No. 16-273

In The
Supreme Court of the United States

GLOUCESTER COUNTY SCHOOL BOARD,

Petitioner,

v.

G.G., by his next friend and mother, DEIRDRE GRIMM,

Respondent.

On Writ Of Certiorari To The United States Court Of Appeals For The Fourth Circuit

BRIEF OF *AMICI CURIAE* DR. PAUL R. MCHUGH, M.D., DR. PAUL HRUZ, M.D., PH.D., AND DR. LAWRENCE S. MAYER, PH.D. IN SUPPORT OF PETITIONER

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TABLE OF CONTENTS

TABLE OF AUTHORITIES

TABLE OF AUTHORITIES – Continued

TABLE OF AUTHORITIES – Continued

TABLE OF AUTHORITIES – Continued

Page

TABLE OF AUTHORITIES – Continued

Page

INTEREST OF *AMICI CURIAE*[1]

Amicus curiae Paul R. McHugh, M.D. is the University Distinguished Service Professor of Psychiatry at the Johns Hopkins University School of Medicine. From 1975 until 2011, Dr. McHugh was the Henry Phipps Professor of Psychiatry and the director of the Department of Psychiatry and Behavioral Science at Johns Hopkins. At the same time, he was psychiatrist-in-chief at the Johns Hopkins Hospital with overall responsibility for the proper care and treatment of patients with, among other issues, sexual disorders.

Amicus curiae Paul W. Hruz, M.D., Ph.D. is Associate Professor of Pediatrics and Chief of Pediatric Endocrinology at Washington University School of Medicine. He also holds an appointment as Associate Professor of Cell Biology and Physiology. Dr. Hruz is an active member of the Washington University Disorders of Sexual Development ("DSD") Interdisciplinary Team. Over the past twenty years, Dr. Hruz has participated in the care of hundreds of children with DSDs.

Amicus curiae Lawrence S. Mayer, M.D., Ph.D. is a professor of statistics and biostatistics at Arizona

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[1] Parties to this case have consented to the filing of this Brief. As reflected in the Court's docket on November 22, 2016, counsel for Petitioner consented to the filing of *amicus curiae* briefs in support of either party or of neither party. A letter indicating Respondent's consent is on file with the Clerk. *Amici* state that no counsel for a party authored this Brief in whole or in part. The Witherspoon Institute provided financial support for printing this Brief; otherwise, neither the parties nor anyone else contributed financial support for this Brief.

State University and a Scholar in Residence in the Department of Psychiatry at the Johns Hopkins University School of Medicine. Before July 1, 2016, he was an Adjunct Professor of Psychiatry and Public Health in the Bloomberg School of Public Health and School of Medicine at Johns Hopkins University and a member of the research faculty at Mayo Clinic. Dr. Mayer has lectured and published extensively on models of human development including adolescent and teen psychosexual development.

Drs. McHugh, Hruz, and Mayer appear as *amici* to critically evaluate, on the basis of their clinical and scientific expertise, the Fourth Circuit's mandate, which was urged upon that court by the Respondent, that school districts (and other affected entities) enforce "gender-affirming" policies and practices for students who identify as a gender that is different from their biological sex. These policies include providing these children with unimpeded access to restrooms and other private areas according to their self-identified gender.

Amici do not in this Brief address the considerable distress that some children (a little girl, say) are likely to experience if they are exposed in a bathroom, shower, or locker room to someone who identifies as being her sex (female), but who is, according to all or most appearances, a member of the opposite sex (male). *Amici* instead focus on the children these policies are intended to help – those (like Respondent) who are "transgendered" in that they have an insistent, persistent and consistent identification as the opposite sex.

Amici consider the medical and scientific evidence bearing upon the question: Does the Fourth Circuit's ruling help or harm these vulnerable and needy children?

SUMMARY OF ARGUMENT

Amici are physician scientists who do not hold themselves out as experts in any area of the law including statutory construction. They proffer no account of what was being debated at the time of the passage of Title IX and its ban upon sex discrimination. *Amici* leave the legal arguments to others.

Amici nonetheless observe that the legal issues in this lawsuit center upon the meaning of the term *sex* in Title IX, added in 1972 to the federal Civil Rights Acts. *Amici* further observe that, for the duration of their long professional careers (McHugh graduated from Harvard Medical School in 1956, Hruz has treated sexual disorders in children for twenty years, and Mayer began working as a medical doctor in 1970), the term *sex* has almost invariably referred to one's being male or female in the objective, biological sense. *Amici* note too that the term *gender* came into use to indicate something quite different from *sex* – namely, a society's expectations for how males and females should behave. *Sex* is innate, fixed, and binary; *gender* is a fluid cultural construct.

Amici do not claim to know exactly how or why Respondent and the Fourth Circuit came to so thoroughly

confuse *sex* and *gender* (or to transpose them, as if gender was innate and fixed at birth, while sex was malleable and the body configurable to one's sense of gender identity). But this confusion is surely founded, at least in part, upon a host of mostly unsupported, and some glaringly mistaken, assertions regarding what the contemporary scientific research has shown.

Respondent maintains that, although in every biological and physiological way a girl, she is *really* a boy.[2] But gender is culturally defined. Currently in the United States, it is defined as a persistent identification with a set of norms promoted by society as the behaviors, attitudes, and preferences associated with each sex. The definition is not biological. Choosing a gender – i.e., deciding to live as one sex or the other – neither is caused by nor causes any biological changes. There is no credible scientific literature that suggests that a person's choice of gender affects their biology in any way. One's sense of self and one's desire to present to others as a member of the opposite sex have no bearing whatsoever upon the objective biological reality that one is male or female.

No doubt many people, including some children, experience disquiet with their sex. They struggle with the project of identifying with their sex. Some feel a distressing and persisting incongruity between their sex and their sense of themselves as male or female.

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[2] G.G. says, "I was born in the wrong sex," App. 151a, meaning (evidently) that she was at birth a boy, albeit one saddled with a girl's body.

But no matter how disturbing this condition of *gender dysphoria* may be, nothing about it affects the objective reality that those suffering from it remain the male or female persons that they were at conception, at birth, and thereafter – any more than an anorexic's belief that she is overweight changes the fact that she is, in reality, slender.

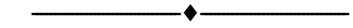
In this Brief, *amici* leave aside all questions about how best to treat gender dysphoria in adults. *Amici* focus instead on how to treat children and adolescents like G.G. who suffer from this psychological disorder. More exactly, *amici* critically evaluate the scientific bases, if any, for the gender-affirming policies the Fourth Circuit has required.

According to the court below, school districts are required by law to treat students in accordance with their asserted gender identity instead of their biological sex. There is, however, no scientific evidence that such a gender-affirming mandate helps the children it aims to help.

In fact, and to the contrary, there is abundant scientific evidence that (1) the Fourth Circuit's mandated policy does none of the children it is meant to serve any real or lasting good; (2) it harms the vast majority of them; and (3) it leads to catastrophic outcomes for many such afflicted children.

Amici conclude, based upon decades of academic study and clinical experience in the fields of psychiatry, psychology, and the biological bases of both of those

fields, that the Fourth Circuit has mandated a scientifically unwarranted, dangerous experiment upon our nation's children, with no apparent consideration at all of its far-reaching implications.



ARGUMENT

I. A Child's *Gender Identity* Has No Bearing on His or Her *Sex*.

Sex and *gender* represent two very distinct features of our world. While *sex* is binary and objective, determined fundamentally by one's chromosomal constitution, and ultimately by clearly defined reproductive capacities, *gender* is a subjective sense of a social role generated by cultural norms. Respondent maintains that her subjective sense of herself – i.e., her *gender identity* – is and should be accepted as her sex. That is simply not the case.

The central underlying basis for *sex* is the distinction between the reproductive roles of males and females. *See* Lawrence S. Mayer and Paul R. McHugh, *Sexuality and Gender: Findings from the Biological, Psychological, and Social Sciences*, New Atlantis, Fall 2016, at 89-90. In biology, an organism is male or female if it is biologically and physiologically designed to perform one of the respective roles in reproduction. This definition does not depend upon amorphous physical characteristics or behaviors; it requires understanding the reproductive system and its processes.

Reproductive roles provide the conceptual basis for the differentiation of animals into the biological categories of male and female. There is no other widely accepted biological classification for the sexes. One's reality as male or female is more than a matter of reproductive "plumbing." Sex is a physiological reality which permeates every cell of an organism.

Sex is thus innate and immutable. The genetic information directing development of male or female gonads and other primary sexual traits, which normally are encoded on chromosome pairs "XY" and "XX," are present immediately upon conception. As early as eight weeks' gestation, endogenously produced sex hormones cause prenatal brain imprinting that ultimately influences postnatal behaviors. *See* Francisco I. Reyes *et al.*, *Studies on Human Sexual Development*, 37 J. of Clin. Endocrinology & Metabolism 74-78 (1973); Michael Lombardo, *Fetal Testosterone Influences Sexually Dimorphic Gray Matter in the Human Brain*, 32 J. of Neuroscience 674-80 (2012); Geneva Foundation for Medical Education and Research, "Human Sexual Differentiation" (2016), *available at* http://www.gfmer.ch/Books/Reproductive_health/Human_sexual_differentiation.html. It is therefore not the reproductive system alone that carries one's sexual identity. Every cell in the body is marked with a sexual identity by its chromosomal constitution XX or XY.

Thus, sex is not "assigned" at birth, as Respondent suggests; rather, it "declares itself anatomically in utero and is acknowledged at birth." Michelle A.

Cretella, *Gender Dysphoria in Children and Suppression of Debate*, 21 J. of Am. Physicians & Surgeons 50, 51 (2016). A baby's sex – male or female – is recognized and recorded at birth.

In contrast, *gender* has come to refer to "the socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for boys and men or girls and women," which "influence the ways that people act, interact, and feel about themselves." American Psychological Association, *Answers to Your Questions About Transgender People, Gender Identity and Gender Expression* (2011), *available at* http://www.apa.org/topics/lgbt/transgender.pdf. A child's *gender* reflects the extent to which he or she conforms to or deviates from socially normative behavior for boys or girls.

When it is defined in this manner, gender is fuzzy and mercurial. There is no objective definition for what it means to behave like a boy or a girl. Moreover, what is considered gender-typical behavior for boys and girls changes over time within a given culture[3] and varies between cultures. A girl who behaves like a tomboy may modify her behavior as she ages, and a boy who

[3] Just a few decades ago, in the United States it would have been atypical for women to attend law school or medical school. It is projected that women will outnumber men in law schools in 2017. Debra Cassens Weiss, "Women Could Be a Majority of Law Students in 2017; These Schools Have 100-Plus Female Majorities," ABA Journal, Mar. 16, 2016, http://www.abajournal.com/news/article/women_could_be_majority_of_law_students_in_2017_these_schools_have_100_plus.

prefers quiet play may eventually develop an interest in sports or hunting. Consequently, *gender* is a fluid concept with no truly objective meaning. Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* 6-7 (1990) (stating that "[g]ender is neither the causal result of sex nor as seemingly fixed as sex," but rather "a free-floating artifice, with the consequence that *man* and *masculine* might just as easily signify a female body as a male one, and *woman* and *feminine* a male body as easily as a female one") (emphases in original).

II. *Gender Dysphoria* Is a Psychological Disorder Distinguished by Confused and Distressed Thinking About the Reality of One's Sex.

A gender dysphoric child such as Respondent experiences a marked sense of incongruity between the gender expectations linked to her biological sex and her biological sex itself. Tomer Shechner, *Gender Identity Disorder: A Literature Review from a Developmental Perspective*, 47 Isr. J. of Psychiatry & Related Sci. 132-38 (2010). Gender dysphoric boys subjectively feel as if they are girls, and gender dysphoric girls subjectively feel as if they are boys – according to their sense (at whatever stage of childhood they happen to be) of what that feeling of being a member of the opposite sex must be like. *See* American Psychological Association, *Diagnostic & Statistical Manual of Mental Disorders* [hereinafter, "*DSM-5*"] 452 (5th ed. 2013).

Yet those subjective feelings, strong as they may be, cannot and do not constitute (or transform) objective reality. Cretella, *supra*, at 51 ("[T]his 'alternate perspective' of an 'innate gender fluidity' arising from prenatally 'feminized' or 'masculinized' brains trapped in the wrong body is an ideological belief that has no basis in rigorous science."); J. Michael Bailey and Kiira Triea, *What Many Transsexual Activists Don't Want You to Know and Why You Should Know It Anyway*, 50 Perspectives in Biology & Med. 521-34 (2007) (finding little scientific basis for the belief that male-to-female transsexuals are women trapped in men's bodies). A gender dysphoric girl is not a boy trapped in a girl's body, and a gender dysphoric boy is not a girl trapped in a boy's body.[4] Respondent is a girl, even though she feels the way she thinks a boy feels.

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[4] Studies of brain structure and function have not demonstrated any conclusive, biological basis for transgenderism. *See* Giuseppina Rametti *et al*., *White Matter Microstructure in Female to Male Transsexuals Before Cross-sex Hormonal Treatment. A Diffusion Tensor Imaging Study*, 45 J. of Psychiatric Res. 199-204 (2011) (offering no evidence to support the hypothesis that transgenderism is caused by differences in the structure of the brain); Giuseppina Rametti *et al.*, *The Microstructure of White Matter in Male to Female Transsexuals Before Cross-sex Hormonal Treatment. A DTI Study*, 45 J. of Psychiatric Res. 949-54 (2011) (same); Emiliano Santarnecchi *et al*., *Intrinsic Cerebral Connectivity Analysis in an Untreated Female-to-Male Transsexual Subject: A First Attempt Using Resting-State fMRI*, 96 Neuroendoctrinology 188-93 (2012) (in a study of brain activity, finding that a transsexual's brain profile was more closely related to his biological sex than his desired one); Hans Berglund *et al*., *Male-to-Female Transsexuals Show Sex-Atypical Hypothalamus Activation When Smelling Odorous Steroids*, 18 Cerebral Cortex 1900-08 (2008) (in a study of brain activity, finding no support for

III. There Is No Scientific or Medical Support for Treating Gender Dysphoric Children in Accordance with Their *Gender Identity* Rather than Their *Sex*.

In standard medical and psychological practice, a child who has a persistent, mistaken belief that is inconsistent with reality is not encouraged in his or her belief. *See* Cretella, *supra*, at 51 (listing other similar such conditions); Anne Lawrence, *Clinical and Theoretical Parallels Between Desire for Limb Amputation and Gender Identity Disorder*, 35 Archives of Sexual Behavior 263-78 (2006) (finding similarities between body integrity identity disorder and gender dysphoria). For instance, an anorexic child is not encouraged to lose weight. She is not treated with liposuction; instead, she is encouraged to align her belief with reality – i.e., to see herself as she really is. Indeed, this approach is not just a good guide to sound medical practice. It is common sense.

Until recently this was precisely how gender dysphoric children were treated. Dr. Kenneth Zucker, long acknowledged as one of the foremost authorities on gender dysphoria in children, spent years helping his

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the hypothesis that transgenderism is caused by some innate, biological condition of the brain). Some researchers believe that transgenderism can be attributed to other biological causes, such as hormone exposure in utero. *See, e.g.*, Nancy Segal, *Two Monozygotic Twin Pairs Discordant for Female-to-Male Transsexualism*, 35 Archives of Sexual Behav. 347-58 (2006) (examining two sets of twins and hypothesizing, without evidence, that uneven prenatal androgen exposures led one twin in each set to be transsexual). Presently, no scientific evidence supports that belief.

patients align their subjective gender identity with their objective biological sex. He used psychosocial treatments (talk therapy, organized play dates, and family counseling) to treat gender dysphoria and had much success.[5] *See* Cretella, *supra*, at 51 (describing his work); Kenneth J. Zucker *et al.*, *A Developmental, Biopsychosocial Model for the Treatment of Children with Gender Identity Disorder*, 59 J. of Homosexuality 369-97 (2012).

Dr. Zucker's eminently sound practice is anchored by recognition of the ineradicable reality that each child is immutably either male or female. It is also influenced by the universally recognized fact that gender dysphoria in children is almost always transient: the vast majority of gender dysphoric children naturally reconcile their gender identity with their biological sex. All competent authorities agree that between 80 and 95 percent of children who say that they are transgender naturally come to accept their sex and to enjoy emotional health by late adolescence. The American College of Pediatricians, for example, recently concluded that approximately 98 percent of gender-confused boys, and 88 percent of gender-confused girls,

[5] In a follow-up study by Dr. Zucker and colleagues of children treated by them over the course of thirty years at the Center for Mental Health and Addiction in Toronto, they found that gender dysphoria persisted in only three of the twenty-five girls they had treated. Kelley D. Drummond *et al*., *A Follow-up Study of Girls with Gender Identity Disorder*, 44 Developmental Psychology 34-45 (2008).

naturally resolve.[6] The American Psychological Association's Diagnostic and Statistical Manual of Mental Disorders concurs. *DSM-5*, *supra*, at 455.

Traditional psychosocial treatments for gender dysphoria, such as those employed by Dr. Zucker, are therefore prudent and natural; they work with and not against the facts of science and the predictable rhythms of children's psycho-sexual development. They give gender dysphoric children the opportunity to reconcile their subjective gender identity with their objective biological sex without any irreversible effects or the use of harmful medical treatments.

Although some researchers report that they have identified certain factors which are associated with the persistence of gender dysphoria into adulthood,[7] there is no evidence that any clinician can identify the perhaps one-in-twenty children for whom gender dysphoria will last with anything approaching certainty. Because such a large majority of these children will surely naturally resolve their confusion, proper medical practice calls for a cautious, wait-and-see, approach for all gender dysphoric children. This sensible approach can be and often is rightly supplemented in many cases by family or individual psychotherapy to

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[6] American College of Pediatricians, *Gender Ideology Harms Children*, Aug. 17, 2016, *available at* https://www.acpeds.org/the-college-speaks/position-statements/gender-ideology-harms-children.

[7] *See, e.g.*, Thomas D. Steensma *et al*., *Factors Associated with Desistence and Persistence of Childhood Gender Dysphoria: A Quantitative Follow-up Study*, 52 J. of the Am. Acad. of Child & Adolescent Psychiatry 582-90 (2013).

identify and treat the underlying problems which present as the belief that one belongs to the opposite sex.

Policies and protocols that treat children who experience gender-atypical thoughts or behavior as if they belong to the opposite sex, on the contrary, interfere with the natural progress of psycho-sexual development. Such treatments encourage a gender dysphoric child like the Respondent to adhere to his or her false belief that he or she is the opposite sex. These treatments would help the child to maintain his or her delusion but with less distress by, among other aspects, requiring others in the child's life to go along with the charade. This is essentially what the Fourth Circuit is requiring here. Importantly, there are no long-term, longitudinal, control studies that support the use of gender-affirming policies and treatments for gender dysphoria. Cretella, *supra*, at 52.[8]

The Fourth Circuit's mandated gender-affirming therapy is therefore a novel experiment. In light of all the existing scientific evidence – some more of which we shall explore forthwith – it amounts to nothing more than quackery.

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[8] Nonetheless, gender affirmance is on the rise – particularly among children. Chris Smyth, *Better Help Urged for Children With Signs of Gender Dysphoria*, The Times (London), October 25, 2013, http://www.thetimes.co.uk/tto/health/news/article3903783.ece (stating that the United Kingdom saw a fifty percent increase in the number of children referred to gender dysphoria clinics from 2011 to 2012). There are now forty gender clinics across the United States that provide and promote gender-affirming treatments. Cretella, *supra*, at 52.

IV. Gender-Affirming Policies Generally Harm, Rather than Help, Gender Dysphoric Children.

The Fourth Circuit would require those affected by its writ and who interact with G.G. to affirm (at least implicitly, by action or inaction) that she is a boy. G.G.'s false belief would thus be perpetuated through name and pronoun changes, the "successful" impersonation of the opposite sex within and outside of the home, and "acceptance" (forced, from some) by others that she is really a male. This could be viewed by some as a necessary but basically harmless expedient, a bit of play-acting to help those like G.G. to feel better about themselves during a difficult time in their lives.

There is substantial evidence, however, that this approach is harmful – even when it is viewed on its own terms as a way to help the afflicted child get through a tough time. The American College of Pediatricians recently declared:

> There is an obvious self-fulfilling nature to encouraging young [gender dysphoric] children to impersonate the opposite sex and then institute pubertal suppression. If a boy who questions whether or not he is a boy (who is meant to grow into a man) is treated as a girl, then has his natural pubertal progression to manhood suppressed, have we not set in motion an inevitable outcome? All of his same-sex peers develop into young men, his opposite sex friends develop into young women, but he

> remains a pre-pubertal boy. He will be left psycho-socially isolated and alone.[9]

American College of Pediatricians, *supra*.

It is well-recognized, too, that repetition has some effect on the structure and function of a person's brain. This phenomenon, known as *neuroplasticity*, means that a child who is encouraged to impersonate the opposite sex may be less likely to reverse course later in life.[10] For instance, if a boy repeatedly behaves as a girl, his brain is likely to develop in such a way that eventual alignment with his biological sex is less likely to occur. Cretella, *supra*, at 53. Obviously then, some number of gender dysphoric children who would naturally come to peacefully accept their true sex are prevented from doing so by gender-affirming policies like those mandated by the Fourth Circuit.

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[9] G.G., for example, refuses to use any of the three unisex restrooms made available to all students at her school, because doing so made her feel "stigmatized and isolated." App. 151a. It is not meant as a criticism of G.G. to observe that the real source of her feelings of "isolation" may have nothing to do with using a restroom meant for *anyone* who needs or wants a bit more privacy.

[10] One study showed that the white matter microstructure of specific brain areas in female-to-male transsexuals was more similar to that of heterosexual males than to that of heterosexual females. *See* Giuseppina Rametti *et al*., *White Matter Microstructure in Female to Male Transsexuals Before Cross-sex Hormonal Treatment. A Diffusion Tensor Imaging Study*, 45 J. of Psychiatric Res. 199-204 (2011). The results of that study may be explained by neuroplasticity.

Policies that encourage gender dysphoric children to pursue transgender lifestyles do not exist in an ideological vacuum. Because they are not supported by medical or scientific evidence, one should not be surprised to discover that policies such as that required by the Fourth Circuit are nested within a larger ideology about how to "help" children who believe that they are trapped in the wrong bodies. Although these gender-affirming policies do not themselves *require* pharmaceutical or surgical interventions, corresponding medical treatments – puberty suppression, hormone therapy, and surgical interventions – are a common complement. The more that gender affirmance is promoted to children, the more that children can be expected to accept, and even to pursue, these drastic medical courses.

The gender dysphoric child surrounded by adults and peers who go along with his or her delusion is likely to perceive his natural biological development as a source of distress. Puberty suppressing hormones are then typically used, beginning at age eleven, to prevent the appearance of natural but (in this case) unwanted characteristics of any maturing member of the child's sex. Henriette A. Delemarre-van de Waal and Peggy T. Cohen-Kettenis, *Clinical Management of Gender Identity Disorder in Adolescents: A Protocol on Psychological and Pediatric Endocrinology Aspects*, 155 Eur. J. of Endocrinology S131, S132 (2006). Then, starting at age sixteen, cross-sex hormones are administered in order to induce something like the process of puberty that would normally occur for the opposite sex. *Id.* at S133.

Dr. Michelle Cretella, President of the American College of Pediatricians, has written that these medical treatments are "neither fully reversible nor harmless." Cretella, *supra*, at 53. Puberty suppression hormones prevent the development of secondary sex characteristics, arrest bone growth, decrease bone accretion, prevent full organization and maturation of the brain, and inhibit fertility. *Id.* Cross-gender hormones increase a child's risk for coronary disease and sterility. *Id.* at 50, 53. Oral estrogen, which is administered to gender dysphoric boys, may cause thrombosis, cardiovascular disease, weight gain, hypertriglyceridemia, elevated blood pressure, decreased glucose tolerance, gallbladder disease, prolactinoma, and breast cancer. *Id.* at 53 (citing Eva Moore *et al*., *Endocrine Treatment of Transsexual People: A Review of Treatment Regimens, Outcomes, and Adverse Effects*, 88 J. of Clin. Endocrinology & Metabolism 3467-73 (2003)). Similarly, testosterone administered to gender dysphoric girls may negatively affect their cholesterol; increase their homocysteine levels (a risk factor for heart disease); cause hepatotoxicity and polycythemia (an excess of red blood cells); increase their risk of sleep apnea; cause insulin resistance; and have unknown effects on breast, endometrial and ovarian tissues. *Id.* (citing Moore, *supra*, at 3467-73). Finally, girls may legally obtain a mastectomy at sixteen, which carries with it its own unique set of future problems, especially because it is irreversible. *Id.* (citing Lauren Schmidt, *Psychological Outcomes and Reproductive Issues Among Gender Dysphoric Individuals*, 44 Endocrinology Metabolism Clinics of N. Am. 773-85 (2015). The Hayes

Directory reviewed all the relevant literature on these treatments in 2014 and gave them its lowest possible rating: the research findings were "too sparse" and "too limited" to suggest conclusions. Hayes, Inc., "Hormone Therapy for the Treatment of Gender Dysphoria," *Hayes Medical Technology Directory* (2014).

Children are not legally capable of assessing the severity of these risks or weighing the perceived benefits of gender affirmance (if any) against their many harms. Neurologically, the adolescent brain is immature and lacks an adult capacity for risk assessment prior to the early to mid-20s. Cretella, *supra*, at 53. Yet, gender-affirming policies urge gender dysphoric children to forgo their fertility and jeopardize their physical health in order to avoid the distress of natural physical development.

Parents or guardians would of course have to consent to these interventions on behalf of their minor children. Even assuming that these adults have the true best interests of their children at heart, how many of them are going to be well-informed of the truth about gender dysphoria, especially where their children have already been treated (at school, and anywhere else that the court's mandate runs) as members of the sex to which these interventions promise greater access?

Finally, gender-affirming policies aggressively promote the false notion that a child such as G.G. is trapped in the wrong body; indeed, that is precisely these policies' presupposition, even their *raison d'etre*.

Naturally, then, many gender dysphoric children will seek (once they reach the age of maturity) the closest thing to their desired body which modern medicine can offer them. Simply put: policies such as those at issue in this lawsuit will cause some young adults who would have realigned with their true sex to instead attempt to change it through surgery.

Sadly, there is no good evidence that this dramatic surgery produces lasting benefits.[11] Upon reviewing all the evidence for the beneficial effects of attempted sex reassignment surgery, the Hayes Directory stated that "only weak conclusions" were possible, due to "serious limitations" in the research to date. Hayes, Inc., "Sex Reassignment Surgery for the Treatment of Gender Dysphoria," *Hayes Medical Technology Directory* (2014); *see also* Cecilia Dhejne *et al.*, *Long-Term Follow-up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden*, PLoS ONE, Feb. 22, 2011 (suggesting that sex reassignment surgery may not rectify the comparatively poor health outcomes associated with transgender populations); Annette Kuhn *et al.*, *Quality of Life 15 Years After Sex Reassignment Surgery for Transsexualism*, 92 Fertility & Sterility 1685-89 (2009) (finding considerably lower general life satisfaction in post-surgical transsexuals as compared with females who had at least one pelvic

[11] One study (Annelou L.C. de Vries *et al.*, "Young Adult Psychological Outcomes After Puberty Suppression and Gender Reassignment," 134 *Pediatrics* 696-704 (2014)) reported some short-term benefits. But the authors made no effort to assess long-term effects, and their study was, in any event, not properly controlled.

surgery in the past); Jon K. Meyer and Donna J. Reter, *Sex Reassignment: Follow-up*, 36 Archives of Gen. Psychiatry 1010-15 (1979) (in an assessment comparing the well-being of post-operative transsexuals to transsexuals who did not have surgery, concluding that "sex reassignment surgery confers no objective advantage in terms of social rehabilitation").

There is considerable evidence, on the other hand, that "sex-change" surgery poses very serious health risks. *See* David Batty, *Mistaken Identity*, The Guardian, July 30, 2014, http://www.theguardian.com/society/2004/jul/31/health.socialcare (in an assessment of more than 100 follow-up studies on post-operative transsexuals, concluding that none of the studies proved that sex reassignment is beneficial for patients or thoroughly investigated "[t]he potential complications of hormones and genital surgery, which include deep vein thrombosis and incontinence"). One "risk" is for sure: anyone who goes through with "sex-change" surgery will never be able to engage in a reproductive sexual act.

CONCLUSION

The Fourth Circuit has mandated an experimental "one-size-fits-all" policy of gender affirmance. Underlying that directive is the assumption that treating gender dysphoric children in accordance with their self-proclaimed gender identity rather than their

biological sex is beneficial to them. But there is no scientific evidence to support that rosy presupposition; on the contrary, the evidence shows that affirming any child's mistaken belief that he or she is a prisoner of the wrong body is ultimately harmful to that child.

We agree with the American College of Pediatricians' conclusion that conditioning children into believing that a lifetime of impersonating someone of the opposite sex, achievable only through chemical and surgical interventions, is a form of child abuse.

Respectfully submitted,

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