

POLICY FOCUS

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The Risks of Gender-Transition Treatments in Adolescents

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HIGHLIGHT

Medical treatments often come with serious risks and side effects. It's important for people to be aware of these possibilities and how likely they are, to fully weigh the benefits and costs of treatment. Unfortunately, today, most discussions about medical gender-transition treatments minimize or even ignore the risks and physical costs, even those that are irreversible. Patients, as well as the parents of minor patients, deserve this information.

INTRODUCTION

The number of young people who identify as transgender has increased tremendously in recent years, nearly **doubling** between 2017 and 2022. Today, **about 5 percent** of young people say they identify as transgender or non-binary, meaning they do not identify as male or female.

The mainstream response to gender-questioning youth, in our schools and medical system, has been to encourage experimentation with new "gender identities" and to pursue medical gender-transition

treatments, meaning puberty blockers, cross-sex hormones, and surgeries intended to make the body more like the patient’s opposite-sex gender identity. But these treatments, like other medical treatments, come with serious risks.

These risks include irreversible harm to sexual function, reproductive health, and general health. Gender transition patients sometimes lose the ability to **orgasm**, experience **sexual pleasure**, **reproduce**, or **breastfeed**. They are also at higher risk of **osteoporosis**, **seizures** (in epileptic patients), **cardiovascular problems**, **stroke**, **heart attack**, and **other health problems**.

In addition to these physical risks, there is also the risk of regret; some gender-transitioning youth desist from treatment only to find that they have experienced stunted growth and/or other permanent changes to their voice and body that cannot be reversed.

Patients, and the parents of minor patients, deserve to have access to the full scope of what we know today about the risks associated with gender-transition treatments so that they can make fully informed decisions. Furthermore, given the severity of these risks, and what we know about adolescent brain development, it is reasonable to question the ability of minor patients to consent to these treatments and these serious risks.

WHAT IS THE DUTCH PROTOCOL?

Proposed in the mid-1990s by clinicians in the Netherlands, puberty blockers quickly became the international “gold-standard” practice in the treatment of adolescents diagnosed with gender dysphoria—the clinical label for being distressed about identifying with a different gender than what was assigned at birth (natal sex). Puberty blockers are the first step in what is now known as the

Dutch protocol, which arrived in the United States in 2007 at the Gender Management Service of the Boston Children’s Hospital.

The protocol, as originally published, allowed clinicians to administer puberty blockers at the first stage of puberty as long as the child was at least 12 years old. Then, children could start cross-sex hormones (estrogen for boys and testosterone for girls) at 16 and gender-transition surgeries at 18 if they met certain eligibility criteria, such as support from their family and no other mental health problems. But clinicians frequently do not follow these criteria. In 2022, the World Professional Association for Transgender Health (WPATH), **removed** specific age recommendations for minors seeking most gender transition treatments.

The “Dutch Protocol”

	GIRLS	BOYS
Step 1	Puberty Blockers	Puberty Blockers
Step 2	Testosterone	Estrogen
Step 3	Surgery (<i>mastectomy, hysterectomy, phalloplasty</i>)	Surgery (<i>penectomy, orchiectomy, vaginoplasty</i>)

While surgery is the most extreme step in a gender transition, each step comes with risks to patients’ health. Contrary to clear evidence, the protocol claimed that the effects of puberty blockers were reversible, but this is not always true. Interestingly, an early proponent of puberty blockers for children—and men with sexual obsessions—**acknowledged** the side effects for men, but not for adolescents with gender dysphoria.

Puberty blockers were developed to treat central precocious puberty (premature puberty development) and **have not been approved by the FDA for delaying or stopping normal-stage puberty**. However,

though off-label use of a drug carries the risk of using medication for an unstudied purpose, the practice **is affirmed by the FDA** to be suitable under a physician's discretion, and if no label-approved drug exists for the issue. Though this position is a sweeping permission for physician discretion in general, using it to legitimize the use of puberty blockers to prevent normal puberty could be unwise due to its hijacking other aspects of essential physical development.*

In fact, no country has licensed puberty blockers as a treatment for gender dysphoria, likely because no long-term, longitudinal studies of puberty blockers for this new use exist.

As these gender-transitioning children grow into adults and become sexually active, even if they've undergone surgery to create sexual organs corresponding with their gender identity, they will likely have difficulty in bonding through and enjoying sex.

Due to increasing awareness of the protocol's problems, already Finland, Sweden, Norway, and the U.K. are **backpedaling** their formerly aggressive acceptance of these practices. Aside from the **glaring problems** with the studies used to justify the Dutch protocol, the protocol itself does not even live up to its own goals. One of its goals was diagnosis, but none of the patients selected in a **2006 study** to confirm the protocol stopped at puberty blockers alone. More recent studies have confirmed this finding. In fact, **over 95 percent** of youth go on to cross-sex hormones after the use of puberty blockers. Sex reassignment surgery is less common, with **only about one in four** trans-identifying people opting in.

LOSS OF SEXUAL FUNCTION

Despite our sex-positive culture, there has been little investigation or discussion of how

gender-transition treatments may affect patients' long-term sexual health and function.

Children are starting gender-transition treatments at younger and younger ages. Many of them are far from becoming sexually active and don't understand the risks and consequences of gender-transition treatments. For example, they **may never achieve orgasm**.

Dr. Marci Bowers, Jazz Jennings' surgeon and the current head of WPATH, told author and reporter Abigail Shrier: "If you've never had an orgasm pre-surgery, and then your puberty's blocked, it's very difficult to achieve that

afterwards." In other words, the combination of sex-reassignment surgery and early use of puberty blockers can cause sexual dysfunction.

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He goes on to say, "My fear about these young children who never experience orgasm prior to undergoing surgery are going to reach adulthood and try to find intimacy and realize they don't know how to respond sexually."

Adolescents who have not experienced sexual orgasm can hardly understand what they will

*A part or whole paragraph borrowed with the author's permission from a policy proposal written and put forth by Havilah Wingfield entitled *Policy: Transcare Medical Standards for Virginian Children and Adolescents*.

miss and may never experience. Most studies of trans-identified individuals are focused on adults who transitioned in adulthood so even the scant research that has been performed does not address the consequences of early treatment. Even in studies of adults who have transitioned, this population reports generally **lower levels of sexual health**.

There are obvious ethical issues with studying sexual function and dysfunction in pre-pubescent patients, and there is still **much unknown** about the physiology and neurology of orgasms in general.

LOSS OF FERTILITY

Because the vast majority of gender-transitioning youth who take puberty blockers (GnRH analogues) also go on to take cross-sex hormones, it can be difficult to isolate the effects of puberty blockers alone in this population. However, we know that puberty blockers are not without risk to future fertility.

Though trans-identifying youth may consider the immediate, desired effects of looking like their preferred gender as outweighing the possible future regret from fertility and breastfeeding loss, they may be making a choice that they are not developmentally ready to make.

The **Mayo Clinic** lists a few potential side effects related to puberty blockers, including an effect on future fertility (“depending on when pubertal blockers are started”). An **NIH study** also states: “Suppression of puberty with gonadotropin-releasing hormone agonist analogs (GnRHa) in the pediatric transgender patient can pause the maturation of germ cells, and thus, affect fertility potential.” This **therapy** pauses female oocytes (eggs) maturation and stops the ability to produce fertile sperm. Eggs can be harvested before hormone therapy, but if the eggs have not been allowed to mature (due to puberty blockers), they would be unusable for conception.*

Fenway Health, a medical outfit that provides transition treatments says, “Data is limited as to the long-term effects of puberty blockers and GAHT on future fertility. If the decision is made to stop puberty blockers, there is good evidence to suggest that the development of mature eggs and sperm will occur, but the timeline and **future fertility cannot necessarily be assured.**” (Emphasis added).

It is widely accepted that cross-hormone therapy harms fertility and can cause infertility (see **Coleman et al., Hembree et al., and Shumer et al.**)*. The UK National Health Service **cautions**, “Long-term cross-sex hormone treatment may also lead, eventually, to infertility, even if treatment is stopped.” Estrogen therapy in men will decrease sperm production, which can lead to azoospermia (the complete absence of sperm). Testosterone therapy in women can lead to amenorrhea (the absence of a menstrual period) and impaired fertility.

The potentially problematic issues with sex-reassignment surgery are obvious: infertility from having sex organs removed and the inability of natal female trans-identifying patients to breastfeed in the future. Clearly, the permanent impacts on fertility should be seen as carrying immense weight in this conversation. Though trans-identifying youth may consider the immediate, desired effects of looking like their preferred gender as outweighing the possible future regret from fertility and breastfeeding loss, they may be making a choice that they are not developmentally ready to make. Should a 14-year-old be allowed to decide to permanently forego having children?*

Some advocates for gender transition counter that while infertility is a risk, patients now have new options for “fertility preservation,” such as sperm and oocyte cryopreservation and testicular or ovarian tissue banking. Patients—and their parents—should know that these options can involve complex, expensive procedures, and still do not guarantee success.

GENERAL PHYSICAL HEALTH EFFECTS

Aside from effects on sexual and reproductive health, gender-transition treatments can also affect other systems in the body, like the bones, the brain, and the metabolic system.

Pubertal sex hormones **affect bone growth and maturation**. Therefore, preventing sex hormones from entering the system through puberty blockers can alter **bone mineralization** and **density**.*

In 2022, the FDA put a warning on puberty blockers because several minors on the drugs experienced tumor-like masses in the brain, including visual disturbances (seeing bright lights that aren't there), headache or vomiting, papilledema (swelling of the optic nerve), increased blood pressure, and abducens neuropathy (eye paralysis).

It is **well established** that kids who use puberty blockers have lower bone mass density (BMD) than their peers, sometimes by extremes as far as **two standard deviations from the mean** (in a patient who used puberty blockers for three years). Lower BMD puts people at higher risk of osteoporosis and bone fracture.

The hormone, or endocrine, system also **affects brain formation** both in middle childhood and adolescence, primarily through androgens. In middle childhood, around ages seven or eight, adrenal androgens climb in secretion levels and may affect cognitive ability. In puberty, androgens continue to **increase** and influence the brain's development, structure, and behavior.*

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Sex hormones also affect **metabolic function**. **Drs. Kim and Halter studied** the relationship between sex hormones, metabolic disorders, and Type 2 diabetes. They found that:

“Endogenous sex hormones predict impairments of glucose regulation. Cross-sectional studies suggest that lower levels of testosterone in men and higher levels in women increase risk of metabolic syndrome and diabetes, while lower levels of sex hormone binding globulin

in both men and women increase risk of metabolic syndrome and diabetes.”*

Though the study was not done on adolescents, one may extrapolate an increased risk of harming an adolescent's metabolic system and potentially causing diabetes by blocking testosterone in natal males (as with puberty blockers) and increasing it in natal females (as with cross-hormone therapy).*

Cross-sex hormones can cause bone loss too, though **Rosenthal says** that they may reverse bone growth stunting from puberty blockers. Studies that claim to support the benefits of this treatment should be read with care and **may not be reliable**. As seen

here with puberty blockers and cross-sex hormone treatment, puberty hormones are not just about growing chest hair or breasts, they affect a broad spectrum of physiological development in youth.*

The UK National Health Service [lists the following](#) as potential side effects of cross-sex hormones: [blood clots](#), [gallstones](#), weight gain, [acne](#), dyslipidemia (abnormal levels of fat in the blood), elevated liver enzymes, [polycythaemia](#) (high concentration of red blood cells), and hair loss or balding (androgenic alopecia).

Finally, when it comes to sex reassignment surgery—as with most surgeries—other risks also include [surgical complications and infections](#).*

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ABILITY TO MAKE LIFE-LONG MEDICAL DECISIONS AND THE POSSIBILITY OF REGRET

Children and adolescents do not have the same capacity as adults do to make informed medical decisions that affect their future health. The human brain does not finish development [until age 25](#).*

Authors [Grootens-Wiegers et al.](#) analyzed children and adolescents' decision-making capacity and found several points that apply to this argument. First, adolescents do not identify risks as well as adults do, but they do connect with rewards more intensely because they have a greater dopamine response to rewards than adults have. Also, their tendency to downplay risk is greater in emotionally-loaded situations. Thus, in a situation with both risk and reward that involves some level of emotions, Grootens-

Wiegers et al. say that adolescents may downplay the risks and over-emphasize the rewards of a decision, often valuing short-term rewards over long-term ones.*

Desistance and detransitioning are both terms for reverting back to identifying with one's natal sex after previously undergoing gender-transition treatments. According to several researchers, trans-identifying children often desist (stop identifying as transgender) by the time they are adolescents (see [Shumer & Spack](#), [Shumer et al.](#), and [Rosenthal](#)). Even the [American Psychiatric Association](#), which supports these transition methods for youth and opposes any pertinent government prohibitions, acknowledges in their [Diagnostic and Statistical Manual of](#)

[Mental Disorders](#) that the majority of gender dysphoric children no longer have gender dysphoria by the time they reach adolescence or adulthood.*

Those who have adolescent-onset gender dysphoria experience fluctuations in and out of the disorder and are [“more ambivalent about and less likely satisfied after gender reassignment surgery.”](#) [Lisa Marchiano](#), a social worker and Jungian analyst, is concerned “there may also be many false positives” in children identifying as transgender when something else may be going on.*

Keira Bell, an English woman who started puberty blockers at 15 years old, [sued](#) the “Tavistock and Portman NHS Foundation Trust, which runs Britain's main Gender Identity Development Service for children” for

not adequately testing her desire for a gender transition. She is an example of the real and present danger that the **current model** that allows children to choose their own medical care based on their possibly temporary gender identity may cause a high percentage of experiences of complicated **desistance and regret later in life**. For more examples, check out **IWF's Identity Crisis documentary series**.*

UP FOR DEBATE: EFFECT ON SUICIDALITY

Although many advocates for youth gender transition acknowledge some level of risk associated with these medical treatments, they typically counter that these treatments are necessary to reduce the risk of suicide in gender dysphoric adolescents.

However, researchers disagree on the possibility of an increased suicide risk for trans-identifying children and youth who are not permitted to use one or more of these three medical interventions to physically transition into their preferred gender. **Turban et al. argue** that the suicide rate will increase for children and youth who are not permitted to medically transition. However, **Dhejne et al. found** in their nearly 30-year study on trans-identifying adults that their suicide rate rose significantly 10-15 years after sex-reassignment surgery.*

Manhattan Institute scholar Leon Sapir sheds some light on this issue, writing in **Tablet Magazine** that:

“Much of the public confusion about the suicide issue stems from a simple correlation-causation fallacy. While there is evidence that teenagers who identify as transgender have elevated rates of

suicide and suicidality (a behavior that, researchers emphasize, often involved thoughts of suicide or nonfatal self-harming gestures and should not be confused with actual suicide or serious attempts to end one's life), there is no evidence that their elevated risk is because of unaffirmed gender identity or that social and medical transition will reduce their risk for self-harm. Studies purporting to find that hormones reduce suicidality are typically designed in such a way that valid inferences about cause and effect **cannot be drawn**.”

Many researchers point out that trans-identifying youth suffer disproportionately from **other mental health challenges** (in addition to gender dysphoria) such as depression, anorexia, and autism, which can also predispose them to suicide.

CONCLUSION

The lack of strong evidence for the benefit of gender-transition treatments—in light of the risks of these treatments—has caused some governments, including **the UK, Finland, Sweden, and Norway** to change their policies and limit youth access to these treatments.

In the United States, gender transition patients should be informed of the risk-benefit analysis of puberty blockers, cross-sex hormones, and surgeries. To ignore or minimize the very serious risks associated with gender transitions is to fail to give patients the opportunity to provide informed consent, and this is particularly problematic for adolescent or minor patients. This area of medicine deserves greater study, scrutiny, oversight, and accountability.

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WHAT YOU CAN DO

Get Informed

Learn more about gender transition treatments. Visit:

- [Society for Evidence-Based Gender Medicine](#)
- [Irreversible Damage](#) by Abigail Shrier
- [Genspect](#)

Talk to Your Friends

Help your friends and family understand these important issues. Share this information, tell them about what's going on and encourage them to join you in getting involved.

Become a Leader in the Community

Start an Independent Women's Network chapter group so you can get together with friends each month to talk about a political/policy issue (it will be fun!). Write a letter to the editor. Show up at local government meetings and make your opinions known. Go to rallies. Better yet, organize rallies! A few motivated people can change the world.

Remain Engaged Politically

Too many good citizens see election time as the only time they need to pay attention to politics. We need everyone to pay attention and hold elected officials accountable. Let your Representatives know your opinions. After all, they are supposed to work for you!

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