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POSITION STATEMENT

Mental Health in Adolescents with Incongruence of Gender Identity and Biological Sex

February 2024

ABSTRACT

Adolescents who have a gender identity not congruent with their biological sex have an increased incidence of mental health issues, including depression and suicidal ideation. Both before and after “gender affirming therapy” (GAT), adolescents who have gender-identity incongruence are at higher risk for psychopathology than their peers who identify with their biological sex. Previous adverse childhood experiences may play a major role in that psychopathology and needs to be explored in helping these patients. There are no long-term studies demonstrating benefits nor studies evaluating risks associated with the medical and surgical interventions provided to these adolescents. There is no long-term evidence that mental health concerns are decreased or alleviated after “gender affirming therapy.” Many individuals who have been treated with “GAT” later regret those interventions and seek to align their gender identity with their sex. Because of the risks of social, medical, and surgical interventions, many European countries are now cautioning against these interventions while encouraging mental health therapy.

Introduction

Adolescents who have a gender identity not congruent with their biological sex have an increased incidence of mental health issues, including depression and suicidal ideation. This is particularly serious given the exponential increase in the number of adolescents identifying as “transgender” in the past decade. For example, the CDC reports every two years on data obtained from the Youth Risk Behavior Surveillance Survey, and in their 2015 report, just 11% of adolescents described themselves as bisexual, gay or otherwise questioning. However, by 2021, just six years later, the number had more than doubled to nearly 25%.¹

Terminology

It is difficult to discuss this topic without acknowledging the conflict over terminology. The American Psychological Association defines “gender identity” as “a “person’s deeply-felt, inherent sense of being a boy, a man, or male; a girl, a woman, or female; or an alternative gender which may or may not correspond to a person’s sex assigned [*sic*] at birth or to a person’s primary or secondary sex characteristics.” “Transgender” is defined as an “umbrella term that incorporates differences in gender identity wherein one’s assigned [*sic*] biological sex doesn’t match their felt identity.”² The often severe psychological discomfort that comes with gender identity not matching one’s sex is called gender dysphoria.

To further complicate matters, there are a number of other terms being used to describe an individual's emotions in regards to sexuality including "gender nonconformity," "gender contentedness," and "gender expression."³ Therefore, in this paper, these terms may be used when needed to assure accuracy in reporting.

Both gender identity and transgender refer to thoughts and feelings dependent upon one's emotions as opposed to the biological determination of sex which is based upon the genetic chromosomal composition of the individual. Biological sex is almost always easily identifiable at birth (if not before) based upon phenotypic expression of chromosomal complement. Very rarely, in disorders of sexual development, additional testing may be required to accurately determine sex. To describe sex as "assigned at birth" is inaccurate and misleading.

The American College of Pediatricians (ACPed) affirms the medical fact that the sex of an individual is based upon biology and not upon thoughts or feelings. The individual's sex is encrypted in every diploid cell of the body. Since an individual's biological sex is immutable from the moment of fertilization, it cannot be changed, regardless of hormonal or surgical interventions. Nothing in this paper should be construed to mean the College agrees with or accepts that individuals can change their given biological sex. The so-called "transition" is not a change of sex or even a change of sexual/gender identity, but rather only a change in sexual appearance or presentation. Thus, "transgender" and "transition" are misleading and inaccurate terms, but are used in this document because of their unfortunate standard use in the medical literature.

In addition, ACPeds is very concerned that parents, along with health care and educational professionals, who support the transgender "transition" of children and adolescents are, in fact, contributing to increased depression by appearing to validate to the children that "something is wrong with their body and biological sex."

Incidence of Mental Health Problems

As the proportion of adolescents who identify as heterosexual decreases, the incidence of mental health issues increases. Using data from an earlier Youth Risk Behavioral Surveillance Survey, researchers found the "proportion of adolescents reporting minority sexual orientation identity nearly doubled, from 7.3% in 2009 to 14.3% in 2017." Those students who identified as sexual minorities were three times more likely to attempt suicide compared with heterosexual adolescents. In that 8-year time period, as the percentage of sexual minority adolescents almost doubled, the proportion of suicide attempts in that population increased from 24.6 % to 35.6%, indicating that these youth are at greater risk for mental health concerns.⁴

Of the "sexual minorities", those with gender dysphoria or transgender identities have higher rates of mental health concerns than other LGBTQ+ identifying adolescents, no matter which measurement tool is utilized. Even young children who identify as transgender are at increased risk. The Adolescent Brain Cognitive Development Study recruited more than 11,000 children across the United States between 9 and 10 years of age with the intention of following them longitudinally to evaluate brain development. In 2022, researchers compared parental reports on the Child Behavior Checklist between children who self-identified as transgender (58) and those who identified as cisgender (7111), with 4692 children excluded who did not understand the question. Children who identified as transgender at this young age were more likely to experience depression (2.53 OR), anxiety (2.70 OR), conduct problems (3.13 OR), and suicidality (5.79 OR). Without considering the possibility that mental health concerns may precede gender dysphoria, the authors state, "Whether this is due to stigma, minority stress, discrimination, or gender dysphoria is unclear." More interesting is the fact that only 0.48% (58 of 11878) children between 9 and 10 years of age identified as transgender.⁵

In a follow up study, one year later, twice as many children (1.0%) identified as transgender, while 33.2% of 10- and 11- year- olds responded to at least one of four questions in a manner interpreted by the authors as not totally aligning with their biological sex. Several categories of gender diversity were evaluated, and the researchers found, "Significant relationships were observed between mental health symptoms and gender diversity for all dimensions assessed."⁶

A contrary conclusion was put forth from an often-cited University of Washington in Seattle study of 73 “transgender children” aged 3 - 12 years whose parents were supportive of their “transition”. When compared with two control groups, the authors stated, “Socially transitioned transgender children who are supported in their gender identity have developmentally normative levels of depression and only minimal elevations in anxiety.” This study has been repeatedly cited as a reason for parents to affirm “transgender children’s” ideation.⁷ However, other researchers re-examined the initial data and found “slightly higher levels of depression but significantly and substantively meaningful differences in anxiety and self-worth, and with results favoring cisgender children, even when the transgender children had high levels of parental support for their gender transitioning.”⁸

Utilizing data from the 2015-2017 Healthy Minds Study, researchers analyzed the mobile surveys of 65,213 students, including 1237 gender minority students, at 71 college campuses in the United States. Mental health concerns of depression, anxiety, eating disorders, self-injury and suicidality were screened via clinically validated instruments. Seventy-eight percent (78%) of “gender minorities” (GM) compared with 45% of students not identifying as “gender minorities” were found to have those mental health concerns. Twice as many GM students (58%) screened positive for depression compared with 28% of “cisgender” students. The authors found that “GM status was associated with 4.3 times higher odds of having at least one mental health problem.”⁹

An extensive psychological evaluation of 49 adolescents presenting for gender-affirming medical treatment in Vienna, Austria, was performed prior to the initiation of any treatment. This included 4 - 5 clinic appointments with evaluations by a child and adolescent psychiatrist, a clinical psychologist and a psychotherapist as well as the completion of structured interviews, questionnaires and family assessments. Over half (57%) of the 49 adolescents were diagnosed with at least one psychiatric diagnosis. Previous studies had found co-occurring mental disorders in transgender-identifying children and/or adolescents to range from 32.4% to 85%. The authors acknowledged that “gender dysphoric adolescents are significantly more likely to show psychopathological abnormalities than their cisgender peers, whose gender identity aligns with the sex they were assigned at birth.”¹⁰

Several factors may contribute to this increased risk of mental health disorders in transgendered youth. It may be that gender dysphoria is more commonly seen in those with other primary mental health diagnoses such as autism spectrum disorder or in those who have suffered a severe trauma, such as sexual abuse. It may be gender dysphoria itself is distressing to the patient, even when the environment is affirming and supportive. Finally, some clinicians theorize that the increase in mental health concerns is secondary to the family rejection or social ostracism the transgender individual experiences.

Researchers have also noted the increased incidence of autism spectrum disorder (ASD) among individuals with sex/gender-identity incongruence. Using five independent cross-sectional datasets consisting of 641,860 individuals, researchers found “transgender and gender-diverse individuals have, on average, higher rates of autism, other neurodevelopmental and psychiatric diagnoses.”¹¹

Another study utilizing the PEDSnet learning health system network evaluated 919,868 youth between 9 and 18 years and found 464 (0.05%) had co-occurring ASD and gender dysphoria. Gender dysphoria was found in 8.6% of those with ASD compared with only 0.6% of those without ASD. In addition, there were greater odds of mental health concerns among those with co-occurring ASD and GD with aOR reaching 20.66 for anxiety, 20.27 for depression and 13.13 for suicidality.¹²

Risk of Suicidal Behaviors

Along with the increase in mental health concerns, the possibility that adolescents with gender dysphoria are at heightened risk for suicide has been raised. More seriously, many parents are specifically told that if they do not accept their children’s gender identity via social transition, medical treatment, and surgical operations, they risk losing their children to suicide.¹³

Early research contributed to the concern regarding increased suicidal behaviors in transgendered adolescents. Utilizing data from the 2013-2015 California Healthy Kids Survey as well as the Biennial Statewide California Student Survey, researchers evaluated the results of 621,189 participating adolescents and found “prevalence of past 12-month self-reported suicidal ideation was nearly twice as high for transgender compared to non-transgender youth (33.73% versus 18.86%).” When the models were adjusted, the transgender youth were almost three times as likely to report past-year suicidal ideation. Between 1.10% and 1.33% of adolescents at that time identified themselves as transgender, and those who did so were more likely to report depressive symptoms and school-based victimization within the past year.¹⁴

Data from the Profiles of Student Life: Attitudes and Behaviors Survey of 120,617 adolescents between 11 and 19 years of age obtained between June 2012 and May 2015 showed nearly 14% of teens reported having made a suicide attempt. The highest rate of suicide attempts (50.8%) was seen in female to male transgender-identifying adolescents, followed by 41.8% of those who identified as “nonbinary”. Heterosexual females (17.6%) and heterosexual males (9.8%) had the lowest rates of suicidal attempts. This study utilized a convenience sample - a methodology that does not allow for broad generalizations as the subjects are not chosen at random, but rather from a group that is conveniently easy to sample.¹⁵ A smaller study utilizing an online survey of 2020 adolescents between 14 and 18 years of age also found that transgender-identifying adolescents (both male and female) had almost twice the rates of suicidal ideation and attempts compared with “cisgendered” adolescents.¹⁶

From the 2016 and 2019 Kids’ Inpatient Database(KID), researchers identified pediatric patients who had International Classification of Diseases (ICD) - 10 codes related to gender dysphoria and suicidal behaviors. There were over 2 million patient hospitalizations evaluated with 6627 patients with gender dysphoria. “Prevalence of suicidality was greater in individuals with gender dysphoria-related codes than in individuals without gender dysphoria-related codes in KID 2016.” (36% versus 5%) In 2019 the numbers were even higher for those with gender dysphoria with 55% of gender dysphoric patients experiencing suicidal ideation or attempts versus 4% of those without gender dysphoria.¹⁷

This increased risk of suicide has been promoted as a reason for parents to permit gender dysphoric adolescents to “transition” – socially, medically, and surgically. Parents are told their adolescent will commit suicide unless they acquiesce to and accept the adolescent as the gender opposite his or her sex. A British ITV drama *Butterfly* interviewed parents of transgender adolescents who stated a common refrain - “I’d rather have a live daughter than a dead son.” The program was influenced and promoted by Mermaids, a British organization encouraging children to identify and be affirmed as transgender.

To evaluate this concern, Michael Biggs, Associate Professor of Sociology at the University of Oxford, analyzed the suicide data from England and Wales. Biggs obtained data from the Gender Identity Development Service (GIDS) of the National Health Service (NHS) from 2016 to 2018. They reported three patients had committed suicide and four had attempted suicide in the two-year interval. Biggs utilized other statistics to demonstrate that the suicide rate for transgender adolescents is higher than that for teens overall, but not as high as for adolescents with anorexia nervosa or depression.¹⁸

Four years later, Biggs evaluated data from the Tavistock and Portman NHS Foundation Trust in London for 2007 to 2020, and found four patients from the clinic died of suspected suicide, two of whom were on the waiting list for treatment and two who had been seen in the clinic. The patients seen in the clinic were calculated to be 5.5 times more likely to commit suicide than the general population of adolescents between 14 and 17 years of age, with an annual suicide rate of 13 per 100,000. However, as the author notes, this is not corrected for the increased risk of suicide found in patients with autism who made up 14 - 15% of the patients. Although tragic, this does not translate to the higher suicide rate presented to parents of children seeking care for gender dysphoria.¹⁹

Additional research utilizing better methodology has demonstrated that the very high rates of suicide attempts by those identifying as transgender cannot be substantiated. The William’s Institute was contracted by the state of

California to use appropriate survey methods and found 22 % of transgender identifying adults had attempted suicide.²⁰ Although this rate of suicide attempts is obviously concerning, it is not different from that experienced by individuals who have experienced bullying or who identify as LGB.²¹

Mental Health Issues and Transgender Identity

Which comes first? Adverse childhood experiences, mental health disorders, or transgender identity? Adverse childhood experiences (ACEs) were first recognized by Felitti as factors that negatively affect the physical and mental health of adults.²² Felitti developed a 10-item scoring system that identified three major areas of childhood stress and trauma that seriously impacted adult health. ACEs included exposure to domestic violence, mental illness, alcohol or drug use in the home, physical or emotional abuse or neglect, sexual abuse, and parental divorce. In Felitti's initial study, 67% of adults reported at least one ACE, with physical abuse and alcohol and drug use in the child's home being the most common. Additional research has demonstrated that ACEs can have an additive negative effect, with four or more ACEs being associated with greater risk of poor physical and mental wellbeing.

The physiologic basis by which ACEs negatively impact health appears to be related to the stress response, leading to elevated levels of cortisol, pro-inflammatory cytokines, and C-reactive protein. Structural and functional changes in the brain occur due to the chronicity of the stress.²³

One of the first studies to consider the impact of ACEs in LGB adults evaluated data from three states that collected information from over 22,000 adults (2.1% identifying as LGB) using the Behavioral Risk Factor Surveillance System. Twice as many LGB adults (29.7%) had experienced sexual abuse as a child compared with heterosexual individuals (14.8%), and they also had more than twice the odds of reporting physical abuse. Transgendered individuals were not identified in this survey.²⁴

Subsequently, researchers evaluated similar data on over 30,000 adults. There were 711 lesbian, gay, and bisexual adults included. Researchers found the LGB adults had a higher prevalence of all ACEs compared to heterosexual adults, with the most significant difference being a threefold increased history of childhood sexual abuse in the LGB respondents. In addition, only 26.8% of LGB individuals stated they had no ACEs, while 40.4% of heterosexuals reported none. Almost twice as many LGB individuals reported between 3 and 8 ACEs (42.4%) compared with 23.9% of heterosexuals. As adults, the LGB community reported twice the rate of poor mental health in the past 30 days (26.8% compared with 10.9%). Again, transgendered individuals were not identified.²⁵

Transgender-identifying adolescents were included in an online survey of 3508 LGBTQ+ adolescents between 14 to 18 years of age. Researchers found that "Participants reported multiple ACEs (M=3.14, SD =2.44) with emotional neglect (58%), emotional abuse (56%) and living with a family member with mental illness (51%) as the most prevalent." Nearly half (43%) of the adolescents had experienced at least 4 ACEs, which is much higher than national samples.²⁶

A study from the University of Texas in 2019 evaluated the differences in ACE experiences between "transgender" and "cisgender" sexual minorities. "Transgender participants reported emotional abuse, physical neglect, and emotional neglect more frequently compared to cisgender LGB people." In addition, the transgender-identifying participants were more than twice as likely to state they were in poor mental health (OR=2.47)²⁷

Suarez, et al, assessed the prevalence of ACEs specifically in 131 'transmasculine' adults – those born female – and found 45% reported more than four ACEs. Having experienced four or more ACEs was associated with more than a fivefold increased incidence of depression (AOR=5.3) and suicidality (AOR=5.2).²⁸

Giovanardi, et al, evaluated the relationship between complex trauma and gender dysphoria. The researchers defined complex trauma as “a set of experiences of cumulative, chronic and prolonged traumatic events, most often of an interpersonal nature, involving primary caregivers and frequently arising in early childhood or adolescence.” These experiences could include physical and sexual abuse, physical and emotional neglect, and exposure to domestic violence, similar to the items on the ACEs screening tool. Utilizing two tools, a Complex Trauma Questionnaire, along with the Adult Attachment Interview, researchers found significant differences between adults with and without gender dysphoria. 61% of adults without gender dysphoria described their attachment to their childhood caretakers as “secure”, while only 27% of gender dysphoric adults did so. The difference in history of complex trauma was also significant as 90% of gender dysphoric adults had experienced any form of trauma and 56% had experienced four or more types. In the control group, only 7% had experienced four or more types of trauma.²⁹ The authors noted that both “trans men” (biological females) and “trans women” (biological males) “suffered from severe neglect, rejection, and psychological abuse”, and stated, “we believe that attachment and trauma investigation could play a crucial role in bringing to light conflicts and defenses that may interfere with a free exploration of gender identity.”

Electronic medical records were reviewed in a large study of 26,300 children and adolescents who identified with their biological sex who were age and sex matched to 1333 transgender individuals. (Ten females and ten males were matched with each individual identifying as transgender.) Common diagnoses noted prior to the diagnosis of gender dysphoria were compiled. There were high rates of psychiatric disorders and suicidal ideation before gender non-congruence in teens, with psychiatric hospitalizations seen 22 – 44 times higher than in the controls and self-harm 70 – 144 times higher. In adolescent patients between 10 and 17 years of age, the researchers found depressive disorders in 49% of trans females and 62% of trans males.³⁰

In a prospective study of 79 Australian children with gender dysphoria (33 biological males; 46 biological females), researchers found high levels of distress, including 41.8% with history of suicidal ideation, 16.3% with self-harm, and 10.1% with suicidal attempts on their first presentation. The majority of the children had comorbid mental health disorders, including 63.3% with anxiety, 62% with depression, 35.4% with behavioral disorders and 13.9% with autism. Significantly the majority also had suffered adverse childhood experiences with 39.2% having had maltreatment, 63.3% had parental mental illness and 59.5% had lost an important family member. 10% of the children had been in out-of-home placement, and only two of the children reported no adverse childhood experiences.³¹

In 2018, Littman reported an online survey of 256 parents of a child who had experienced rapid onset gender dysphoria in their adolescence (83% female sex) during or after puberty. The adolescents were a mean age of 15.2 years when they identified as transgender, and 62.5% of the adolescents had “been diagnosed with at least one mental health disorder or neurodevelopmental disability prior to the onset of their gender dysphoria.”³²

Although retracted due to political pressure, subsequent research confirms Littman’s data regarding preceding mental illness. Surveys completed by 1665 parents visiting a website (Parents of ROGDkids.org) revealed 57% of the transgender-identifying adolescents had a preceding history of mental health concerns that began on average 3.8 years prior to gender dysphoria, and 42.5% had received a ‘formal psychological diagnosis.’³³ Given this research, it seems likely that preceding trauma and childhood adverse experiences contribute to gender dysphoria and certainly to the mental health concerns and depression experienced by many transgender-identifying individuals.

“Affirmation Treatment” and Mental Health Effects

This is a crucial question since health care professionals should provide appropriate treatment that will allow individuals to attain optimal mental well-being. But what is appropriate treatment for “transgender” adolescents? Will social transition, medications, and surgical intervention prevent or treat depression and suicidal behaviors?

Most of the research attempting to answer these questions is severely flawed. Small sample sizes, biased recruitment, patients lost to follow up, and extremely short durations of follow-up are some of the most common problems seen in the literature. In addition, studies on long-term follow up are, of necessity, reporting on individuals who “transitioned” years ago when, in order to undergo medical and surgical “transition,” the patients had to be adults who had received intense psychological evaluation. The recent surge in the adolescent population identifying as transgender is unprecedented, and no long-term follow up studies are obviously available. Even so, the long-term follow up research on transgender adults is concerning for its inability to show improvement in mental health.

Gender Transition Efforts

There are three interventions used by transgender therapists that must be examined: social affirmation (also known as social “transition”), hormonal intervention with use of puberty blockers followed by cross-sex hormones, and surgical procedures.

Social “Transition”

Social “transition” involves a change in name, pronoun use, hair style, and clothing to more closely match the child’s perceived sexual identity which is incongruent with their biological sex. There is conflicting research regarding possible mental health benefits to social “transitioning” of children with gender dysphoria. One of the earliest studies matched 73 “transgender” children between 3 - 12 years with 73 gender-matched community controls, that included 49 siblings of the “transgender” children. The researchers found parental reports of depression were similar in each group, but there were slight increases in anxiety in the “transgender” children.³⁴ However, this study did not provide evidence that social “transitioning” improved psychological well-being.

Psychological functioning assessed via parental reports on 54 children between 5 and 11 years of age who were evaluated at the Hamburg Gender Identity Service in Germany found that peer problems and worse family functioning “were significantly associated with impaired psychological function, whilst the degree of social transition did not significantly predict the outcome. Therefore, claims that gender affirmation through transitioning socially is beneficial for children with GD could not be supported from the present results.”³⁵ The study by Wong, et al. of 226 “gender variant” children who had socially transitioned compared to those who had not transitioned concurred, with the authors stating, “There was little evidence that psychosocial well-being varied in relation to gender transition status.”³⁶

In addition, social transitioning leads to persistence of gender dysphoria. A study of 127 adolescents who were diagnosed before age 12 years with gender dysphoria in Amsterdam, the Netherlands, found that those who experienced “affirmation” of their cross-gender identification were more likely to persist in that incongruent identification. All four children who socially “transitioned” persisted in their cross-sex identification, while only 35% of the 123 children who did not completely socially “transition” persisted.³⁷

Thus, Zucker states, “A gender social transition in prepubertal children is a form of psychosocial treatment that aims to reduce gender dysphoria, but with the likely consequence of subsequent (lifelong) biomedical treatments as well.”³⁸ Cass agreed in her review of gender services for the National Health Services (NHS), and stated social “transition” is “an active intervention because it may have significant effects on the child or young person in terms of their psychological functioning.”³⁹

Further, when one considers brain development of the young child, with its neuroplasticity, each thought, behavior and experience affect the brain’s microstructure and function. Social transition can then confirm to a child a new identity. Importantly, the child will have difficulty later questioning the new identity since parents and teachers have confirmed it.

Pubertal Suppression

In an attempt to examine the benefit of pubertal suppression during adolescence with mental health outcomes as adults, Turban, et al, utilized a cross-sectional survey of 20,619 transgender adults between the ages of 18 to 36 years. In their sample, 16.9% of participants reported they had desired pubertal suppression as an adolescent, with 2.5% receiving such treatment. The authors found “those who received treatment with pubertal suppression...had lower odds of lifetime suicidal ideation (adjusted odds ratio = 0.3).”⁴⁰

However, in a published comment linked to that article, Field and Trumbull pointed out the “exceedingly high rates in both groups of suicide ideation (75% and 90%) and suicide attempts (42% and 51%).” The relatively brief follow-up period and the doubled (45.5% vs. 22.8%) rate of serious suicide attempts requiring inpatient care in the pubertal suppression treatment group during the year preceding data collection contribute to the serious concerns surrounding the use of pubertal suppressing drugs.⁴¹

Another letter to the editor noted the Turban survey assumed puberty blockers were available in the United States earlier than they actually were. “Most seriously, Turban et al (2020) barely acknowledged the fact that adolescents with severe psychological problems would have been less eligible for drug treatment, which confounds the association between treatment and suicidal ideation.” This undermines the article’s recommendation to make treatment available for all transgender adolescents who request it.⁴²

The Florida Agency for Health Care Administration requested McMaster University Department of Health Research Methods to provide an analysis of gender affirming therapies. The two researchers initially found 61 systematic reviews, but utilized 14 for their intense analysis. They found no study comparing outcomes between those using and not using puberty blockers, so they stated **“it is unknown whether people with gender dysphoria who use puberty blockers experience more improvement in gender dysphoria, depression, anxiety, and quality of life than those with gender dysphoria who do not use them. There is very low certainty about the effects of puberty blockers on suicidal ideation.”** The researchers made similar statements regarding cross-sex hormone therapy and surgical interventions.⁴³ This conclusion was further emphasized by a systematic review of studies on the use of puberty blockers in children with gender dysphoria by the National Health Services (NHS) in the United Kingdom noted the low certainty of the outcomes of the studies and could find no evidence that the use of puberty blockers improved the mental health of patients suffering from gender dysphoria.⁴⁴

The Council for Choices in Healthcare in Finland / COHERE Finland reviewed research on gender dysphoria treatment and issued their report in 2020. For hormonal suppression, the report stated, “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...It is not known how the hormonal suppression of puberty affects young people’s judgement and decision-making.”⁴⁵

“Gender-affirming” Hormones - Cross sex hormones

Likewise, a systematic review by the NHS of the use of cross-sex hormones in gender dysphoria evaluating impact on mental health and quality of life also found the “quality of evidence for all these outcomes was assessed as very low certainty.” The report concluded, **“Any potential benefits of gender-affirming hormones must be**

weighed against the largely unknown long-term safety profile of these treatments in children and adolescents with gender dysphoria.”⁴⁶

The pro-transgender-affirmation organization, World Professional Association for Transgender Health (WPATH), commissioned a team at Johns Hopkins University to conduct systematic reviews of treatment protocols for transgendered individuals. One of those studies, a systematic review of 20 research papers, evaluated “quality of life (QOL), depression, anxiety, and death by suicide in the context of gender-affirming hormone therapy among transgender people of any age.” Although the authors stated they found “hormone therapy was associated with increased QOL, decreased depression, and decreased anxiety,” they stated that “certainty in this conclusion is limited by high risk of bias in study designs, small sample sizes, and confounding with other interventions.” Further, they could not make any determinations about the impact on death by suicide, and so recommended additional studies among larger and more diverse groups of patients.⁴⁷

A 2021 comprehensive data review of all 3,754 trans-identified adolescents in US military families over 8.5 years showed that cross-sex hormone treatment leads to increased use of mental health services and psychiatric medications, and increased suicidal ideation/attempted suicide. When transgender-identifying adolescents who were using gender-affirming pharmaceuticals (963) were evaluated separately, their use of mental health care services did not change but their use of psychotropic medications did increase.⁴⁸

A longitudinal study from Denmark that included all individuals (3812) who had accessed the three national centers for gender care and compared them with 38,120 controls found “that the odds ratio for mental health disorders was more than five times higher in transgendered persons compared to controls at baseline. The risk for mental and behavioral disorders in transgender persons increased rapidly during the first year after the index date followed by a decreasing trend, but the odds ratio remained elevated throughout follow-up, especially in transgender persons assigned male at birth.”⁴⁹ Upon presentation to the centers, at least 24% of transgender-identifying individuals had been prescribed psychopharmacological treatment, compared with 4-6% of controls. Although the proportion of transgender-identifying individuals with a psychiatric diagnosis decreased slightly after the first year of treatment, the rates of psychopharmacological treatment increased and remained elevated throughout the treatment period, so that 30.5% - 39.5% of individuals were receiving treatment after 8 years, compared with 8 - 14% of controls. Gender-affirming (cross-sex) hormonal therapy was prescribed to 2089 individuals and there was no significant decrease in mental health concerns after treatment. The study had limited ability to evaluate the effects of gender-affirming surgical interventions.

A recent Finish register follow-up study found that individuals who presented for gender identity services “received many times more specialist-level psychiatric treatment both before and after contacting gender identity services than had their matched controls.”⁵⁰ The authors reported the relative risk of psychiatric needs in gender dysphoric patients versus controls was significantly higher in 2016-2019 compared to in 1996-2000. Furthermore, this study demonstrated that transgender individuals who underwent medical transition had increased needs for specialist-level psychiatric care compared to those transgender individuals who presented for care but did not receive medical interventions. The authors state their findings, along with other research, “do not suggest that medical GR [gender reassignment] interventions resolve psychiatric morbidity among people experiencing gender distress.”

“Sex-reassignment” (Opposite sex impersonating) Surgery

A population-based cohort study between 1973 and 2003 from Sweden matched each of 324 patients who underwent “sex reassignment” surgery (191 male-to-female; 133 female-to-male) with 10 controls. “The overall mortality for sex-reassigned person was higher during follow-up (aHR 2.8) than for controls of the same birth sex, particularly death from suicide (aHR 19.1). Sex-reassigned persons also had an increased risk for suicide attempts (aHR 4.9) and psychiatric inpatient care (aHR 2.8).” It is extremely important to note that on the Kaplan-Meier survival curve, the mortality of “transsexual persons” started to significantly diverge from the

controls after ten years of follow up, increasing substantially by 15 years after surgical reassignment. At 30 years of follow up, the suicide rate was 19 times that of age-matched controls.⁵¹ The authors of this study stated, “Our findings suggest that sex reassignment, although alleviating gender dysphoria, may not suffice as treatment for transsexualism, and should inspire improved psychiatric and somatic care after sex reassignment for this patient group.”⁵²

Overall “Gender-affirming Treatment”

“Gender-affirming treatment” (GAT) is a confusing term since the use of the word “treatment” implies there is a medical condition that requires correction. Dysphoria associated with gender/sex-identification incongruence is a psychological problem in need of a psychological treatment, not affirmation of a false sexual identity by altering physical appearance. Affirmation should more appropriately be used to confirm the individual’s biological sex which can never be changed regardless of any “transition” attempted. Despite these concerns, this paper uses the term “gender-affirming treatment” (GAT) since it is now in common usage in the medical community.

Most studies confirm there are no large or long-term studies demonstrating any benefit to GAT. The Centers for Medicare and Medicaid Services provided analysis of 33 studies on gender reassignment surgeries on adults and determined they would not issue a National Coverage Determination for “gender reassignment surgery for Medicare beneficiaries with gender dysphoria because the clinical evidence is inconclusive for the Medicare population.”⁵³ States were allowed to determine coverage on a case-by-case basis.

A 2023 study from Germany evaluated loneliness and social isolation in “transgender and gender diverse individuals.” Approximately one-third (38 of 88) of the participants had undergone “gender reassignment surgery,” but the researchers found no significant difference in the extremely high incidence of loneliness between those who had (84.2%) and had not (83.3%) undergone surgical procedures. Similarly, 79.2% of those who had not undergone surgery perceived social isolation, compared with 81.6% of those who had surgery. The authors concluded, “Our data indicate that transgender and gender diverse people, who have undergone gender reassignment surgery feel lonelier. To our knowledge, this is the first study analyzing the levels of loneliness and social isolation in operated transgender and gender diverse people.”⁵⁴

Researchers utilized the national database of 6,657,456 Danish-born individuals spanning over four decades and found those individuals identifying as transgender had significantly higher rates of suicide attempts, suicide mortality, suicide-unrelated mortality, and all-cause mortality. Of the 3759 individuals identifying as transgender during that time, “Standardized suicide attempt rates per 100,000 person-years were 498 for transgender versus 71 for non-transgender individuals (aIRR 7.7)” The individuals identifying as transgender were 3.5 times more likely to die from suicide, and even the non-suicide death rate was 1.9 times as high. These numbers were barely lower even in 2021 (aIRR of 6.6, 2.8 and 1.7, respectively).⁵⁵ This despite Denmark being recognized by the European chapter of the International Lesbian, Gay, Bisexual, Trans & Intersex Association (ILGA-Europe) as the third best country in Europe for its protection of sexual and gender minority rights.⁵⁶

The Swedish National Board of Health and Welfare also examined evidence-based research on the care of children and adolescents with gender dysphoria. After a comprehensive review, the Board concluded, “the risk of hormonal interventions for gender dysphoric youth outweigh the potential benefits.”⁵⁷ In this report, the Swedish National Board of Health and Welfare noted the insufficiency of evidence for safety and efficacy of treatments (thus any definitive conclusions cannot be drawn), the poorly understood marked change in demographics and the lack of clarity regarding the cause of gender dysphoria as the number of patients continues to increase (especially in adolescent females), the increasing prevalence of young adults who chose to detransition, and the markedly different population involved in previous cases studied with evidence for pediatric transition.

Another systematic review commissioned by the Swedish Agency for Health Technology Assessment and Assessment of Social Services initially reviewed 9934 studies to determine effects of hormone treatment in

children on psychosocial and mental health, cognition, body composition and metabolic markers. Out of 9934 studies, only 24 were felt to be relevant with low risk of bias. Most of those studies were small and observations were not reported after age 18 years. The authors concluded, “long-term effects of hormone therapy on psychosocial and somatic health are unknown, except that GnRHa [gonadotropin-releasing hormone analogues] treatment seems to delay bone maturation and gain in bone mineral density.” One of the authors’ key points was, “GnRHa treatment in children with gender dysphoria should be considered experimental treatment of individual cases rather than standard procedure.”⁵⁸

Finland also changed its stance and issued new guidelines recommending psychotherapy as the first line of treatment for “gender dysphoric” children and surgical intervention is not allowed for adolescents less than 18 years of age.⁵⁹ The Norwegian Healthcare Investigation Board likewise in May, 2023, stated “research-based knowledge for gender-affirming treatment (hormonal and surgical), is insufficient and the long-term effects are little known.” They recommended revising the guidelines for care of “gender dysphoric” youth.⁶⁰ The French Academy of Medicine has also recommended caution in the use of puberty blockers and surgery in the care of transgendered adolescents.⁶¹

A systematic review of all international clinical practice guidelines (CPGs) concerning “gender minority / trans health” was reported in the BMJ Open in 2021.⁶² None of the CPGs addressed primary care, mental health or long-term medical concerns. The authors concluded, “A paucity of high-quality guidance for gender minority / trans people exists, largely limited to HIV and transition, but not wider aspects of healthcare, mortality or QoL (quality of life).”

These evaluations of evidence-based medicine should cause health care professionals to pause the social, medical, and surgical transition of adolescents. In fact, pending its reopening under a profoundly different model, Great Britain has closed the Tavistock and Portman clinic, specializing in the care of transgender children and has stopped the prescription of all puberty blockers for children, except those enrolled in clinical trials due to the “lack of clinical consensus and polarized opinion on what the best model of care for children and young people experiencing gender incongruence and dysphoria should be.”⁶³

Regrets Concerning “Transitioning” Procedures

Researchers from the University of Toronto provided follow-up data on 139 boys referred to their clinic for gender dysphoria. The boys were initially assessed at a mean age of 7.49 years and followed for a mean of 20.58 years. “Of the 139 participants, 17 (12.2%) were classified as persisters and the remaining 122 (87.8%) were classified as desisters.” This fact is crucial when interventions are proposed for adolescents, as it confirms the majority of children with gender dysphoria will feel comfortable with their biological sex if allowed to progress through normal puberty with the influx of natural sexual hormones.⁶⁴

Thus, in the past, with a medical treatment course of “watchful waiting”, 80- 90% of adolescents with gender dysphoria adopted their birth sex as they went through the natural course of puberty with the accompanying hormonal surges. The adults who then “transitioned” were a small subset of patients, and studies at that time demonstrated a low rate of regret, although the duration of follow-up was short.⁶⁵

Now, however, with the social transition and “gender-affirming therapy” (GAT) provided to young adolescents whose brains are not yet mature, there is less long-term data regarding how many later regret their transition decision. One author stated, “Recent data, capturing the upsurge in the predominant adolescent-onset variant of gender dysphoria, suggest that detransition and/or regret could be more frequent than previously reported”, and cites five articles.⁶⁶

When evaluating the literature on this topic, it is important to note that several flaws occur. First, studies on regret and quality of life have high rates of patients lost to follow up. Secondly, as noted above, adult patients

who transitioned in the past are quite different from adolescents transitioning today. Even more importantly, the term “regret” is defined differently in studies and in some studies is narrowly defined as those who return to the same gender clinic to begin medical detransition. However, as Littman found, only 24% of individuals in her study informed their original medical providers of their decision to detransition.⁶⁷

The methodologically flawed United States Transgender Survey is a cross-sectional survey of 27, 715 transgender and gender diverse adults. From that survey, 17,151 adults stated they had pursued gender affirmation, and of those, 2242 (13.1%) said they had stopped the transition process or detransitioned. Over 80% of these individuals stated pressure from family and social stigma contributed to their decision to detransition, but 15.9% also stated that they had experienced uncertainty about their gender identity. Individuals also stated that fertility and desire for a spouse or partner contributed to their desire to detransition.⁶⁸

Researchers conducted in-depth interviews with 28 Canadian adults who opted to detransition, and learned there were numerous reasons for their decisions, including physical and mental health concerns, surgical complications or postoperative pain, unsupportive family, employment discrimination or inability to access health care. The patients experienced the detransition process as “physically and psychologically challenging”, especially when medical providers lacked appropriate information to help them.⁶⁹

Littman studied 100 patients who chose to detransition, 69 of whom were biological females. Of those who chose to detransition, 60% did so because they felt more comfortable with their biological sex, and 38% stated their gender dysphoria was due to trauma, abuse or a mental health condition.⁷⁰

A study of 1089 patients referred to pediatric endocrine clinics in England reported 5.3% stopped treatment with puberty blockers or cross-sex hormones before their 18th birthday and identified with their biological sex. Significantly, in this study, the younger adolescents less than 16 years of age at the start of hormonal intervention were twice as likely to align their gender identity with their biological sex than those who were older. (9.2% versus 4.4%)⁷¹ Utilizing the records of the United States Military Healthcare System, researchers evaluated 952 transgender adolescents and adults and found 29% discontinued hormonal therapies within four years.⁷²

A retrospective chart review of 68 youth receiving gender care at Children’s National Hospital found 47% of the patients were autistic, and 29% reported a change in their request for treatment. The authors stated in their conclusion, “Shifts in gender-affirming medical requests by gender-diverse youth may not be uncommon during the adolescent’s gender discernment process.”⁷³ There are websites for those desiring to detransition, and one website on Reddit has over 47,000 members.⁷⁴

The short-term follow up of currently advocated “gender affirming” care, along with the high incidence of loneliness and depression among transgender individuals, and the unknown numbers of those who desire to detransition should all cause health care professionals to reconsider treatment offered to those with gender dysphoria.

ADDITIONAL CONCERNS

Politics versus Science.

Levine and Abbruzzese clearly articulate the current state of medical care of individuals with gender dysphoria/incongruence in the United States and the way politics has overtaken and overshadowed the evidence-based science. They list ten key, but false, assumptions that underlie care in the United States, including trans-identity will be lifelong, is biologically determined, is inherently healthy, and that the only appropriate treatment is the affirmation model with medical and surgical interventions without use of psychological evaluation or treatment.⁷⁵

Adolescent Brain Development

The immaturity of the adolescent brain has been well described for the past 20 years, and newer research demonstrates how the immaturity affects decision-making. Studies confirm that adolescents, when faced with real life decisions, are much more likely to depend upon their emotions and peer pressure, with less use of their cognitive reasoning skills and with less concern for future consequences.⁷⁶ The rise of rapid-onset gender dysphoria in adolescent girls who are high users of social media is evidence of this.

In addition, the immaturity of the adolescent brain contributes to participation in high risk behaviors as the teens seek to experience higher levels of dopamine. Dopamine is involved in the pleasure-reward system of the brain, and the immaturity of their brains causes adolescents to seek more exciting stimulation. Since their prefrontal cortex (the brain's inhibition center) is not yet fully mature, their ability to stop or avoid risky behaviors is limited.⁷⁷ This desire for excitement via novel behavior may entice adolescents to experiment with alternative gender roles.

Finally the adolescent brain is also significantly molded as the neurons experience the sex-appropriate hormonal surges experienced with puberty. Brain cells include receptors for estrogen and testosterone, and the brain is structurally and functionally changed during puberty.⁷⁸ What happens to the development of the adolescent brain when puberty is blocked or when opposite sex hormones predominate? Unfortunately, we have no answers to these questions that are critical to the evaluation of care for individuals with sex/gender identity incongruity.

For more information regarding hormonal impact on brain development during adolescence, see "The Teenage Brain: Under Construction" at <https://acpeds.org/position-statements/the-teenage-brain-under-construction>

Medical and Surgical Complications of Treatments

It is not the purpose of this paper to document the numerous complications of pubertal suppression, cross sex hormones and surgical interventions, but it should be noted they may include, among other complications, sterility and lifelong hormonal treatment.

CONCLUSION

The mental well-being of all adolescents is critical, both for them as individuals, and for the health of the family and community. Therefore, the American College of Pediatricians (ACPedS) urges parents and all health care professionals to promote and encourage prevention and treatment modalities that will assure optimal outcomes for those affected by sex/gender-identity incongruence, along with all mental illnesses.

However, from this review of the literature, there is strong evidence that children and adolescents who identify as transgender have experienced significant psychological trauma leading to their gender dysphoria. Also, there is no long-term evidence that current "gender affirming" medication and surgical protocols benefit their mental well-being. High rates of suicide attempts and/or completions in those who have received "gender affirming" interventions indicate that at minimum, long term controlled trials should be conducted if these interventions are to be continued. More attention and support should be afforded to individuals seeking help in detransitioning after having made a decision during their formative adolescent years with life-long consequences, including possible sterility and loss of sexual function. Therefore, the ACPeds cannot condone the social affirmation, medical intervention, or surgical mutilation of children and adolescents identifying as transgender or gender nonconforming. Rather, intensive psychotherapy for the individual and family to determine and hopefully treat the underlying etiology of their gender incongruence should be pursued.

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Voted on and approved by the ACPeds Board of Directors and Membership
February 1, 2024

References

- ¹ Youth Risk Behavior Survey – Data Summary and Trends Report 2011 – 2021. Centers for Disease Control and Prevention. 2023.
- ² <https://www.apa.org/pi/lgbt/programs/safe-supportive/lgbt/key-terms.pdf> accessed Aug 2, 2023
- ³ Potter AS, Dube SL, Barrios LC, et al. Measurement of gender and sexuality in the Adolescent Brain Cognitive Development (ABCD) study. *Develop Cognit Neuroscience*. 2022; 53:101057.
- ⁴ Raifman J, Charlton BM, Arrington-Sanders R, et al. Sexual orientation and suicide attempt disparities among US adolescents: 2009-2018. *Pediatrics* 2020; 145(3):e20191658.
- ⁵ Russell DH, Hoq M, Coghill D, and Pang KC. Prevalence of mental health problems in transgender children aged 9 to 10 years in the US, 2018. *JAMA Network Open*. 2022;5(7): e2223389.
- ⁶ Potter A, Dube S, Allgaier N, et al. Early adolescent gender diversity and mental health in the Adolescent Brain Cognitive Development (ABCD) study. *J Child Psych Psychiatry*. 2021; 62(2):171-179.
- ⁷ Olson KR, Durwood L, DeMeules M, and McLaughlin KA. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016; 373(3):e20153223.
- ⁸ Schumm, Walter & Crawford, Duane. (2019). Is Research on Transgender Children What It Seems? Comments on Recent Research on Transgender Children with High Levels of Parental Support. *The Linacre Quarterly*. 87. 002436391988479. 10.1177/0024363919884799.
- ⁹ Lipson SK, Raifman J, Abelson S, and Reisner SL. Gender minority mental health in the U.S.: Results of a national survey on college campuses. *Am J Prev Med*. 2019; 57(3):293-301.
- ¹⁰ Klinger D, Riedl S, Zesch HE, et al. Mental health of transgender youth: A comparison of assigned female at birth and assigned male at birth individuals. *Clin Med*. 2023; 12:4710.
- ¹¹ Warrier V, Greenberg DM, Weir E, et al. Elevated rates of autism, other neurodevelopmental and psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals. *Nat Commun*. 2020; 11:3959.
- ¹² Khan NF, Sequeira GM, Reyes V, et al. Variation in mental health comorbidities among youth with autism spectrum disorder and gender dysphoria. *J Adol Health*. 2023; 72:548. S 82.
- ¹³ Zucker KJ. Adolescents with gender dysphoria: Reflections on some contemporary clinical and research issues. *Archives of Sexual Behavior*. 2019; 48:1983-1992.
- ¹⁴ Perez-Brumer A, Day JK, Russell ST, and Hatzenbuehler ML. Prevalence and correlates of suicidal ideation among transgender youth in California: Findings from a representative, population-based sample of high school students. *J Am Acad Child Adolesc Psychiatry*. 2017; 56(9):739-746.
- ¹⁵ Toomey RB, Syvertsen AK, and Shramko M. Transgender adolescent suicide behavior. *Pediatrics*. 2018; 142(4):e20174218.
- ¹⁶ Thoma BC, Salk RH, Choukas-Bradley S, et al. Suicidality disparities between transgender and cisgender adolescents. *Pediatrics*. 2019;144(5):e20191183.
- ¹⁷ Mitchell HK, Keim G, et al. Prevalence of gender dysphoria and suicidality and self-harm in a national database of paediatric inpatients in the USA: a population-based, serial cross-sectional study. *The Lancet: Child and Adol Health*. 2022; 6(12):876-884.

-
- ¹⁸ Biggs, M. Suicide by trans-identified children in England and Wales. 2018 Retrieved from <https://www.transgendertrend.com/suicide-by-trans-identified-children-in-england-and-wales>. Accessed August 2, 2023.
- ¹⁹ Biggs M. Suicide by clinic-referred transgender adolescents in the United Kingdom. *Archives of Sexual Behavior*. 2022; 51:685-690.
- ²⁰ Herman JL, Wilson BD, Becker T. Demographic and health characteristics of transgender adults in California: Findings from the 2015-2016 California Health Interview Survey. Policy Brief. UCLA Center Health Policy Res.2017;Oct;(8):1-10. <https://healthpolicy.ucla.edu/publications/Documents/PDF/2017/transgender-policybrief-oct2017.pdf>
- ²¹ Horvath,Hacsi. The Theatre of the Body: A detransitioned epidemiologist examines suicidality, affirmation, and transgender identity. Posted at <https://4thwavenow.com/2018/12/19/the-theatre-of-the-body-a-detransitioned-epidemiologist-examines-suicidality-affirmation-and-transgender-identity> Accessed July 15, 2023.
- ²² Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*. 1998; 14(4):245-258.
- ²³ Andersen JP and Blosnich J. Disparities in Adverse Childhood Experiences among sexual minority and heterosexual adults: Results from a multi-state probability-based sample. *PLoS One*. 2013; 8(1):e54691.
- ²⁴ Andersen JP and Blosnich J. Disparities in Adverse Childhood Experiences among sexual minority and heterosexual adults: Results from a multi-state probability-based sample. *PLoS One*. 2013; 8(1):e54691
- ²⁵ Austin A, Herrick H, and Proescholdbell S. Adverse childhood experiences related to poor adult health among lesbian, gay, and bisexual individuals. *Am J Public Health*. 2016; 106(2):314-320.
- ²⁶ Craig SL, Austin A, Levenson J, et al. Frequencies and patterns of adverse childhood events in LGBTQ+ youth. *Child Abuse and Neglect*. 2020; 107:
- ²⁷ Schnarrs PW, Stone AL, Salcido R, et al. Differences in adverse childhood experiences (ACEs) and quality of physical and mental health between transgender and cisgender sexual minorities. *J Psychiatric Res*. 2019; 119:1-6.
- ²⁸ Suarez NA, Peitzmeier SM, Potter J, et al. Preliminary findings for adverse childhood experiences and associations with negative physical and mental health and victimization in transmasculine adults. *Child Abuse and Neglect*. 2021;118. 105161.
- ²⁹ Giovanardi G, Vitelli R, Vergano CM, et al. Attachment patterns and complex trauma in a sample of adults diagnosed with gender dysphoria. *Frontiers in Psychology*. 2018; 9:60.
- ³⁰ Becerra-Culqui TA, Liu Y, Nash R, et al. Mental Health of Transgender and Gender Nonconforming Youth Compared with Their Peers. *Pediatrics*. 2018;141(5):e20173845.
- ³¹ Kozłowska K, McClure G, Chudleigh C, et al. Australian children and adolescents with gender dysphoria: Clinical presentations and challenges experienced by a multidisciplinary team and gender service. *Human Systems*. 2021;1(1):70-95. doi:[10.1177/26344041211010777](https://doi.org/10.1177/26344041211010777)
- ³² Littman, L. "Rapid-onset gender dysphoria in adolescents and young adults: A study of parental reports," *Journals.plos.org*, Aug. 16, 2018. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0202330>
- ³³ Diaz S and Bailey JM. Rapid onset gender dysphoria: parent reports on 1655 possible cases. *Archives of Sexual Behavior*. 2023; 52:1031-1043. Retracted
- ³⁴ Olson KR, Durwood L DeMeules M, McLaughlin KA. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016; 137(3):e20153223.
- ³⁵ Sievert EDC, Schweizer K, Barkmann C, et al. Not social transition status, but peer relations and family functioning predict psychological functioning in a German clinical sample of children with Gender Dysphoria. *Clin Child Psychol Psychiatry*. 2021; 26(1):79-95.

-
- ³⁶ Wong WI, van der Miesen AIR, Li TGF, et al. Childhood social gender transition and psychosocial well-being: A comparison to cisgender gender-variant children. *Clin Pract Pediatr Psychol*. 2019; 7(3): 241-253.
- ³⁷ Steensma TD, McGuire JK, et al. Factors associated with desistence and persistence of childhood gender dysphoria: A quantitative follow-up study. *J Am Acad Child Adolesc Psychiatry*. 2013; 52(6): 582-290.
- ³⁸ Zucker KJ. Debate: Different strokes for different folks. *Child and Adol Mental Health*. 2020; 25(1):36-37.
- ³⁹ The Cass Review. Independent review of gender identity services for children and young people: interim report. February 2022 p. 62
- ⁴⁰ Turban JL, King D, Carswell JM, and Keuroghlian AS. Pubertal suppression for transgender youth and risk of suicidal ideation. *Pediatrics*. 2020; 145(2):e20191725. doi:10.1542/peds.2019-1725
- ⁴¹ Field SS, Trumbull DA. RE: Pubertal suppression for transgender youth and risk of suicidal ideation. *Pediatrics*. comment posted 3 March 2020. 2020;145(2):e20191725.
- ⁴² Biggs M. Puberty blockers and suicidality in adolescents suffering from gender dysphoria. Letter to the Editor. *Archives of Sexual Behavior*. 2020. <https://doi.org/10.1007/s10508-020-01743-6>
- ⁴³ Brignardello-Petersen R and Wiercioch W. Effects of gender affirming therapies in people with gender dysphoria: evaluation of the best available evidence. May 16, 2022. Prepared for the Florida Agency for Health Care Administration. https://ahca.myflorida.com/letkidsbekids/docs/AHCA_GAPMS_June_2022_Attachment_C.pdf.
- ⁴⁴ National Institute for Health and Care Excellence (NICE). Evidence review: gonadotrophin releasing hormone analogues for children and adolescents with gender dysphoria. 2020 <https://cass.independent-review.uk/nice-evidence-reviews/> Accessed August 2, 2023
- ⁴⁵ https://segm.org/sites/default/files/Finnish_Guidelines_2020_Minors_Unofficial%20Translation.pdf
- ⁴⁶ National Institute for Health and Care Excellence (NICE). Evidence review: gender-affirming hormones for children and adolescents with gender dysphoria. 2020. <https://cass.independent-review.uk/nice-evidence-reviews/>. Accessed August 2, 2023
- ⁴⁷ Baker KE, Wilson LM, Sharma R, et al. Hormone therapy, mental health, and quality of life among transgender people: A systematic review. *J Endocrine Soc*. 2021; 5(4): 1-16.
- ⁴⁸ Hisle-Gorman E, Schvey NA, Adirim TA, et al. Mental Healthcare Utilization of Transgender Youth Before and After Affirming Treatment, *The Journal of Sexual Medicine*, Volume 18, Issue 8, August 2021, Pages 1444–1454, <https://doi.org/10.1016/j.jsxm.2021.05.014>
- ⁴⁹ Glintborg D, Moller JJK, Rubin KH, et al. Gender-affirming treatment and mental health diagnoses in Danish transgender persons: a nationwide register-based cohort study *European J Endocrinology*. 2023; 189:336-345.
- ⁵⁰ Kaltiala R, Holttinen T, Tuisku K. Have the psychiatric needs of people seeking gender reassignment changed as their numbers increase? A register study from Finland *European Psychiatry*. 2023; 66(1):e93, 1-8.
- ⁵¹ Dhejne C, Lichenstein P, Bowman M, et al. Long-term follow-up of transsexual persons undergoing sex reassignment surgery: Cohort study in Sweden. *Plos ONE*. 2011; 6(2): e16885.
- ⁵² Dhejne C, Lichenstein P, Bowman M, et al. Long-term follow-up of transsexual persons undergoing sex reassignment surgery: Cohort study in Sweden. *Plos ONE*. 2011; 6(2): e16885.
- ⁵³ Gender dysphoria and gender reassignment surgery. CMS.gov - CAG-00446N.
- ⁵⁴ Hajek A, Konig H, Blessmann M, and Grupp K. Loneliness and social isolation among transgender and gender diverse individuals. *Healthcare*. 2023; 11:1517.
- ⁵⁵ Erlangsen A, Jacobsen AL, Running A, et al. Transgender Identity and Suicide Attempts and Mortality in Denmark. *JAMA* 2023; 329(24):2145-2153.
- ⁵⁶ <https://rainbow-europe.org/country-ranking> Accessed July 29, 2023
- ⁵⁷ Summary of key recommendations from the Swedish National Board of Health. Society for Evidence Based Gender Medicine. February 17, 2022. <https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/artikelkatalog/kunskapsstod/2023-1-8330.pdf>

-
- ⁵⁸ Ludvigsson JF, Adolfsson J, Holstad M, et al. A systematic review of hormone treatment for children with gender dysphoria and recommendations for research. *Acta Paed*. 2023; <https://doi.org/10.1111/apa.16791>
- ⁵⁹ https://segm.org/Finland_deviates_from_WPATH_prioritizing_psychotherapy_no_surgery_for_minors Accessed August 9, 2023
- ⁶⁰ <https://washingtonstand.com/news/norway-agency-revise-gender-transition-guidelines-because-research-based-knowledge-is-insufficient> Accessed August 9, 2023
- ⁶¹ <https://www.academie-medecine.fr/wp-content/uploads/2022/03/22.2.25-Communique-PCRA-19-Gender-identity-ENG.pdf> Accessed August 8, 2023
- ⁶² Dahlen S, Connolly D, Arif I, et al. International clinical practice guidelines for gender minority/trans people: systematic review and quality assessment. *BMJ Open* 2021;**11**:e048943.
- ⁶³ <https://www.england.nhs.uk/commissioning/spec-services/npc-crg/gender-dysphoria-clinical-programme/implementing-advice-from-the-cass-review/> Accessed July 29, 2023
- ⁶⁴ Singh D, Bradley SJ, Zucker KJ. A follow-up study of boys with gender identity disorder. *Frontiers in Psychiatry*. 2021; 12:632784.
- ⁶⁵ Blanchard, R., Steiner, B. W., Clemmensen, L. H., & Dickey, R. (1989). Prediction of regrets in postoperative transsexuals. *Canadian Journal of Psychiatry*, 34(1), 43–45. <https://doi.org/10.1177/070674378903400111>
- ⁶⁶ Jorgensen SCJ. Transition regret and detransition: Meanings and uncertainties. *Archives of Sexual Behavior*. 2023; <https://doi.org/10.1007/s10508-023-02626-2>
- ⁶⁷ Littman L. Individuals treated for gender dysphoria with medical and/or surgical transition who subsequently detransitioned: A survey of 100 detransitioners. *Archives of Sexual Behavior*. 2021; 50:3353-3369.
- ⁶⁸ Turban JL, Loo SS, Almazan AN and Keuroghlian AS. Factors leading to ‘detransition’ among transgender and gender diverse people in the United States: A mixed-methods analysis. *LGBT Health*. 2021; 8(4):273-280.
- ⁶⁹ MacKinnon KR, Kia H, Salway T, et al. Health care experiences of patients discontinuing or reversing prior gender-affirming treatments. *JAMA Network Open*. 2022; 5(7): e2224717.
- ⁷⁰ Littman L. Individuals treated for gender dysphoria with medical and/or surgical transition who subsequently detransitioned: A survey of 100 detransitioners. *Archives of Sexual Behavior*. 2021; 50:3353-3369.
- ⁷¹ Butler, Adu-Gyamfi K, et al. Discharge outcome analysis of 1089 transgender young people referred to paediatric endocrine clinics in England 2008–2021. *Archives of Disease in Childhood*, 107(11), 1018–1022. <https://doi.org/10.1136/archdischi-2022-324302>
- ⁷² Roberts, C. M., Klein, D. A., Adirim, T. A, et al. Continuation of gender-affirming hormones among transgender adolescents and adults. *Journal of Clinical Endocrinology & Metabolism*, 2022. 107(9), e3937–e3943.
- ⁷³ Cohen A, Gomez-Lobo V, D’Angelo LJ, et al. Shifts in gender-related medical requests by transgender and gender-diverse adolescents. *J Adol Health*. 2023; 72(3):428-436.
- ⁷⁴ <https://www.reddit.com/r/detrans/> Accessed July 22, 2023
- ⁷⁵ Levine SB and Abbruzzese E. Current concerns about gender-affirming therapy in adolescents. *Current Sexual Health Reports*. 2023; 15:113-123.
- ⁷⁶ Diekema DS Adolescent brain development and medical decision-making. *Pediatrics*. 2020; 146(s1): e20218F
- ⁷⁷ Spear LP. Adolescent Neurodevelopment. *J Adolesc Health*. 2013; 52(202):S7-13.
- ⁷⁸ Vigil P, Pablo del Rio J, Carrera B, et al. Influence of sex steroid hormones on the adolescent brain and behavior. *Linacre Quarterly*. 2016; 83(3):38-329.