. M. (2018, August 29). *Pedophilia and the brain: Three questions asked and answered.* Preconference training presented to the International Association for the Treatment of Sexual Offenders, Vilnius, Lithuania.
11. Cantor, J. M. (2018, April 13). *The responses to* I, Pedophile *from We, the people.* Keynote address to the Minnesota Association for the Treatment of Sexual Abusers, Minneapolis, Minnesota.
12. Cantor, J. M. (2018, April 11). *Studying atypical sexualities: From vanilla to* I, Pedophile. Full day workshop at the Minnesota Association for the Treatment of Sexual Abusers, Minneapolis, Minnesota.
13. Cantor, J. M. (2018, January 20). *How much sex is enough for a happy life?* Invited lecture to the University of Toronto Division of Urology Men's Health Summit, Toronto, Canada.
14. Cantor, J. M. (2017, November 2). Pedophilia as a phenomenon of the brain: Update of evidence and the public response. Invited presentation to the 7th annual SBC education event, Centre for Addiction and Mental Health, Toronto, Canada.
15. Cantor, J. M. (2017, June 9). Pedophilia being in the brain: The evidence and the public's reaction. Invited presentation to *SEXposium at the ROM: The science of love and sex,* Toronto, Canada.
16. Cantor, J. M., & Campea, M. (2017, April 20). *"I, Pedophile" showing and discussion.* Invited presentation to the 42nd annual meeting of the Society for Sex Therapy and Research, Montréal, Canada.
17. Cantor, J. M. (2017, March 1). *Functional and structural neuroimaging of pedophilia:*

Consistencies across methods and modalities. Invited lecture to the Brain Imaging Centre, Royal Ottawa Hospital, Ottawa, Canada.

18. Cantor, J. M. (2017, January 26). *Pedophilia being in the brain: The evidence and the public reaction.* Inaugural keynote address to the University of Toronto Sexuality Interest Network, Toronto, Ontario, Canada.
19. Cantor, J. M. (2016, October 14). *Discussion of CBC's "I, Pedophile."* Office of the Children's Lawyer Educational Session, Toronto, Ontario, Canada.
20. Cantor, J. M. (2016, September 15). *Evaluating the risk to reoffend: What we know and what we don't.* Invited lecture to the Association of Ontario Judges, Ontario Court of Justice Annual Family Law Program, Blue Mountains, Ontario, Canada. [Private link only: https://vimeo.com/239131108/3387c80652]
21. Cantor, J. M. (2016, April 8). *Pedophilia and the brain: Conclusions from the second generation of research.* Invited lecture at the 10th annual Risk and Recovery Forensic Conference, Hamilton, Ontario.
22. Cantor, J. M. (2016, April 7). *Hypersexuality without the hyperbole.* Keynote address to the 10th annual Risk and Recovery Forensic Conference, Hamilton, Ontario.
23. Cantor, J. M. (2015, November). *No one asks to be sexually attracted to children: Living in Daniel's World.* Grand Rounds, Centre for Addiction and Mental Health. Toronto, Canada.
24. Cantor, J. M. (2015, August). *Hypersexuality: Getting past whether "it" is or "it" isn't.* Invited address at the 41st annual meeting of the International Academy of Sex Research. Toronto, Canada.
25. Cantor, J. M. (2015, July). *A unified theory of typical and atypical sexual interest in men: Paraphilia, hypersexuality, asexuality, and vanilla as outcomes of a single, dual opponent process.* Invited presentation to the 2015 Puzzles of Sexual Orientation conference, Lethbridge, AL, Canada.
26. Cantor, J. M. (2015, June). *Hypersexuality.* Keynote Address to the Ontario Problem Gambling Provincial Forum. Toronto, Canada.
27. Cantor, J. M. (2015, May). *Assessment of pedophilia: Past, present, future.* Keynote Address to the International Symposium on Neural Mechanisms Underlying Pedophilia and Child Sexual Abuse (NeMUP). Berlin, Germany.
28. Cantor, J. M. (2015, March). *Prevention of sexual abuse by tackling the biggest stigma of them all: Making sex therapy available to pedophiles.* Keynote address to the 40th annual meeting of the Society for Sex Therapy and Research, Boston, MA.
29. Cantor, J. M. (2015, March. *Pedophilia: Predisposition or perversion?* Panel discussion at Columbia University School of Journalism. New York, NY.
30. Cantor, J. M. (2015, February). *Hypersexuality.* Research Day Grand Rounds presentation to Ontario Shores Centre for Mental Health Sciences, Whitby, Ontario, Canada.
31. Cantor, J. M. (2015, January). *Brain research and pedophilia: What it means for assessment, research, and policy.* Keynote address to the inaugural meeting of the Netherlands Association for the Treatment of Sexual Abusers, Utrecht, Netherlands.
32. Cantor, J. M. (2014, December). *Understanding pedophilia and the brain: Implications for safety and society.* Keynote address for The Jewish Community Confronts Violence and Abuse: Crisis Centre for Religious Women, Jerusalem, Israel.
33. Cantor, J. M. (2014, October). *Understanding pedophilia & the brain.* Invited full-day workshop for the Sex Offender Assessment Board of Pennsylvania, Harrisburg, PA.

34. Cantor, J. M. (2014, September). *Understanding neuroimaging of pedophilia: Current status and implications.* Invited lecture presented to the Mental Health and Addition Rounds, St. Joseph's Healthcare, Hamilton, Ontario, Canada.
35. Cantor, J. M. (2014, June). *An evening with Dr. James Cantor.* Invited lecture presented to the Ontario Medical Association, District 11 Doctors' Lounge Program, Toronto, Ontario, Canada.
36. Cantor, J. M. (2014, April). *Pedophilia and the brain.* Invited lecture presented to the University of Toronto Medical Students lunchtime lecture. Toronto, Ontario, Canada.
37. Cantor, J. M. (2014, February). *Pedophilia and the brain: Recap and update.* Workshop presented at the 2014 annual meeting of the Washington State Association for the Treatment of Sexual Abusers, Cle Elum, WA.
38. Cantor, J. M., Lafaille, S., Hannah, J., Kucyi, A., Soh, D., Girard, T. A., & Mikulis, D. M. (2014, February). *Functional connectivity in pedophilia.* Neuropsychiatry Rounds, Toronto Western Hospital, Toronto, Ontario, Canada.
39. Cantor, J. M. (2013, November). *Understanding pedophilia and the brain: The basics, the current status, and their implications.* Invited lecture to the Forensic Psychology Research Centre, Carleton University, Ottawa, Canada.
40. Cantor, J. M. (2013, November). *Mistaking puberty, mistaking hebephilia.* Keynote address presented to the 32nd annual meeting of the Association for the Treatment of Sexual Abusers, Chicago, IL.
41. Cantor, J. M. (2013, October). *Understanding pedophilia and the brain: A recap and update.* Invited workshop presented at the 32nd annual meeting of the Association for the Treatment of Sexual Abusers, Chicago, IL.
42. Cantor, J. M. (2013, October). *Compulsive-hyper-sex-addiction: I don't care what we all it, what can we* do*?* Invited address presented to the Board of Examiners of Sex Therapists and Counselors of Ontario, Toronto, Ontario, Canada.
43. Cantor, J. M. (2013, September). *Neuroimaging of pedophilia: Current status and implications.* McGill University Health Centre, Department of Psychiatry Grand Rounds presentation, Montréal, Québec, Canada.
44. Cantor, J. M. (2013, April). *Understanding pedophilia and the brain.* Invited workshop presented at the 2013 meeting of the Minnesota Association for the Treatment of Sexual Abusers, Minneapolis, MN.
45. Cantor, J. M. (2013, April). *The neurobiology of pedophilia and its implications for assessment, treatment, and public policy.* Invited lecture at the 38th annual meeting of the Society for Sex Therapy and Research, Baltimore, MD.
46. Cantor, J. M. (2013, April). *Sex offenders: Relating research to policy.* Invited roundtable presentation at the annual meeting of the Academy of Criminal Justice Sciences, Dallas, TX.
47. Cantor, J. M. (2013, March). *Pedophilia and brain research: From the basics to the state-of-the-art.* Invited workshop presented to the annual meeting of the Forensic Mental Health Association of California, Monterey, CA.
48. Cantor, J. M. (2013, January). *Pedophilia and child molestation.* Invited lecture presented to the Canadian Border Services Agency, Toronto, Ontario, Canada.
49. Cantor, J. M. (2012, November). *Understanding pedophilia and sexual offenders against children: Neuroimaging and its implications for public safety.* Invited guest lecture to

University of New Mexico School of Medicine Health Sciences Center, Albuquerque, NM.

50. Cantor, J. M. (2012, November). *Pedophilia and brain research.* Invited guest lecture to the annual meeting of the Circles of Support and Accountability, Toronto, Ontario, Canada.
51. Cantor, J. M. (2012, January). *Current findings on pedophilia brain research.* Invited workshop at the San Diego International Conference on Child and Family Maltreatment, San Diego, CA.
52. Cantor, J. M. (2012, January). *Pedophilia and the risk to re-offend.* Invited lecture to the Ontario Court of Justice Judicial Development Institute, Toronto, Ontario, Canada.
53. Cantor, J. M. (2011, November). *Pedophilia and the brain: What it means for assessment, treatment, and policy.* Plenary Lecture presented at the Association for the Treatment of Sexual Abusers, Toronto, Ontario, Canada. https://www.youtube.com/watch?v=4IZxcdskmUs
54. Cantor, J. M. (2011, July). *Towards understanding contradictory findings in the neuroimaging of pedophilic men.* Keynote address to 7th annual conference on Research in Forensic Psychiatry, Regensberg, Germany.
55. Cantor, J. M. (2011, March). *Understanding sexual offending and the brain: Brain basics to the state of the art.* Workshop presented at the winter conference of the Oregon Association for the Treatment of Sexual Abusers, Oregon City, OR.
56. Cantor, J. M. (2010, October). *Manuscript publishing for students.* Workshop presented at the 29th annual meeting of the Association for the Treatment of Sexual Abusers, Phoenix, AZ.
57. Cantor, J. M. (2010, August). *Is sexual orientation a paraphilia?* Invited lecture at the International Behavioral Development Symposium, Lethbridge, Alberta, Canada.
58. Cantor, J. M. (2010, March). *Understanding sexual offending and the brain: From the basics to the state of the art.* Workshop presented at the annual meeting of the Washington State Association for the Treatment of Sexual Abusers, Blaine, WA.
59. Cantor, J. M. (2009, January). *Brain structure and function of pedophilia men.* Neuropsychiatry Rounds, Toronto Western Hospital, Toronto, Ontario.
60. Cantor, J. M. (2008, April). *Is pedophilia caused by brain dysfunction?* Invited address to the University-wide Science Day Lecture Series, SUNY Oswego, Oswego, NY.
61. Cantor, J. M., Kabani, N., Christensen, B. K., Zipursky, R. B., Barbaree, H. E., Dickey, R., Klassen, P. E., Mikulis, D. J., Kuban, M. E., Blak, T., Richards, B. A., Hanratty, M. K., & Blanchard, R. (2006, September). *MRIs of pedophilic men.* Invited presentation at the 25th annual meeting of the Association for the Treatment of Sexual Abusers, Chicago.
62. Cantor, J. M., Blanchard, R., & Christensen, B. K. (2003, March). *Findings in and implications of neuropsychology and epidemiology of pedophilia.* Invited lecture at the 28th annual meeting of the Society for Sex Therapy and Research, Miami.
63. Cantor, J. M., Christensen, B. K., Klassen, P. E., Dickey, R., & Blanchard, R. (2001, July). *Neuropsychological functioning in pedophiles.* Invited lecture presented at the 27th annual meeting of the International Academy of Sex Research, Bromont, Canada.
64. Cantor, J. M., Blanchard, R., Christensen, B., Klassen, P., & Dickey, R. (2001, February). *First glance at IQ, memory functioning and handedness in sex offenders.* Lecture presented at the Forensic Lecture Series, Centre for Addiction and Mental Health, Toronto, Ontario, Canada.

65. Cantor, J. M. (1999, November). *Reversal of SSRI-induced male sexual dysfunction: Suggestions from an animal model.* Grand Rounds presentation at the Allan Memorial Institute, Royal Victoria Hospital, Montréal, Canada.

PAPER PRESENTATIONS AND SYMPOSIA

1. Cantor, J. M. (2020, April). "I'd rather have a trans kid than a dead kid": Critical assessment of reported rates of suicidality in trans kids. *Paper presented at the annual meeting of the Society for the Sex Therapy and Research.* Online in lieu of in person meeting.
2. Stephens, S., Lalumière, M., Seto, M. C., & Cantor, J. M. (2017, October). *The relationship between sexual responsiveness and sexual exclusivity in phallometric profiles.* Paper presented at the annual meeting of the Canadian Sex Research Forum, Fredericton, New Brunswick, Canada.
3. Stephens, S., Cantor, J. M., & Seto, M. C. (2017, March). *Can the SSPI-2 detect hebephilic sexual interest?* Paper presented at the annual meeting of the American-Psychology Law Society Annual Meeting, Seattle, WA.
4. Stephens, S., Seto, M. C., Goodwill, A. M., & Cantor, J. M. (2015, October). *Victim choice polymorphism and recidivism.* Symposium Presentation. Paper presented at the 34th annual meeting of the Association for the Treatment of Sexual Abusers, Montréal, Canada.
5. McPhail, I. V., Hermann, C. A., Fernane, S. Fernandez, Y., Cantor, J. M., & Nunes, K. L. (2014, October). *Sexual deviance in sexual offenders against children: A meta-analytic review of phallometric research.* Paper presented at the 33rd annual meeting of the Association for the Treatment of Sexual Abusers, San Diego, CA.
6. Stephens, S., Seto, M. C., Cantor, J. M., & Goodwill, A. M. (2014, October). *Is hebephilic sexual interest a criminogenic need?: A large scale recidivism study.* Paper presented at the 33rd annual meeting of the Association for the Treatment of Sexual Abusers, San Diego, CA.
7. Stephens, S., Seto, M. C., Cantor, J. M., & Lalumière, M. (2014, October). *Development and validation of the Revised Screening Scale for Pedophilic Interests (SSPI–2).* Paper presented at the 33rd annual meeting of the Association for the Treatment of Sexual Abusers, San Diego, CA.
8. Cantor, J. M., Lafaille, S., Hannah, J., Kucyi, A., Soh, D., Girard, T. A., & Mikulis, D. M. (2014, September). *Pedophilia and the brain: White matter differences detected with DTI.* Paper presented at the 13th annual meeting of the International Association for the Treatment of Sexual Abusers, Porto, Portugal.
9. Stephens, S., Seto, M., Cantor, J. M., Goodwill, A. M., & Kuban, M. (2014, March). *The role of hebephilic sexual interests in sexual victim choice.* Paper presented at the annual meeting of the American Psychology and Law Society, New Orleans, LA.
10. McPhail, I. V., Fernane, S. A., Hermann, C. A., Fernandez, Y. M., Nunes, K. L., & Cantor, J. M. (2013, November). *Sexual deviance and sexual recidivism in sexual offenders against children: A meta-analysis.* Paper presented at the 32nd annual meeting of the Association for the Treatment of Sexual Abusers, Chicago, IL.
11. Cantor, J. M. (2013, September). *Pedophilia and the brain: Current MRI research and its implications.* Paper presented at the 21st annual World Congress for Sexual Health, Porto Alegre, Brazil. [Featured among Best Abstracts, top 10 of 500.]
12. Cantor, J. M. (Chair). (2012, March). *Innovations in sex research.* Symposium conducted at the 37th annual meeting of the Society for Sex Therapy and Research, Chicago.
13. Cantor, J. M., & Blanchard, R. (2011, August). fMRI versus phallometry in the diagnosis of pedophilia and hebephilia. In J. M. Cantor (Chair), *Neuroimaging of men's object*

preferences. Symposium presented at the 37th annual meeting of the International Academy of Sex Research, Los Angeles, USA.

14. Cantor, J. M. (Chair). (2011, August). *Neuroimaging of men's object preferences.* Symposium conducted at the 37th annual meeting of the International Academy of Sex Research, Los Angeles.
15. Cantor, J. M. (2010, October). A meta-analysis of neuroimaging studies of male sexual arousal. In S. Stolerú (Chair), *Brain processing of sexual stimuli in pedophilia: An application of functional neuroimaging.* Symposium presented at the 29th annual meeting of the Association for the Treatment of Sexual Abusers, Phoenix, AZ.
16. Chivers, M. L., Seto, M. C., Cantor, J. C., Grimbos, T., & Roy, C. (April, 2010). *Psychophysiological assessment of sexual activity preferences in women.* Paper presented at the 35th annual meeting of the Society for Sex Therapy and Research, Boston, USA.
17. Cantor, J. M., Girard, T. A., & Lovett-Barron, M. (2008, November). *The brain regions that respond to erotica: Sexual neuroscience for dummies.* Paper presented at the 51st annual meeting of the Society for the Scientific Study of Sexuality, San Juan, Puerto Rico.
18. Barbaree, H., Langton, C., Blanchard, R., & Cantor, J. M. (2007, October). *The role of age-at-release in the evaluation of recidivism risk of sexual offenders.* Paper presented at the 26th annual meeting of the Association for the Treatment of Sexual Abusers, San Diego.
19. Cantor, J. M., Kabani, N., Christensen, B. K., Zipursky, R. B., Barbaree, H. E., Dickey, R., Klassen, P. E., Mikulis, D. J., Kuban, M. E., Blak, T., Richards, B. A., Hanratty, M. K., & Blanchard, R. (2006, July). *Pedophilia and brain morphology.* Abstract and paper presented at the 32nd annual meeting of the International Academy of Sex Research, Amsterdam, Netherlands.
20. Seto, M. C., Cantor, J. M., & Blanchard, R. (2006, March). *Child pornography offending is a diagnostic indicator of pedophilia*. Paper presented at the 2006 annual meeting of the American Psychology-Law Society Conference, St. Petersburg, Florida.
21. Blanchard, R., Cantor, J. M., Bogaert, A. F., Breedlove, S. M., & Ellis, L. (2005, August). *Interaction of fraternal birth order and handedness in the development of male homosexuality.* Abstract and paper presented at the International Behavioral Development Symposium, Minot, North Dakota.
22. Cantor, J. M., & Blanchard, R. (2005, July). *Quantitative reanalysis of aggregate data on IQ in sexual offenders.* Abstract and poster presented at the 31st annual meeting of the International Academy of Sex Research, Ottawa, Canada.
23. Cantor, J. M. (2003, August). *Sex reassignment on demand: The clinician's dilemma.* Paper presented at the 111th annual meeting of the American Psychological Association, Toronto, Canada.
24. Cantor, J. M. (2003, June). *Meta-analysis of VIQ–PIQ differences in male sex offenders.* Paper presented at the Harvey Stancer Research Day, Toronto, Ontario, Canada.
25. Cantor, J. M. (2002, August). *Gender role in autogynephilic transsexuals: The more things change…* Paper presented at the 110th annual meeting of the American Psychological Association, Chicago.

26. Cantor, J. M., Christensen, B. K., Klassen, P. E., Dickey, R., & Blanchard, R. (2001, June). *IQ, memory functioning, and handedness in male sex offenders.* Paper presented at the Harvey Stancer Research Day, Toronto, Ontario, Canada.
27. Cantor, J. M. (1998, August). *Convention orientation for lesbian, gay, and bisexual students*. Papers presented at the 106th annual meeting of the American Psychological Association.
28. Cantor, J. M. (1997, August). *Discussion hour for lesbian, gay, and bisexual students*. Presented at the 105th annual meeting of the American Psychological Association.
29. Cantor, J. M. (1997, August). *Convention orientation for lesbian, gay, and bisexual students*. Paper presented at the 105th annual meeting of the American Psychological Association.
30. Cantor, J. M. (1996, August). *Discussion hour for lesbian, gay, and bisexual students*. Presented at the 104th annual meeting of the American Psychological Association.
31. Cantor, J. M. (1996, August). *Symposium: Question of inclusion: Lesbian and gay psychologists and accreditation*. Paper presented at the 104th annual meeting of the American Psychological Association, Toronto.
32. Cantor, J. M. (1996, August). *Convention orientation for lesbian, gay, and bisexual students*. Papers presented at the 104th annual meeting of the American Psychological Association.
33. Cantor, J. M. (1995, August). *Discussion hour for lesbian, gay, and bisexual students*. Presented at the 103rd annual meeting of the American Psychological Association.
34. Cantor, J. M. (1995, August). *Convention orientation for lesbian, gay, and bisexual students*. Papers presented at the 103rd annual meeting of the American Psychological Association.
35. Cantor, J. M. (1994, August). *Discussion hour for lesbian, gay, and bisexual students*. Presented at the 102nd annual meeting of the American Psychological Association.
36. Cantor, J. M. (1994, August). *Convention orientation for lesbian, gay, and bisexual students*. Papers presented at the 102nd annual meeting of the American Psychological Association.
37. Cantor, J. M., & Pilkington, N. W. (1992, August). *Homophobia in psychology programs: A survey of graduate students.* Paper presented at the Centennial Convention of the American Psychological Association, Washington, DC. (ERIC Document Reproduction Service No. ED 351 618)
38. Cantor, J. M. (1991, August). *Being gay and being a graduate student: Double the memberships, four times the problems*. Paper presented at the 99th annual meeting of the American Psychological Association, San Francisco.

POSTER PRESENTATIONS

1. Klein, L., Stephens, S., Goodwill, A. M., Cantor, J. M., & Seto, M. C. (2015, October). *The psychological propensities of risk in undetected sexual offenders.* Poster presented at the 34th annual meeting of the Association for the Treatment of Sexual Abusers, Montréal, Canada.
2. Pullman, L. E., Stephens, S., Seto, M. C., Goodwill, A. M., & Cantor, J. M. (2015, October). *Why are incest offenders less likely to recidivate?* Poster presented at the 34th annual meeting of the Association for the Treatment of Sexual Abusers, Montréal, Canada.
3. Seto, M. C., Stephens, S. M., Cantor, J. M., Lalumiere, M. L., Sandler, J. C., & Freeman, N. A. (2015, August). *The development and validation of the Revised Screening Scale for Pedophilic Interests (SSPI-2).* Poster presentation at the 41st annual meeting of the International Academy of Sex Research. Toronto, Canada.
4. Soh, D. W., & Cantor, J. M. (2015, August). *A peek inside a furry convention.* Poster presentation at the 41st annual meeting of the International Academy of Sex Research. Toronto, Canada.
5. VanderLaan, D. P., Lobaugh, N. J., Chakravarty, M. M., Patel, R., Chavez, S. Stojanovski, S. O., Takagi, A., Hughes, S. K., Wasserman, L., Bain, J., Cantor, J. M., & Zucker, K. J. (2015, August). *The neurohormonal hypothesis of gender dysphoria: Preliminary evidence of cortical surface area differences in adolescent natal females.* Poster presentation at the 31st annual meeting of the International Academy of Sex Research. Toronto, Canada.
6. Cantor, J. M., Lafaille, S. J., Moayedi, M., Mikulis, D. M., & Girard, T. A. (2015, June). *Diffusion tensor imaging (DTI) of the brain in pedohebephilic men: Preliminary analyses.* Harvey Stancer Research Day, Toronto, Ontario Canada.
7. Newman, J. E., Stephens, S., Seto, M. C., & Cantor, J. M. (2014, October). *The validity of the Static-99 in sexual offenders with low intellectual abilities.* Poster presentation at the 33rd annual meeting of the Association for the Treatment of Sexual Abusers, San Diego, CA.
8. Lykins, A. D., Walton, M. T., & Cantor, J. M. (2014, June). *An online assessment of personality, psychological, and sexuality trait variables associated with self-reported hypersexual behavior.* Poster presentation at the 30th annual meeting of the International Academy of Sex Research, Dubrovnik, Croatia.
9. Stephens, S., Seto, M. C., Cantor, J. M., Goodwill, A. M., & Kuban, M. (2013, November). *The utility of phallometry in the assessment of hebephilia.* Poster presented at the 32nd annual meeting of the Association for the Treatment of Sexual Abusers, Chicago.
10. Stephens, S., Seto, M. C., Cantor, J. M., Goodwill, A. M., & Kuban, M. (2013, October). *The role of hebephilic sexual interests in sexual victim choice.* Poster presented at the 32nd annual meeting of the Association for the Treatment of Sexual Abusers, Chicago.
11. Fazio, R. L., & Cantor, J. M. (2013, October). *Analysis of the Fazio Laterality Inventory (FLI) in a population with established atypical handedness.* Poster presented at the 33rd annual meeting of the National Academy of Neuropsychology, San Diego.
12. Lafaille, S., Hannah, J., Soh, D., Kucyi, A., Girard, T. A., Mikulis, D. M., & Cantor, J. M. (2013, August). *Investigating resting state networks in pedohebephiles.* Poster presented at the 29th annual meeting of the International Academy of Sex Research, Chicago.

13. McPhail, I. V., Lykins, A. D., Robinson, J. J., LeBlanc, S., & Cantor, J. M. (2013, August). *Effects of prescription medication on volumetric phallometry output.* Poster presented at the 29th annual meeting of the International Academy of Sex Research, Chicago.
14. Murray, M. E., Dyshniku, F., Fazio, R. L., & Cantor, J. M. (2013, August). *Minor physical anomalies as a window into the prenatal origins of pedophilia.* Poster presented at the 29th annual meeting of the International Academy of Sex Research, Chicago.
15. Sutton, K. S., Stephens, S., Dyshniku, F., Tulloch, T., & Cantor, J. M. (2013, August). *Pilot group treatment for "procrasturbation."* Poster presented at 39th annual meeting of the International Academy of Sex Research, Chicago.
16. Sutton, K. S., Pytyck, J., Stratton, N., Sylva, D., Kolla, N., & Cantor, J. M. (2013, August). *Client characteristics by type of hypersexuality referral: A quantitative chart review.* Poster presented at the 39th annual meeting of the International Academy of Sex Research, Chicago.
17. Fazio, R. L., & Cantor, J. M. (2013, June). *A replication and extension of the psychometric properties of the Digit Vigilance Test.* Poster presented at the 11th annual meeting of the American Academy of Clinical Neuropsychology, Chicago.
18. Lafaille, S., Moayedi, M., Mikulis, D. M., Girard, T. A., Kuban, M., Blak, T., & Cantor, J. M. (2012, July). *Diffusion Tensor Imaging (DTI) of the brain in pedohebephilic men: Preliminary analyses.* Poster presented at the 38th annual meeting of the International Academy of Sex Research, Lisbon, Portugal.
19. Lykins, A. D., Cantor, J. M., Kuban, M. E., Blak, T., Dickey, R., Klassen, P. E., & Blanchard, R. (2010, July). *Sexual arousal to female children in gynephilic men.* Poster presented at the 38th annual meeting of the International Academy of Sex Research, Prague, Czech Republic.
20. Cantor, J. M., Girard, T. A., Lovett-Barron, M., & Blak, T. (2008, July). *Brain regions responding to visual sexual stimuli: Meta-analysis of PET and fMRI studies.* Abstract and poster presented at the 34th annual meeting of the International Academy of Sex Research, Leuven, Belgium.
21. Lykins, A. D., Blanchard, R., Cantor, J. M., Blak, T., & Kuban, M. E. (2008, July). *Diagnosing sexual attraction to children: Considerations for DSM-V.* Poster presented at the 34th annual meeting of the International Academy of Sex Research, Leuven, Belgium.
22. Cantor, J. M., Blak, T., Kuban, M. E., Klassen, P. E., Dickey, R. and Blanchard, R. (2007, October). *Physical height in pedophilia and hebephilia.* Poster presented at the 26th annual meeting of the Association for the Treatment of Sexual Abusers, San Diego.
23. Cantor, J. M., Blak, T., Kuban, M. E., Klassen, P. E., Dickey, R. and Blanchard, R. (2007, August). *Physical height in pedophilia and hebephilia.* Abstract and poster presented at the 33rd annual meeting of the International Academy of Sex Research, Vancouver, Canada.
24. Puts, D. A., Blanchard, R., Cardenas, R., Cantor, J., Jordan, C. L., & Breedlove, S. M. (2007, August). *Earlier puberty predicts superior performance on male-biased visuospatial tasks in men but not women.* Abstract and poster presented at the 33rd annual meeting of the International Academy of Sex Research, Vancouver, Canada.
25. Seto, M. C., Cantor, J. M., & Blanchard, R. (2005, November). *Possession of child pornography is a diagnostic indicator of pedophilia.* Poster presented at the 24th annual meeting of the Association for the Treatment of Sexual Abusers, New Orleans.

26. Blanchard, R., Cantor, J. M., Bogaert, A. F., Breedlove. S. M., & Ellis, L. (2005, July). *Interaction of fraternal birth order and handedness in the development of male homosexuality.* Abstract and poster presented at the 31st annual meeting of the International Academy of Sex Research, Ottawa, Canada.
27. Cantor, J. M., & Blanchard, R. (2003, July). *The reported VIQ–PIQ differences in male sex offenders are artifactual?* Abstract and poster presented at the 29th annual meeting of the International Academy of Sex Research, Bloomington, Indiana.
28. Christensen, B. K., Cantor, J. M., Millikin, C., & Blanchard, R. (2002, February). *Factor analysis of two brief memory tests: Preliminary evidence for modality-specific measurement.* Poster presented at the 30th annual meeting of the International Neuropsychological Society, Toronto, Ontario, Canada.
29. Cantor, J. M., Blanchard, R., Paterson, A., Bogaert, A. (2000, June). *How many gay men owe their sexual orientation to fraternal birth order?* Abstract and poster presented at the International Behavioral Development Symposium, Minot, North Dakota.
30. Cantor, J. M., Binik, Y., & Pfaus, J. G. (1996, November). *Fluoxetine inhibition of male rat sexual behavior: Reversal by oxytocin*. Poster presented at the 26th annual meeting of the Society for Neurosciences, Washington, DC.
31. Cantor, J. M., Binik, Y., & Pfaus, J. G. (1996, June). *An animal model of fluoxetine-induced sexual dysfunction: Dose dependence and time course*. Poster presented at the 28th annual Conference on Reproductive Behavior, Montréal, Canada.
32. Cantor, J. M., O'Connor, M. G., Kaplan, B., & Cermak, L. S. (1993, June). *Transient events test of retrograde memory: Performance of amnestic and unimpaired populations*. Poster presented at the 2nd annual science symposium of the Massachusetts Neuropsychological Society, Cambridge, MA.

EDITORIAL AND PEER-REVIEWING ACTIVITIES

Editor-in-Chief

Sexual Abuse: A Journal of Research and Treatment Jan., 2010–Dec., 2014

Editorial Board Memberships

Journal of Sexual Aggression Jan., 2010–Dec., 2021
Journal of Sex Research, The Jan., 2008–Aug., 2020
Sexual Abuse: A Journal of Research and Treatment Jan., 2006–Dec., 2019
Archives of Sexual Behavior Jan., 2004–Present
The Clinical Psychologist Jan., 2004–Dec., 2005

Peer Reviewer Activity

American Journal of Psychiatry
Annual Review of Sex Research
Archives of General Psychiatry
Assessment
Biological Psychiatry
BMC Psychiatry
Brain Structure and Function
British Journal of Psychiatry
British Medical Journal
Canadian Journal of Behavioural Science
Canadian Journal of Psychiatry
Cerebral Cortex
Clinical Case Studies
Comprehensive Psychiatry
Developmental Psychology
European Psychologist
Frontiers in Human Neuroscience
Human Brain Mapping
International Journal of Epidemiology
International Journal of Impotence Research
International Journal of Sexual Health
International Journal of Transgenderism
Journal of Abnormal Psychology
Journal of Clinical Psychology
Journal of Consulting and Clinical Psychology
Journal of Forensic Psychology Practice
Journal for the Scientific Study of Religion
Journal of Sexual Aggression
Journal of Sexual Medicine
Journal of Psychiatric Research
Nature Neuroscience
Neurobiology Reviews
Neuroscience & Biobehavioral Reviews
Neuroscience Letters
Proceedings of the Royal Society B (Biological Sciences)
Psychological Assessment
Psychological Medicine
Psychological Science
Psychology of Men & Masculinity
Sex Roles
Sexual and Marital Therapy
Sexual and Relationship Therapy
Sexuality & Culture
Sexuality Research and Social Policy
The Clinical Psychologist
Traumatology
World Journal of Biological Psychiatry

GRANT REVIEW PANELS

2024–2025 Member, Multidisciplinary Review Panel, New Frontiers in Research Fund, *Tri-Agency Institutional Programs* (SSHRC/NSRC/CIHR), Canada.

2024 Reviewer. *Narodowe Centrum Nauki* [National Science Center]. Kraków, Poland.

2017–2021 Member, College of Reviewers, *Canadian Institutes of Health Research,* Canada.

2017 Committee Member, Peer Review Committee—Doctoral Research Awards A. *Canadian Institutes of Health Research*, Canada.

2017 Member, International Review Board, Research collaborations on behavioural disorders related to violence, neglect, maltreatment and abuse in childhood and adolescence. *Bundesministerium für Bildung und Forschung [Ministry of Education and Research],* Germany.

2016 Member, Peer Review Committee—Doctoral Research Awards A. *Canadian Institutes of Health Research*, Canada.

2015 Assessor (Peer Reviewer). Discovery Grants Program. *Australian Research Council,* Australia.

2015 Reviewer. *Czech Science Foundation,* Czech Republic.

2015 Reviewer, "Off the beaten track" grant scheme. *Volkswagen Foundation,* Germany.

2015 External Reviewer, Discovery Grants program—Biological Systems and Functions. *National Sciences and Engineering Research Council of Canada*, Canada

2015 Member, Peer Review Committee—Doctoral Research Awards A. *Canadian Institutes of Health Research*, Canada.

2014 Assessor (Peer Reviewer). Discovery Grants Program. *Australian Research Council,* Australia.

2014 External Reviewer, Discovery Grants program—Biological Systems and Functions. *National Sciences and Engineering Research Council of Canada*, Canada.

2014 Member, Dean's Fund—Clinical Science Panel. *University of Toronto Faculty of Medicine*, Canada.

2014 Member, Peer Review Committee—Doctoral Research Awards A. *Canadian Institutes of Health Research*, Canada.

2013 Member, Grant Miller Cancer Research Grant Panel. *University of Toronto Faculty of Medicine*, Canada.

2013 Member, Dean of Medicine Fund New Faculty Grant Clinical Science Panel. *University of Toronto Faculty of Medicine,* Canada.

2012 Board Member, International Review Board, Research collaborations on behavioural disorders related to violence, neglect, maltreatment and abuse in childhood and adolescence (2nd round). *Bundesministerium für Bildung und Forschung [Ministry of Education and Research],* Germany.

2012 External Reviewer, University of Ottawa Medical Research Fund. *University of Ottawa Department of Psychiatry*, Canada.

2012 External Reviewer, Behavioural Sciences—B. *Canadian Institutes of Health Research*, Canada.

2011 Board Member, International Review Board, Research collaborations on behavioural disorders related to violence, neglect, maltreatment and abuse in childhood and adolescence. *Bundesministerium für Bildung und Forschung [Ministry of Education and Research],* Germany.

TEACHING AND TRAINING

PostDoctoral Research Supervision
Law & Mental Health Program, Centre for Addiction and Mental Health, Toronto, Canada

Dr. Katherine S. Sutton	Sept., 2012–Dec., 2013
Dr. Rachel Fazio	Sept., 2012–Aug., 2013
Dr. Amy Lykins	Sept., 2008–Nov., 2009

Doctoral Research Supervision
Centre for Addiction and Mental Health, Toronto, Canada

Michael Walton • University of New England, Australia	Sept., 2017–Aug., 2018
Debra Soh • York University	May, 2013–Aug, 2017
Skye Stephens • Ryerson University	April, 2012–June, 2016

Masters Research Supervision
Centre for Addiction and Mental Health, Toronto, Canada

Nicole Cormier • Ryerson University	June, 2012–present
Debra Soh • Ryerson University	May, 2009–April, 2010

Undergraduate Research Supervision
Centre for Addiction and Mental Health, Toronto, Canada

Kylie Reale • Ryerson University	Spring, 2014
Jarrett Hannah • University of Rochester	Summer, 2013
Michael Humeniuk • University of Toronto	Summer, 2012

Clinical Supervision (Doctoral Internship)
Clinical Internship Program, Centre for Addiction and Mental Health, Toronto, Canada

Katherine S. Sutton • Queen's University	2011–2012
David Sylva • Northwestern University	2011–2012
Jordan Rullo • University of Utah	2010–2011
Lea Thaler • University of Nevada, Las Vegas	2010–2011
Carolin Klein • University of British Columbia	2009–2010
Bobby R. Walling • University of Manitoba	2009–2010

TEACHING AND TRAINING

Clinical Supervision (Doctoral- and Masters- level practica)
Centre for Addiction and Mental Health, Toronto, Canada

Tyler Tulloch • Ryerson University	2013–2014
Natalie Stratton • Ryerson University	Summer, 2013
Fiona Dyshniku • University of Windsor	Summer, 2013
Mackenzie Becker • McMaster University	Summer, 2013
Skye Stephens • Ryerson University	2012–2013
Vivian Nyantakyi • Capella University	2010–2011
Cailey Hartwick • University of Guelph	Fall, 2010
Tricia Teeft • Humber College	Summer, 2010
Allison Reeves • Ontario Institute for Studies in Education/Univ. of Toronto	2009–2010
Helen Bailey • Ryerson University	Summer, 2009
Edna Aryee • Ontario Institute for Studies in Education/Univ. of Toronto	2008–2009
Iryna Ivanova • Ontario Institute for Studies in Education/Univ. of Toronto	2008–2009
Jennifer Robinson • Ontario Institute for Studies in Education/Univ. of Toronto	2008–2009
Zoë Laksman • Adler School of Professional Psychology	2005–2006
Diana Mandelew • Adler School of Professional Psychology	2005–2006
Susan Wnuk • York University	2004–2005
Hiten Lad • Adler School of Professional Psychology	2004–2005
Natasha Williams • Adler School of Professional Psychology	2003–2004
Lisa Couperthwaite • Ontario Institute for Studies in Education/Univ. of Toronto	2003–2004
Lori Gray, née Robichaud • University of Windsor	Summer, 2003
Sandra Belfry • Ontario Institute for Studies in Education/Univ. of Toronto	2002–2003
Althea Monteiro • York University	Summer, 2002
Samantha Dworsky • York University	2001–2002
Kerry Collins • University of Windsor	Summer, 2001
Jennifer Fogarty • Waterloo University	2000–2001
Emily Cripps • Waterloo University	Summer, 2000
Lee Beckstead • University of Utah	2000

PROFESSIONAL SOCIETY ACTIVITIES

OFFICES HELD

2018–2019	Local Host. Society for Sex Therapy and Research.
2015	Member, International Scientific Committee, World Association for Sexual Health.
2015	Member, Program Planning and Conference Committee, Association for the Treatment of Sexual Abusers
2012–2013	Chair, Student Research Awards Committee, Society for Sex Therapy & Research
2012–2013	Member, Program Planning and Conference Committee, Association for the Treatment of Sexual Abusers
2011–2012	Chair, Student Research Awards Committee, Society for Sex Therapy & Research
2010–2011	Scientific Program Committee, International Academy of Sex Research
2002–2004	Membership Committee • APA Division 12 (Clinical Psychology)
2002–2003	Chair, Committee on Science Issues, APA Division 44
2002	Observer, Grant Review Committee • Canadian Institutes of Health Research Behavioural Sciences (B)
2001–2009	Reviewer • APA Division 44 Convention Program Committee
2001, 2002	Reviewer • APA Malyon-Smith Scholarship Committee
2000–2005	Task Force on Transgender Issues, APA Division 44
1998–1999	Consultant, APA Board of Directors Working Group on Psychology Marketplace
1997	Student Representative • APA Board of Professional Affairs' Institute on TeleHealth
1997–1998	Founder and Chair • APA/APAGS Task Force on New Psychologists' Concerns
1997–1999	Student Representative • APA/CAPP Sub-Committee for a National Strategy for Prescription Privileges
1997–1999	Liaison • APA Committee for the Advancement of Professional Practice
1997–1998	Liaison • APA Board of Professional Affairs
1993–1997	Founder and Chair • APA/APAGS Committee on LGB Concerns

PROFESSIONAL SOCIETY ACTIVITIES

MEMBERSHIPS

2022–2024 Consultant • *Society for the Advancement of Actuarial Risk Needs Assessment* (SAARNA)

2017–2021 Member • *Canadian Sex Research Forum*

2009–Present Member • *Society for Sex Therapy and Research*

2007–Present Fellow • *Association for the Treatment and Prevention of Sexual Abuse*

2006–Present Full Member (elected) • *International Academy of Sex Research*

2006–Present Research and Clinical Member • *Association for the Treatment and Prevention of Sexual Abuse*

2003–2006 Associate Member (elected) • *International Academy of Sex Research*

2002 Founding Member • CPA Section on Sexual Orientation and Gender Identity

2001–2013 Member • *Canadian Psychological Association* (CPA)

2000–2015 Member • *American Association for the Advancement of Science*

2000–2015 Member • *American Psychological Association* (APA)

APA Division 12 (Clinical Psychology)

APA Division 44 (Society for the Psychological Study of LGB Issues)

2000–2020 Member • *Society for the Scientific Study of Sexuality*

1995–2000 Student Member • *Society for the Scientific Study of Sexuality*

1993–2000 Student Affiliate • *American Psychological Association*

1990–1999 Member, American Psychological Association of Graduate Students (APAGS)

CLINICAL LICENSURE/REGISTRATION

Certificate of Registration, Number 3793
College of Psychologists of Ontario, Ontario, Canada

AWARDS AND HONORS

2022 Distinguished Contribution Award
Association for the Treatment and Prevention of Sexual Abuse (ATSA)

2011 Howard E. Barbaree Award for Excellence in Research
Centre for Addiction and Mental Health, Law and Mental Health Program

2004 fMRI Visiting Fellowship Program at Massachusetts General Hospital
American Psychological Association Advanced Training Institute and NIH

1999–2001 CAMH Post-Doctoral Research Fellowship
Centre for Addiction and Mental Health Foundation and Ontario Ministry of Health

1998 Award for Distinguished Contribution by a Student
American Psychological Association, Division 44

1995 Dissertation Research Grant
Society for the Scientific Study of Sexuality

1994–1996 McGill University Doctoral Scholarship

1994 Award for Outstanding Contribution to Undergraduate Teaching
"TA of the Year Award," from the McGill Psychology Undergraduate Student Association

MEDIA APPEARANCES

DOCUMENTARY FILM

10 Jan 2017. *Age of Consent.* Vice Canada Reports. https://topdocumentaryfilms.com/age-consent/

10 Mar 2016. *I, Pedophile.* Firsthand documentaries. *CBC-TV.* http://www.cbc.ca/firsthand/episodes/i-pedophile

I, Pedophile Festival Version
https://vimeo.com/181331200/23d324a611
Password: cb-screener

CSA nomination, Donald Brittain Award for Best Social/Political Documentary Program: http://www.academy.ca/2017/i-pedophile/

PROFESSIONAL TRAINING VIDEO

Cantor, James M. (2017). Understanding pedophilia and the brain. ATSA Master Class training course. http://atsa-training.com/course/understanding-pedophilia-and-the-brain/

MEDIA APPEARANCES

24 Sept 2024. How expert medical witnesses and health misinformation are fueling the debate around trans kids access to healthcare. *UnclosedMedia.com* https://www.unclosetedmedia.com/p/how-expert-medical-witnesses-and?utm_source=publication-search

10 Apr 2024 . The clinical science behind pedophilia. *Bound by the Cloak.* https://www.youtube.com/watch?v=QF8lJew4Kew

19 Oct 2023. Why a gay Toronto psychologist helps U.S. states ban gender-affirming care. *CBC News, The National.* https://www.youtube.com/watch?app=desktop&v=___0gKgJJLE

11 August 2023. Is paedophilia in the brain from birth? *The Something to Say Podcast.* https://shows.acast.com/the-something-to-say-podcast/episodes/interview-is-paedophilia-in-the-brain-from-birth

3 July 2023. Dr. James Cantor explores fetishes, fantasies, and social media's impact on sexual diversity. *Life in Red.* https://www.youtube.com/watch?v=106xjvjQt7Q

30 June 2023. Researching sexual behaviors with Dr. James Cantor. *A Wider Lens.* https://www.youtube.com/watch?v=yxwazu_eIyQ

23 March 2023. Exploring the complexities of sexual orientation. The Jordan Harbinger Show. https://www.podcastone.com/episode/815-James-Cantor--Exploring-the-Complexities-of-Sexual-Orientation

19 Feb 2023 Podofilia: El fetichismo por los pies convertido en negocio [Podophilia: Foot fetishism turned into business] *El Dia.* https://www.eldia.com/nota/2023-2-19-7-52-42-podofilia-el-fetichismo-por-los-pies-convertido-en-negocio-toda-la-semana

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5 Jan 2023. How Canadian schools aid students' gender transition without family consent. *National Post.* https://nationalpost.com/news/schools-consent-transgender-gender-transition

10 Nov 2022. A world of unusual sexual orientations. *Modern Wisdom Podcast, with Chris Williamson.* https://www.youtube.com/watch?v=vqdlv3qEuyY

28 Sept 2022. https://www.commonsense.news/p/how-young-is-too-young-for-sterilization?utm_source=post-email-title&publication_id=260347&post_id=75317590&isFreemail=true&utm_medium=email

6 June 2022. Where our sexual attractions and identities come from: Dr. James Cantor. *On the Edge w/ Andrew Gold.* https://www.youtube.com/watch?v=Lzr7G9WPZ8w

9 May 2022. Are there mental health concerns about kids transitioning? *The Doctors.* https://www.youtube.com/watch?v=_kNcgUKOGFc

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EXPERT WITNESS TESTIMONY
(PAST 4 YEARS)

JOSEPHSON v University of Kentucky
Case No: 3:19-cv-00230-RGJ
Kentucky Western District, Louisville Division

BOE et al., USA v Marshall
Civil Action No. 2:22-cv-00184- LCB
U.S. District Court, Middle Dist of Alabama, Northern Div.

PFLAG, et al. v ABBOTT
No. D-1-GN-22-002569
Texas, Travis County District Court

KOE, et al., v. Noggle, et al.
Civil Action No. 1:23-cv-02904-SEG
U.S. District Court, Northern Dist of Georgia, Atlanta Div

LOE v Texas
Cause No. D-1-GN-23-003616
201st Judicial District, Travis County, Texas

HAMM v B.C. College of Nurses and Midwives
Citation issued under Health Professional Act
British Columbia, CANADA

TD, et al. v Wrigley, et al.
Case No. 08-2023-CV-2189
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Moe, et al. v Yost, et al.
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JOURNAL OF SEX & MARITAL THERAPY
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https://doi.org/10.1080/0092623X.2019.1698481

Transgender and Gender Diverse Children and Adolescents: Fact-Checking of AAP Policy

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ABSTRACT

The American Academy of Pediatrics (AAP) recently published a policy statement: *Ensuring comprehensive care and support for transgender and gender-diverse children and adolescents*. Although almost all clinics and professional associations in the world use what's called the *watchful waiting* approach to helping gender diverse (GD) children, the AAP statement instead rejected that consensus, endorsing *gender affirmation* as the only acceptable approach. Remarkably, not only did the AAP statement fail to include any of the actual outcomes literature on such cases, but it also misrepresented the contents of its citations, which repeatedly said the very opposite of what AAP attributed to them.

The American Academy of Pediatrics (AAP) recently published a policy statement entitled, *Ensuring comprehensive care and support for transgender and gender-diverse children and adolescents* (Rafferty, AAP Committee on Psychosocial Aspects of Child and Family Health, AAP Committee on Adolescence, AAP Section on Lesbian, Gay, Bisexual, and Transgender Health and Wellness, 2018). These are children who manifest discontent with the sex they were born as and desire to live as the other sex (or as some alternative gender role). The policy was quite a remarkable document: Although almost all clinics and professional associations in the world use what's called the *watchful waiting* approach to helping transgender and gender diverse (GD) children, the AAP statement rejected that consensus, endorsing only *gender affirmation.* That is, where the consensus is to delay any transitions after the onset of puberty, AAP instead rejected waiting before transition. With AAP taking such a dramatic departure from other professional associations, I was immediately curious about what evidence led them to that conclusion. As I read the works on which they based their policy, however, I was pretty surprised—rather alarmed, actually: These documents simply did not say what AAP claimed they did. In fact, the references that AAP cited as the basis of their policy instead outright contradicted that policy, repeatedly endorsing *watchful waiting*.

The AAP statement was also remarkable in what it left out—namely, the actual outcomes research on GD children. In total, there have been 11 follow-up studies of GD children, of which AAP cited one (Wallien & Cohen-Kettenis, 2008), doing so without actually mentioning the outcome data it contained. The literature on outcomes was neither reviewed, summarized, nor subjected to meta-analysis to be considered in the aggregate—It was merely disappeared. (The list of all existing studies appears in the appendix.) As they make clear, *every* follow-up study of GD children, without exception, found the same thing: Over puberty, the majority of GD children cease to want to transition. AAP is, of course, free to establish whatever policy it likes on

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whatever basis it likes. But any assertion that their policy is based on evidence is demonstrably false, as detailed below.

AAP divided clinical approaches into three types—conversion therapy, watchful waiting, and gender affirmation. It rejected the first two and endorsed *gender affirmation* as the only acceptable alternative. Most readers will likely be familiar already with attempts to use conversion therapy to change sexual orientation. With regard to gender identity, AAP wrote:

> "[C]onversion" or "reparative" treatment models are used to prevent children and adolescents from identifying as transgender or to dissuade them from exhibiting gender-diverse expressions. … Reparative approaches have been proven to be not only unsuccessful[38] but also deleterious and are considered outside the mainstream of traditional medical practice.[29,39–42]

The citations were:

38. Haldeman DC. The practice and ethics of sexual orientation conversion therapy. *J Consult Clin Psychol.* 1994;62(2):221–227.

29. Adelson SL; American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI). Practice parameter on gay, lesbian, or bisexual sexual orientation, gender nonconformity, and gender discordance in children and adolescents. *J Am Acad Child Adolesc Psychiatry.* 2012;51(9):957–974.

39. Byne W. Regulations restrict practice of conversion therapy. *LGBT Health.* 2016;3(2):97–99.

40. Cohen-Kettenis PT, Delemarrevan de Waal HA, Gooren LJ. The treatment of adolescent transsexuals: changing insights. *J Sex Med.* 2008;5(8):1892–1897.

41. Bryant K. Making gender identity disorder of childhood: historical lessons for contemporary debates. *Sex Res Soc Policy.* 2006;3(3):23–39.

42. World Professional Association for Transgender Health. *WPATH De-Psychopathologisation Statement.* Minneapolis, MN: World Professional Association for Transgender Health; 2010.

AAP's claims struck me as odd because *there are no studies of conversion therapy for gender identity.* Studies of conversion therapy have been limited to *sexual orientation,* and, moreover, to the sexual orientation *of adults,* not to gender identity and not of children in any case. The article AAP cited to support their claim (reference number 38) is indeed a classic and well-known review, but it is a review of sexual orientation research *only.* Neither gender identity, nor even children, received a single mention in it. Indeed, the narrower scope of that article should be clear to anyone reading even just its title: "The practice and ethics of *sexual orientation* conversion therapy" [italics added].

AAP continued, saying that conversion approaches for GD children have already been rejected by medical consensus, citing five sources. This claim struck me as just as odd, however—I recalled associations banning conversion therapy for sexual orientation, but not for gender identity, exactly because there is no evidence for generalizing from adult sexual orientation to childhood gender identity. So, I started checking AAP's citations for that, and these sources too pertained only to sexual orientation, not gender identity (specifics below). What AAP's sources *did* repeatedly emphasize was that:

A. Sexual orientation of adults is unaffected by conversion therapy and any other [known] intervention;
B. Gender dysphoria in childhood before puberty desists in the majority of cases, becoming (cis-gendered) homosexuality in adulthood, again regardless of any [known] intervention; and
C. Gender dysphoria in childhood persisting after puberty tends to persist entirely.

That is, in the context of GD children, it simply makes no sense to refer to externally induced "conversion": The majority of children "convert" to cisgender or "desist" from transgender

regardless of any attempt to change them. "Conversion" only makes sense with regard to adult sexual orientation because (unlike childhood gender identity), adult homosexuality never or nearly never spontaneously changes to heterosexuality. Although gender identity and sexual orientation may often be analogous and discussed together with regard to social or political values and to civil rights, they are nonetheless distinct—with distinct origins, needs, and responses to medical and mental health care choices. Although AAP emphasized to the reader that "gender identity is not synonymous with 'sexual orientation'" (Rafferty et al., 2018, p. 3), they went ahead to treat them as such nonetheless.

To return to checking AAP's fidelity to its sources: Reference 29 was a practice guideline from the Committee on Quality Issues of the American Academy of Child and Adolescent Psychiatry (AACAP). Despite AAP applying this source to *gender identity,* AACAP was quite unambiguous regarding their intent to speak to sexual orientation and *only* to sexual orientation: "Principle 6. Clinicians should be aware that there is no evidence that *sexual orientation* can be altered through therapy, and that attempts to do so may be harmful. There is no established evidence that change in a predominant, enduring *homosexual* pattern of development is possible. Although sexual fantasies can, to some degree, be suppressed or repressed by those who are ashamed of or in conflict about them, sexual desire is not a choice. However, behavior, social role, and—to a degree—identity and self-acceptance are. Although operant conditioning modifies sexual fetishes, it does not alter *homosexuality*. Psychiatric efforts to alter *sexual orientation* through 'reparative therapy' *in adults* have found little or no change in *sexual orientation,* while causing significant risk of harm to self-esteem" (AACAP, 2012, p. 967, italics added).

Whereas AAP cites AACAP to support gender affirmation as the only alternative for treating GD children, AACAP's actual view was decidedly neutral, noting the lack of evidence: "Given the lack of empirical evidence from randomized, controlled trials of the efficacy of treatment aimed at eliminating gender discordance, the potential risks of treatment, and longitudinal evidence that gender discordance persists in only a small minority of untreated cases arising in childhood, further research is needed on predictors of persistence and desistence of childhood gender discordance as well as the long-term risks and benefits of intervention before any treatment to eliminate gender discordance can be endorsed" (AACAP, 2012, p. 969). Moreover, whereas AAP rejected watchful waiting, what AACAP recommended was: "In general, it is desirable to help adolescents who may be experiencing gender distress and dysphoria to defer sex reassignment until adulthood" (AACAP, 2012, p. 969). So, not only did AAP attribute to AACAP something AACAP never said, but also AAP withheld from readers AACAP's actual view.

Next, in reference 39, Byne (2016) also addressed only sexual orientation, doing so very clearly: "Reparative therapy is a subset of conversion therapies based on the premise that *same-sex attraction* are reparations for childhood trauma. Thus, practitioners of reparative therapy believe that exploring, isolating, and repairing these childhood emotional wounds will often result in reducing *same-sex attractions*" (Byne, 2016, p. 97). Byne does not say this of gender identity, as the AAP statement misrepresents.

In AAP reference 40, Cohen-Kettenis et al. (2008) did finally pertain to gender identity; however, this article never mentions conversion therapy. (!) Rather, in this study, the authors presented that clinic's lowering of their minimum age for cross-sex hormone treatment from age 18 to 16, which they did on the basis of a series of studies showing the high rates of success with this age group. Although it did strike me as odd that AAP picked as support against conversion therapy an article that did not mention conversion therapy, I could imagine AAP cited the article as an example of what the "mainstream of traditional medical practice" consists of (the logic being that conversion therapy falls outside what an 'ideal' clinic like this one provides). However, what this clinic provides is the very *watchful waiting* approach that AAP rejected. The approach

espoused by Cohen-Kettenis (and the other clinics mentioned in the source—Gent, Boston, Oslo, and now formerly, Toronto) is to make puberty-halting interventions available at age 12 because: "[P]ubertal suppression may give adolescents, together with the attending health professional, more time to explore their gender identity, without the distress of the developing secondary sex characteristics. The precision of the diagnosis may thus be improved" (Cohen-Kettenis et al., 2008, p. 1894).

Reference 41 presented a very interesting history spanning the 1960s–1990s about how feminine boys and tomboyish girls came to be recognized as mostly pre-homosexual, and how that status came to be entered into the DSM at the same time as homosexuality was being *removed* from the DSM. Conversion therapy is never mentioned. Indeed, to the extent that Bryant mentions treatment at all, it is to say that treatment is entirely irrelevant to his analysis: "An important omission from the *DSM* is a discussion of the kinds of treatment that GIDC children should receive. (This omission is a general orientation of the DSM and not unique to GIDC)" (Bryant, 2006, p. 35). How this article supports AAP's claim is a mystery. Moreover, how AAP could cite a 2006 history discussing events of the 1990s and earlier to support a claim about the *current* consensus in this quickly evolving discussion remains all the more unfathomable.

Cited last in this section was a one-paragraph press release from the World Professional Association for Transgender Health. Written during the early stages of the American Psychiatric Association's (APA's) update of the DSM, the statement asserted simply that "The WPATH Board of Directors strongly urges the de-psychopathologisation of gender variance worldwide." Very reasonable debate can (and should) be had regarding whether gender dysphoria should be removed from the DSM as homosexuality was, and WPATH was well within its purview to assert that it should. Now that the DSM revision process is years completed however, history has seen that APA ultimately retained the diagnostic categories, rejecting WPATH's urging. This makes AAP's logic entirely backwards: That WPATH's request to depathologize gender dysphoria was *rejected* suggests that it is *WPATH's* view—and therefore the AAP policy—which fall "outside the mainstream of traditional medical practice." (!)

AAP based this entire line of reasoning on their belief that conversion therapy is being used "to prevent children and adolescents from identifying as transgender" (Rafferty et al., 2018, p. 4). That claim is left without citation or support. In contrast, what is said by AAP's sources is "delaying affirmation should *not* be construed as conversion therapy or an attempt to change gender identity" in the first place (Byne, 2016, p. 2). Nonetheless, AAP seems to be doing exactly that: simply relabeling any alternative approach as equivalent to conversion therapy.

Although AAP (and anyone else) may reject (what they label to be) conversion therapy purely on the basis of political or personal values, there is no evidence to back the AAP's stated claim about the existing science on gender identity at all, never mind gender identity of children.

AAP also dismissed the watchful waiting approach out of hand, not citing any evidence, but repeatedly calling it "outdated." The criticisms AAP provided, however, again defied the existing evidence, with even its own sources repeatedly calling watchful waiting the current standard. According to AAP:

> [G]ender affirmation is in contrast to the outdated approach in which a child's gender-diverse assertions are held as "possibly true" until an arbitrary age (often after pubertal onset) when they can be considered valid, an approach that authors of the literature have termed "watchful waiting." This outdated approach does not serve the child because critical support is withheld. Watchful waiting is based on binary notions of gender in which gender diversity and fluidity is pathologized; in watchful waiting, it is also assumed that notions of gender identity become fixed at a certain age. The approach is also influenced by a group of early studies with validity concerns, methodologic flaws, and limited follow-up on children who identified as TGD and, by adolescence, did not seek further treatment ("desisters").[45,47]

The citations from AAP's reference list are:

45. Ehrensaft D, Giammattei SV, Storck K, Tishelman AC, Keo-Meier C. Prepubertal social gender transitions: what we know; what we can learn—a view from a gender affirmative lens. *Int J Transgend.* 2018;19(2):251–268

47. Olson KR. Prepubescent transgender children: what we do and do not know. *J Am Acad Child Adolesc Psychiatry.* 2016;55(3):155–156.e3

I was surprised first by the AAP's claim that watchful waiting's delay to puberty was somehow "arbitrary." The literature, including AAP's sources, repeatedly indicated the pivotal importance of puberty, noting that outcomes strongly diverge at that point. According to AAP reference 29, in "*prepubertal* boys with gender discordance—including many without any mental health treatment—the cross gender wishes usually fade over time and do not persist into adulthood, with only 2.2% to 11.9% continuing to experience gender discordance" (Adelson & AACAP, 2012, p. 963, italics added), whereas "when gender variance with the desire to be the other sex is present *in adolescence,* this desire usually does persist through adulthood" (Adelson & AACAP, 2012, p. 964, italics added). Similarly, according to AAP reference 40, "Symptoms of GID *at prepubertal ages* decrease or even disappear in a considerable percentage of children (estimates range from 80–95%). Therefore, any intervention in childhood would seem premature and inappropriate. However, GID persisting *into early puberty* appears to be highly persistent" (Cohen-Kettenis et al., 2008, p. 1895, italics added). That follow-up studies of prepubertal transition differ from postpubertal transition is the very meaning of non-arbitrary. AAP gave readers exactly the reverse of what was contained in its own sources. If AAP were correct in saying that puberty is an arbitrarily selected age, then AAP will be able to offer another point to wait for with as much empirical backing as puberty has.

Next, it was not clear on what basis AAP could say that watchful waiting withholds support—AAP cited no support for its claim. The people in such programs often receive substantial support during this period. Also unclear is on what basis AAP could already know exactly which treatments are "critical" and which are not—Answering that question is the very purpose of this entire endeavor. Indeed, the logic of AAP's claim appears entirely circular: It is only if one were already pre-convinced that gender affirmation is the only acceptable alternative that would make watchful waiting seem to withhold critical support—What it delays is gender affirmation, the method one has already decided to be critical.

Although AAP's next claim did not have a citation appearing at the end of its sentence, binary notions of gender were mentioned both in references 45 and 47. Specifically, both pointed out that existing outcome studies have been about people transitioning from one sex to the other, rather than from one sex to an in-between status or a combination of masculine/feminine features. Neither reference presented this as a reason to reject the results from the existing studies of complete transition however (which is how AAP cast it). Although it is indeed true that the outcome data have been about complete transition, some future study showing that partial transition shows a different outcome would not invalidate what is known about complete transition. Indeed, data showing that partial transition gives better outcomes than complete transition would, once again, support the watchful waiting approach which AAP rejected.

Next was a vague reference alleging concerns and criticisms about early studies. Had AAP indicated what those alleged concerns and flaws were (or which studies they were), then it would be possible to evaluate or address them. Nonetheless, the argument is a red herring: Because all of the later studies showed the same result as did the early studies, any such allegation is necessarily moot.

Reference 47 was a one-and-a-half page commentary in which the author off-handedly mentions criticisms previously made of three of the eleven outcome studies of GD children, but does not provide any analysis or discussion. The only specific claim was that studies (whether early or late) had limited follow-up periods—the logic being that had outcome researchers lengthened the follow-up period, then people who seemed to have desisted might have returned to the clinic as

cases of "persistence-after-interruption." Although one could debate the merits of that prediction, AAP instead simply withheld from the reader the result from the original researchers having tested that very prediction directly: Steensma and Cohen-Kettenis (2015) conducted another analysis of their cohort, by then ages 19–28 (mean age 25.9 years), and found that 3.3% (5 people of the sample of 150) later returned. That is, in long-term follow-up, the childhood sample showed 66.7% desistence instead of 70.0% desistance.

Reference 45 did not support the claim that watchful-waiting is "outdated" either. Indeed, that source said the very opposite, explicitly referring to watchful waiting as the *current* approach: "Put another way, if clinicians are straying from SOC 7 guidelines for social transitions, not abiding by the watchful waiting model *favored by the standards,* we will have adolescents who have been consistently living in their affirmed gender since age 3, 4, or 5" (Ehrensaft et al., 2018, p. 255). Moreover, Ehrensaft et al. said there are cases in which they too would still use watchful waiting: "When a child's gender identity is unclear, the watchful waiting approach can give the child and their family time to develop a clearer understanding and is not necessarily in contrast to the needs of the child" (p. 259). Ehrensaft et al. are indeed critical of the watchful waiting model (which they feel is applied too conservatively), but they do not come close to the position the AAP policy espouses. Where Ehrensaft summaries the potential benefits and potential risks both to transitioning and not transitioning, the AAP presents an ironically binary narrative.

In its policy statement, AAP told neither the truth nor the whole truth, committing sins both of commission and of omission, asserting claims easily falsified by anyone caring to do any fact-checking at all. AAP claimed, "This policy statement is focused specifically on children and youth that identify as TGD rather than the larger LGBTQ population"; however, much of that evidence was about sexual orientation, not gender identity. AAP claimed, "Current available research and expert opinion from clinical and research leaders … will serve as the basis for recommendations" (pp. 1–2); however, they provided recommendations entirely unsupported and even in direct opposition to that research and opinion.

AAP is advocating for something far in excess of mainstream practice and medical consensus. In the presence of compelling evidence, that is just what is called for. The problems with Rafferty, however, do not constitute merely a misquote, a misinterpretation of an ambiguous statement, or a missing reference or two. Rather, AAP's statement is a systematic exclusion and misrepresentation of entire literatures. Not only did AAP fail to provide compelling evidence, it failed to provide the evidence at all. Indeed, AAP's recommendations are *despite* the existing evidence.

Disclosure statement

No potential conflict of interest was reported by the author.

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Appendix

Count	Group	Study
2/16 4/16 10/16	gay* trans-/crossdress straight*/uncertain	Lebovitz, P. S. (1972). Feminine behavior in boys: Aspects of its outcome. *American Journal of Psychiatry, 128,* 1283–1289.
2/16 2/16 12/16	trans- uncertain gay	Zuger, B. (1978). Effeminate behavior present in boys from childhood: Ten additional years of follow-up. *Comprehensive Psychiatry, 19,* 363–369.
0/9 9/9	trans- gay	Money, J., & Russo, A. J. (1979). Homosexual outcome of discordant gender identity/role: Longitudinal follow-up. *Journal of Pediatric Psychology, 4,* 29–41.
2/45 10/45 33/45	trans-/crossdress uncertain gay	Zuger, B. (1984). Early effeminate behavior in boys: Outcome and significance for homosexuality. *Journal of Nervous and Mental Disease, 172,* 90–97.
1/10 2/10 3/10 4/10	trans- gay uncertain straight	Davenport, C. W. (1986). A follow-up study of 10 feminine boys. *Archives of Sexual Behavior, 15,* 511–517.
1/44 43/44	trans- cis-	Green, R. (1987). *The "sissy boy syndrome" and the development of homosexuality*. New Haven, CT: Yale University Press.
0/8 8/8	trans- cis-	Kosky, R. J. (1987). Gender-disordered children: Does inpatient treatment help? *Medical Journal of Australia, 146,* 565–569.
21/54 33/54	trans- cis-	Wallien, M. S. C., & Cohen-Kettenis, P. T. (2008). Psychosexual outcome of gender-dysphoric children. *Journal of the American Academy of Child and Adolescent Psychiatry, 47,* 1413–1423.
3/25 6/25 16/25	trans- lesbian/bi- straight	Drummond, K. D., Bradley, S. J., Badali-Peterson, M., & Zucker, K. J. (2008). A follow-up study of girls with gender identity disorder. *Developmental Psychology, 44*, 34–45.
17/139 122/139	trans- cis-	Singh, D. (2012). *A follow-up study of boys with gender identity disorder*. Unpublished doctoral dissertation, University of Toronto.
47/127 80/127	trans- cis-	Steensma, T. D., McGuire, J. K., Kreukels, B. P. C., Beekman, A. J., & Cohen-Kettenis, P. T. (2013). Factors associated with desistence and persistence of childhood gender dysphoria: A quantitative follow-up study. *Journal of the American Academy of Child and Adolescent Psychiatry, 52,* 582–590.

*For brevity, the list uses "gay" for "gay and cis-", "straight" for "straight and cis-", etc.