

Coming Into Light: Hormone Therapy Risks in Transgender Youth

*Recent Studies Begin to Reveal
the Collateral Damage*

“Retrat d’un nen” Paul Gauguin, 1888. SD Museum of Art ©2022 Photo by V.E.Gil

Vincent E. Gil. Ph.D.

Endocrine medicine, the branch that deals with hormones, has enabled novel ways of pausing puberty when children or adolescents exhibit gender identity issues. In these cases, the current treatment approach is to use “puberty inhibitors”—essentially hormone blockers—to give these subjects (and their families) time to figure out *gender identity*, whether it’s congruent with the child or adolescent’s biology . . . or not.

I’ve written a whole chapter on puberty blockers and their effects in my recent book.¹ **Here, I want to focus on current research (2022)** that confirms youth who are put on blockers *do risk substantial medical issues*, issues which were hotly debated, but never documented with large samples. Now, research is showing these issues do occur in fact.

Research is also showing that transgender youth who receive gender-affirming hormone therapy *do indeed risk substantial medical issues as well*, regardless of whether they are transitioning male-to-female, or female-to-male.

First: What do blockers do?

Hormone blockers are most often ‘analogues’ of gonadotropin-releasing hormones. In simple English, these hormones prevent the pituitary from releasing LH (luteinizing hormone) and FSH (follicle stimulating hormone), both of which are needed for pubertal changes to start in pre- and adolescent children. By blocking LH and FSH, the body of males scales down testosterone production; in females, the production of estrogen diminishes. Both hormones are essential for the body to “morph” and progress into fully male or fully female body development.

The central notion was to “pause puberty.” The central assumption was that this treatment was “reversible,” i.e., when stopped, the body would begin its normal course of

¹ Gil, Vincent. *A Christian’s Guide through the Gender Revolution*. Chapter 6: “Manipulating Biology in Children and Teens with Diagnosed Gender Dysphoria.” Portland, OR: Cascade Publishers, 2021, pp. 115-136.

hormone productions again (LH, FSH), and these would trigger added male and female hormones, resuming the body's march toward adult male and female formats.

What risks did we know existed before now?

At the time of writing my cited book (2021), it was already apparent to many researchers that if the normal sequence of development was disrupted—for say, a year or two—and then resumed, that the child/adolescent involved would have lost growth and maturation, both of which are not “reversible.” An inch or two of height; a loss of genital growth, breast growth, body maturation, isn't “made up” by resuming body hormones to normal levels. The body that is *stunted* remains *stunted*. When allowed to continue its development, the body will never really overcome the deficits in growth or maturation caused by such a period of pause.²

We've also known that it is during pubescence and puberty that the brain is ‘bathed’ by the appropriate hormone for the sex of the person, and in doing so furthers some elemental differences in structures of the male and female brain, what we call *brain dimorphism*. (It's not that male and female brains are “different,” it's that the hormones create distinct pathways as their brains interact with the developing body. In effect, the *endogenous* (originating within the organism) body masculinization or feminization possibly helps to identify the body's genitals with the learning of gender.³ One can surmise that to suppress hormone activity during these “critical periods” of development could have a deleterious effect in not only enabling erotic imagery, but also not identifying well with one's anatomical body.

It was also unclear, but suspected, that children who underwent puberty suppression and stopped, would be unable to develop normal reproductive functions.⁴ Hruz et al. also suggested bone and muscle development could be affected, implying that such children could experience substantial bone loss over time.⁵

What new data show

Researchers are now studying in earnest both **puberty-delaying and gender-affirmative (hormone) therapies** in adolescents, given that valid reports point to a stark generational shift in the growth of transgender youth, now at around 2% of all youth, and 18% of those between 13–17.⁶

² Hruz, Paul, et al., “Growing Pains: Problems with Puberty Suppression in Treating Gender Dysphoria.” *New Atlantis* 52 (2017) 3–36.

³ Cretella, M. “Gender Dysphoria in Children and the Suppression Debate,” *Journal of American Physicians and Surgeons* 21 (2016), 50–54.

⁴ Hruz, et al, 26.

⁵ Hruz, et al., 28

⁶ Centers for Disease Control health surveys were analyzed by the *New York Times* (Azeen Goryahzi reporting), June 10, 2022. See table below:

Natalie Nokoff, MD, from the University of Colorado School of Medicine, reports on the long-term effects of *both* puberty suppression and gender affirming therapies.⁷ In one of her recent studies, youth on suppression GnRH agonists were shown to be at greater risk of adverse changes in *body composition* and *cardiometabolic health*, vs. youth who were not on suppression agonists.

These studies also show that problems worsen when subsequently, *these adolescent patients receive sex steroid hormones to start transitioning* (to male, *testosterone*; to female, *estradiol*); and that problems *continue* as sex steroid hormone levels *increase*.

In 2022, Nokoff and co-investigators Valentine, et al., reported that transgender youth who had puberty suppression hormones, and who had followed with testosterone or estradiol, had **higher odds of being overweight or obese** over time. Female to male transgender youth prescribed *testosterone* also had **higher cholesterol or fats in the blood**, and **liver dysfunction**. Added to these were findings of **hypertension** (blood pressure dysregulation) in those prescribed testosterone. Male to female transgender youths who were prescribed *estradiol* fared slightly better in odds-ratios of cardiometabolic-related diagnoses.⁸

These researchers concluded,

*This large, geographically diverse cohort of transgender youth had a higher odds of being diagnosed with dyslipidemia (cholesterol/fats in the blood), and metabolic syndrome (in both natal sexes), as well as elevated body-mass index (BMI).*⁹

As if these findings weren't enough to generate pause, the Nokoff et al. studies also confirmed what was suspected earlier: that **bone density loss** was also occurring in transgender youth treated with suppression hormones.¹⁰ "The risk of bone loss is real" said Michelle O'Connell from Royal Children's Hospital (Australia), when asked to

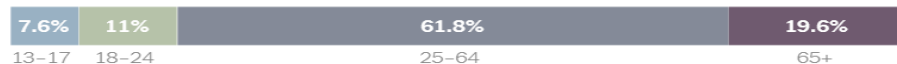
Transgender Estimates by Age

Teenagers and adults under 25 make up an estimated 43 percent of the transgender population.

Ages of teens and adults who are transgender



Ages of all teens and adults in the United States



By The New York Times | Source: Williams Institute

⁷ Nokoff, Natalie. "Medical Interventions for Transgender Youth." *Endotext*, January 19, 2022. www.endotext.com

⁸ Valentine, et.al., op.cit.

⁹ Valentine, et al., *ibid*.

¹⁰ Nokoff, Natalie. "Longer Treatment with Puberty-Delaying Medication in Transgender Youth Leads to Lower Bone Mineral Density." Guest Presentation at ENDO 2022, the Endocrine Society Annual Meeting. Atlanta, GA, June 12, 2022.

comment on the findings.¹¹ O’Connell suggests monitoring of bone health as a necessary risk-prevention strategy in all transgender-diverse youth treated with GnRH, to both limit the potential for **bone fractures**, and any substantial negative effects on **lumbar (spinal) bone density** over time. O’Connell underscores the limited agreement on clinical risks involved in GnRH suppression therapy, or how those risks can be avoided.¹²

Nokoff warned, “We need more information on treatment with puberty-delaying medications [and] introducing gender-affirming hormones.”¹³

And the reason is simple: the **World Professional Association for Transgender Health** (WPATH) guidelines for treatment of gender-diverse children and youth *preceded* the usual plethora of controlled studies on the **long-term effects** of any treatment being recommended.¹⁴ As I’ve reported, the “rush to treat” in defense of the ensuing “torment” of pubescent development in the “wrong body,” made it seem that treatment “saved children” from the “horrors” of physically “wrong maturation.”¹⁵ Few were looking for side effects. . . or more to the point here, the medical conditions that could ensue.

What’s the bottom line here?

If there is one, to be certain then, it’s the *fact* that our surge of gender dysphoria-like cases only perpetuates “gender-affirming care,” which often does not take into consideration—nor adequately communicates—those risks which transitions bring.

Moreover, some early proponents of gender affirmation treatments are now ‘dialing back’ what is now being called an “overcorrection”—that “every problem can be solved quickly with medication, or ultimately, surgery.”¹⁶ And that, in itself, has furthered dispensing medicine without following strict counseling and assessment guidelines that govern this type of treatment—which if followed, would spare many youth from irreversible decisions.¹⁷

¹¹ Bosworth, T. “Transgender Youth on Hormone Therapy Risk Substantial Bone Loss” *Medscape* (July 2022). <https://www.medscape.com/viewarticles976777>.

¹² Bosworth, op.cit.

¹³ Nokoff, Natalie, in interview with *Medscape’s* Ted Boswoth, who reported on Medscape.com her work and presentations at the recent ENDO 2022 Endocrine Society Annual Meeting (Atlanta, May 2022). <https://medscape.com/viewarticle/976777>.

¹⁴ World Professional Association for Transgender Health is a nonprofit who has issued *Standards of Care for Transgender Persons*, the effects of which have become the ‘gold standard’ for care and treatment in the U.S. and developed countries. The guidelines were first issued in 1980 and revised through 2011. But in 2011, the “Dutch Protocol” for treatment which WPATH adopted did not have the kind of long-term effects research behind it that is now appearing!

¹⁵ Gil, p.119.

¹⁶ Edwards-Leeper, Laura, and Erica Anderson. “The Mental Health Establishment is Failing Trans Kids.” *The Washington Post*, November 24, 2021 (Interviewed by Daryn Ray.)

¹⁷ Edwards-Leeper, L., and E. Anderson, op.cit.

Through current research we now find—finally—that the very medications which were stated to “prevent” issues can create other larger ones to be considered; or if already experienced, to then be monitored life-long.

I wrote this piece to inform parents and young adults to be aware of the entire spectrum of issues to consider, the research that needs to be read, if there is to be an adolescent gender accommodation or transition. Such need to include being truthful about *what we now know*, what *should be taking place* vs. *what often does take precedence*; with a hope that future corrections to this morass, so critical to the health of our youth, won't become another culture war.

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