



# Children transitioning:

CHILDHOOD GENDER DYSPHORIA  
A paediatrician's warning to New Zealand

By Dr John Whitehall  
October 2018

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This Report is an Extract from the book ***TRANSGENDER: one shade of grey - The legal consequences for man & woman, schools, sport, politics, democracy*** by Patrick J Byrne - with guest chapters by Professor John Whitehall and Lane Anderson (a pseudonym), Wilkinson Publishing, 2018.

Available at <https://shop.newsweekly.com.au/product/transgender-one-shade-of-grey/>

## ABOUT THE AUTHOR



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Dr Whitehall spoke at Family First's *Forum on the Family* in 2017. His presentations can be viewed at [www.forumonthefamily.nz](http://www.forumonthefamily.nz)

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## EXECUTIVE SUMMARY

An epidemic of 'childhood gender dysphoria' is sweeping the Western world. Having exploded from rarity less than a decade ago, there is now an exponential increase in the number of children being presented to specially created units in major children's hospitals with the complaint 'they have been born in the wrong body' and 'belong' in that of the opposite sex. Such a problem in identity does not surprise in its depth of pain, both for the children and, usually, for the parents.

The good epidemiological news is that most children confused about their gender will orientate through puberty to the one with which they were born. In the great majority, nature's innate chemical and hormonal processes can be depended upon to do their job.

This statistical assurance is, however, not heeded by some professionals who feel bound to introduce the affected child to a medical pathway that commences with the psychological strategy of social affirmation in the role of the opposite sex: names, pronouns, hairstyles, dress and toileting facilities of the opposite gender are supported (if not enforced) by the authority figures in the child's life: parent(s), teachers and peers.

Such programming is likely to lead to the next stage of therapy: the administration of drugs to block the natural process of puberty with the expressed intention of giving the child more time to contemplate his or her gender and procreative future.

Most children who are 'blocked' then progress to the next stage of therapy, the administration of cross sex hormones to evoke physical characteristics of the opposite sex. This escalation may then proceed to surgical intervention in further pursuit of those opposite characteristics. In this stage, for example, natal girls may undergo bilateral mastectomy.

The final stage of the medical pathway is the life time of supervision of the effects of unnatural hormones, whatever urogenital surgery was attempted and whatever psychological problems remain. In this process of 'transformation' to the opposite sex, castration is inherent.

Such a massive intervention into the minds and bodies of children could be expected to be based on a concrete body of scientific experimentation but, astonishingly, that is not the case.

There is no biological basis to the confusion over gender: it has the hallmarks of a psychological fad, fanned by an uncritical, sensationalist media, given direction by private websites and even government funded programmes of 'education' known euphemistically in Australia as 'Safe Schools Programmes', and encouraged by peer pressure.

Sadly, the most vulnerable of children appear to be at particular risk: numerous reviews reveal the majority of children confused about their gender also suffer from diagnosed mental disorders, such as depression and anxiety. Moreover, there is an extraordinary representation of children with Autism Spectrum Disorder whose appreciation of reality is already known to be challenged.

Not surprisingly, reports reveal many of the children are from broken homes. And what ought to be an added warning: reports reveal a high association with personality disorder in parents, especially mothers.

Proponents of the medical pathway declare it is necessary to prevent suicide but, again, there is no evidence that gender dysphoria in children, per se, is associated with a higher risk of suicide. The accompanying mental and family disorders, however, are known to be associated with self-harm and, therefore, an affected child (and family) deserves close attention and compassion.

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to be at least 20-times that of the general population, perhaps suicide may be prevented by compassionate 'watchful waiting' for the natural effects of puberty to orientate the child in the direction of its chromosomes, while applying standard therapy to the associated mental disorder.

Proponents of the pathway declare the blocking of puberty to be 'safe and entirely reversible', but review of adults administered 'blockers' to reduce the production of sex hormones considered to be stimulating abnormal cell growth (as in prostate cancer in men and endometriosis in women), has suggested interference with brain function, which has been confirmed in veterinary studies. The limbic systems of 'blocked' sheep reveal sustained structural and functional damage: the activity of hundreds of genes has been found to be altered, leading to sustained interference in memory and emotions.

These side effects are not mentioned by proponents who argue blocking puberty provides opportunity for the child to consider its sexual identity but how can this occur when the natural process of sexualisation within the brain and the body is blocked?

Proponents acknowledge many metabolic side effects of cross-sex hormone therapy, thus confirming the need for sustained medical supervision but do not mention effects on the brain. For example, MRI studies have found that the adult male brain exposed to oestrogen shrinks at a rate ten times faster than ageing, after only four months of exposure. What will happen to the growing brain exposed to cross sex hormones for life?

Proponents argue that bilateral mastectomy may be performed on confused girls to help them approximate the bodily dimensions of a male, and at least five girls have had this procedure in Australia: two at 15, one at 16, and two at 17 years of age. Proponents offer the sophistry that these effects are 'reversible', as if breast feeding was irrelevant and all that mattered was siliconised shape.

There is no scientific evidence in medical literature to support the massive interventions of the medical pathway. To the contrary, there are multiple expressions of the need for evidence, and lamentations about its lack. Society and governments are being led by so-called 'expert opinion'.

The phenomenon of childhood transgendering sweeping the Western world has an ideological base: 'gender fluidity' which maintains no such thing as binary differentiation of the sexes into males or females: everyone exists on a 'locus' or spot within a rainbow of gender identity depending on inner conviction. Moreover, this locus is not necessarily fixed, and gender identity can change according to the vagaries of inner feelings.

This ideology of gender fluidity is gaining power exponentially. Only a few years ago, the declaration that there were no such entities as girls and boys might have been received with forbearance fitting fantasy of a flat earth. But things are different now and, in many countries, there are many true believers. Perhaps reflecting depth of conviction, or maybe insecurity, believers have enjoyed much success in convincing lawmakers (and other authorities) to compel compliance with their ideas. Evangelism is being buttressed by coercion.

This article is based on published literature and considers the epidemiology, the nature of confused children, the stages of the medical pathway, the established effects, and some of the relevant laws. It challenges proponents of the pathway to confront the scientific literature and not ignore its findings. It offers 'scientific debate' and refuses to be silenced by accusations of 'transphobia' or 'right wing panic'.

To the contrary, it acknowledges and seeks to reduce the great suffering of confused children, but is based on the fundamental Hippocratic principle: 'First, do no harm'.

The warning to New Zealand is that the massive intervention in the minds and bodies of children inflicted by the medical pathway of transgendering has no scientific basis. From the United States to Europe there is no scientific proof of validity. To the contrary, there are scientific findings of sustained side effects. The medical pathway is based only on ideology, and claims of 'success' reflect beliefs, not science. Even worse, these beliefs are not negotiable: they have become coercive.

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## INTRODUCTION

Gender dysphoria is defined as “clinically significant distress or impairment in social, school, or other important areas of functioning” due to “a marked incongruence between one’s experienced/expressed gender and assigned gender”<sup>1</sup>.

Formerly rare, recently there has been a phenomenal increase in the number of children being brought to specially created gender dysphoria clinics in children’s hospitals throughout the Western world, including Australia. This increase has been associated with much publicity of transgender options in the media, the web and in transgender sex education programs in schools. No one knows the cause for the epidemic but it bears the hallmarks of a behavioural fad. Nevertheless, it is dangerous because medical treatment can involve hormones that interfere with the brain as well as the body, and can progress to irreversible surgery in the attempt to mimic external characteristics of the opposite sex. The fad is the ideology known as transgenderism.

Recent years have seen the growth of the drama of children alleged to be questioning their gender. Their plight emerges from the backdrop of a sensationalist and uncritical media, adulation for those transitioning on transgender websites, and transgender school programmes like that of the Safe Schools Coalition Victoria and RainbowYouth and Family Planning in New Zealand. The drama is now enacted throughout society: requirements for gender-neutral language, birth certificates changed, anti-discrimination provisions made in law, and special clinics opened at children’s hospitals to help children transition to the opposite of their birth sex.

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It used to be considered that the claim by a child that it was not a member of the sex denoted by its genitals indicated that the child was considered to be suffering from Gender Identity Disorder, not dissimilar from Body Identity Disorder, in which some people want to have healthy body parts removed; or Anorexia Nervosa, in which sufferers are deluded that they are overweight. In 2013, however, proponents of the transgender ideology were able to convince opposition in various editorial committees of their belief that there was no such thing as fixed gender identity and, therefore, the claim to have been born in the wrong body did not denote a psychological disorder. Illness, if at all associated with this concept, was only due to the distress caused by failure of society to affirm a person’s gender identity.

In 1980, the psychiatric texts diagnosed this condition as Gender Identity Disorder (GID). In 2013, GID was reassigned as a normal phenomenon unless there was associated distress, in which case the problem was to be known as Gender Dysphoria.<sup>2</sup> As failure of society to accept the phenomenon was claimed to be the cause of such distress, a program of preventative education would be necessary. At the same time, laws were being changed to protect a person’s gender identity and to impose penalties on those who were considered as discriminating against those who wanted to be recognised by their gender identity, not their sex.

Just as the world has suffered from utopian political ideologies in the 20<sup>th</sup> century, patients have suffered from certain enthusiasms of the medical profession that have, in retrospect, been revealed as fanciful. One such example was the widespread practice of severing the frontal lobe from the rest of the brain in the expectation that the surgery would reduce psychiatric disorder. Tens of thousands were ‘lobotomised’ with the best of intentions in the best of institutions, despite a lack of scientific basis. Hormonal and surgical treatment for gender dysphoria is not dissimilar: it is an intrusion on the brain and body in the hope of improving ‘happiness’ that enjoys no scientific basis.

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## HOW COMMON IS CHILDHOOD GENDER DYSPHORIA?

No one really knows the answer to this question because there is an absence of formal prevalence studies<sup>3,4</sup> and estimates vary greatly as increasing numbers are being brought to childhood gender dysphoria clinics each year<sup>5</sup>.

The leader of Toronto's Transgender Youth Clinic at the Hospital for Sick Children, Dr Joey Bonifacio, declared that estimates based on attendance at adult dysphoria clinics range from 0.005-0.014 per cent of adult males who consider themselves female, and 0.002-0.003 per cent of women who identify as men (personal communication). Bonifacio's statistics are the same as those declared in *The Diagnostic and Scientific Manual of Mental Health – Fifth Edition (DSM-5)*<sup>6</sup>, which the American Psychiatric Association says is "the manual used by clinicians and researchers to diagnose and classify mental disorders"<sup>7</sup>. Bonifacio (2015), however, repeated his belief that the figures underestimate the real prevalence<sup>8</sup>. In a 2016 personal communication, Bonifacio repeated his belief that the figures underestimate the real prevalence.

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In Australia, prominence has been given to a cross-sectional questionnaire distributed to 8,166 adolescents in New Zealand (Youth'12) which reported 1.2 per cent answered "Yes" to the question, "Do you think you are transgender? This references a girl who feels she should have been a boy, or a boy who feels he should have been a girl." Of the rest, 94.7 per cent denied being transgender, 2.5 per cent replied they were "unsure", and 1.7 per cent declared they "did not understand" the question<sup>9,10</sup>. The estimate of 1.2 per cent is promoted by leaders of the gender dysphoria service at Melbourne Children's Hospital<sup>11</sup>, but the prevalence appears to have been conflated to 4 per cent by the addition of the unsure 2.5 per cent by the promoters of Rainbow Youth in New Zealand and the Safe Schools Coalition Victoria Program<sup>12</sup>.

Results of such tick-in-the-box questionnaires are unreliable. A tick in a box to the question of "do you think you are transgender" cannot be compared in accuracy with the standard definition published in DSM-5 according to which childhood gender dysphoria is based on "a marked incongruence" between natal and perceived gender lasting "at least six months"; "manifested by at least six" features, including "a strong desire ... and insistence" on, together with a "strong preference" for, the company, clothing and toys of the opposite sex and its role in fantasy play; and associated with rejection of the stereotypes of its natal sex, including anatomy. Also, to comply with "dysphoria", there should be "significant distress or impairment ... in functioning"<sup>13</sup>.

The unreliability of such tick in the box questionnaires is emphasised in the *Journal of Homosexuality* (2011) in its consideration of the prevalence of suicide in sexual minorities. The *Journal* warns conclusions based on such questionnaires must be limited because they are based on "retrospective" data; "do not effectively allow cause and effect relationships to be discerned", including "co-occurring mental disorders"; are "restricted" in the number of questions they can ask to elucidate facts, and are weakened by the possibility of incomprehension of questions.<sup>14</sup>

Does it surprise that the reliability of responses from adolescents has been questioned? In the NZ survey, deemed authoritative by some in Australia and New Zealand, 36.5 per cent of adolescents actually declared they did not understand the question as to whether they had ever been "hit or physically harmed by another person"<sup>15</sup>. This response is hard to believe coming from a land committed to participation by its youth in the aggressive contact sports of Rugby Union and

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League! Furthermore, it is impossible to believe one-third of New Zealand's youth are so uneducated they cannot understand the written word! It is easier to believe they could not be bothered to answer the questions properly.

Given the unreliability of such survey data, how can it be claimed that 1.2 per cent of the population is transgender, on the basis of the NZ survey? That would make the prevalence of childhood gender dysphoria similar to the 1-3 per cent of intellectual disability. It is dissembling to conflate the figure to 4 per cent, as the Safe Schools Coalition Victoria program (and Rainbow Youth in NZ) claims, but a lot of the claims of the proponents of gender fluidity are not based on established social sciences research methods.

A prevalence of 4 per cent would mean one-in-25 of all children seen by paediatricians would be transgender. In contrast, a straw poll of 28 generalist paediatricians conducted by this author revealed only 12 cases could be recalled from a cumulative experience of 931 years. Ten cases were associated with significant mental co-morbidity, and two had suffered sustained sexual abuse.

In reality, childhood gender dysphoria has been a rare condition that was relatively unknown until the last few years when the numbers of children and adolescents being presented to gender dysphoria clinics in the Western world has increased almost exponentially each year.

The final irony in the claim by proponents that up to 4 per cent of children are transgender (and, by innuendo, may need special medical help) is revealed when it is compared with the statistics of adult prevalence published in DSM-5. If a 4 per cent prevalence in children falls to 0.002 per cent in adults, it means, mathematically, that over 99 per cent will "desist" from transitioning and revert to natal sex before adulthood as a natural process of life. Only a tiny minority would "persist" in their gender dysphoria.

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It is important to note that not all desisters emerge with heterosexual orientation: a minority will emerge with gay and lesbian orientations. The declaration that life as a homosexual was much less complicated than that of a medicalised, surgicalised, transgendered person appears to be the reason Professor Kenneth Zucker, prominent academic and former Head of Toronto's Center for Addiction and Mental Health, was recently dismissed from his position. Recognised as an international expert in gender dysphoria and proponent of a "watchful, waiting" approach in expectation of reversion of the child to natal sex, if not heterosexuality, Zucker was stood down and his unit closed.<sup>16</sup> Zucker says that research and experience shows that

[t]he majority of children followed longitudinally appear to 'lose' the diagnosis of (gender dysphoria) when seen in late adolescence or young adulthood, and appear to have differentiated a gender identity that matches their natural sex<sup>17</sup>.

## ARE THERE ANY OTHER CLINICAL PROBLEMS ASSOCIATED WITH GENDER DYSPHORIA?

Mental illness is strikingly associated with gender dysphoria, raising the question of which came first: whether gender dysphoria causes mental illness or is but a symptom of pre-existing, underlying pathology. Proponents of transgender ideology promote the idea that gender dysphoria is the root cause of the mental problems, and the root cause of the dysphoria is the failure of parents and society to accept gender non-conformity as a normal phenomenon. This is despite clear reports of psychological disorder preceding the symptom of gender dysphoria.

Nevertheless, psychological disorder is prevalent, if not characteristic. A study of Dutch children with dysphoria

aged four to 11 revealed associated psychiatric conditions of at least one type in 52 per cent, with diagnoses including anxiety, phobias, mood disorders, depression, attention deficit and oppositional behaviour.<sup>18</sup> A study by school teachers reported significant behavioural and emotional problems in about one third of 554 dysphoric Dutch and Canadian children below 12 years<sup>19</sup>. At the first presentation to a US gender clinic of 97 children with mean age 14.8 years, 44.3 per cent had a history of psychiatric diagnoses, 37.1 per cent were already on psychotropic medications and 21.6 per cent had a history of self-injurious behaviour<sup>20</sup>. In an Australian study of 39 dysphoric children of mean age 10, "behavioural disorders [were observed] in one-quarter of children, with Asperger Syndrome in one in seven"<sup>21</sup>.

A recent study by Becerra-Culqui et al (2018), published under the name "Mental Health of Transgender and Gender Nonconforming Youth Compared With Their Peers", considered American children aged from three to 17 years who had been diagnosed as "Transgender and Gender Non-confirming" (TGNC) by therapists in their health care provider, Kaiser Permanente<sup>22</sup>. The records of 1,333 children were examined, of whom 251 were aged three to nine, and 1,082 from 10 to 17.

Mental conditions were confirmed to be very common. The most common diagnoses for children and adolescents were attention deficit disorders (transfeminine, 15 per cent; transmasculine, 16 per cent) and depressive disorders (transfeminine, 49 per cent; transmasculine, 62 per cent).

Of the children from three to nine years, 31.7 per cent had received official diagnoses in accordance with *The International Classification of Diseases, Ninth Edition (ICD-9)*. Most often, they suffered from attention deficit disorders (approximately 15 per cent), anxiety (14 per cent), and conduct and/or disruptive disorders. Five per cent of transfeminine children were autistic and 11 per cent of transmasculine suffered from depression.

Of the older group of 1,082 children, a huge 73 per cent had been medically diagnosed with mental disorders ranging from anxiety (approximately 38 per cent), attention deficit (19.6 per cent), depressive disorders (56 per cent), and autism (5 per cent). Frank psychoses had been diagnosed in 4.7 per cent and schizophrenia spectrum in 1.6 per cent. In all, 14.5 per cent of the children had been so badly affected by mental disorder, they had needed to be hospitalised.

However, Becerra-Culqui et al avoided the basic question of which came first: mental disorder or gender dysphoria? Surely a temporal relationship could have been drawn from their records? As if avoiding the question of cause and effect, the authors equivocated, declaring "children who receive meaningful gender identity support do not necessarily experience elevated rates of depression and anxiety". They do not define such "affirmative intervention" but seek to assure that its "follow-up" will permit its impact to be examined. Meanwhile, the authors remain in a state of "considerable uncertainty"<sup>23</sup>. Did they choose uncertainty rather than ask the obvious question of which came first?

There are, however, substantial reports of gender dysphoria *following*, rather than preceding, the onset of mental disorder. For example, Kaltiala-Heino et al (2015) reviewed cases presenting to Finnish hospitals from 2011 to 2013 and found that 75 per cent "had been or were currently undergoing child and adolescent psychiatric treatment for reasons other than gender dysphoria when they sought referral". Sixty-four per cent had, or were having, treatment for depression; 55 per cent for anxiety disorders; 53 per cent for suicidal and self-harming behaviours; 13 per cent for psychotic symptoms; 9 per cent for conduct disorders; 4 per cent for substance abuse; 26 per cent for autism spectrum disorder, and 11 per cent for ADHD. Of these children, 68 per cent "had had their first contact with psychiatric services due to reasons other than gender identity issues"<sup>24</sup>.

From a survey of the literature, Kaltiala-Heino et al (2018)<sup>25</sup> found an increased prevalence of autism spectrum disorders (ASDs), varying from six per cent to over 20 per cent, had been reported among samples of adolescents referred to gender identity services<sup>26,27,28,29</sup>. This vastly exceeds the estimated prevalence of 0.6 per cent to 0.7 per cent<sup>30</sup> in the general population. Among children and early adolescents with ASDs, gender variance is more than seven times more common than among non-referred controls<sup>31,32</sup>.

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## IS THERE AN INHERENT RISK OF SELF-HARM AND SUICIDE?

Risk of self-harm has been reported in gender-dysphoric children and is the argument for “treatment”, and the threat against inaction. Is self-harm another manifestation of an underlying disorder, or is it due to frustration from gender dysphoria alone, or due to ostracism?

Proponents of affirmative treatment proclaim the latter and declare an “alarmingly high rate” of self-harm and suicide attempts, exemplified by highly publicised and tragic youth suicides in the US<sup>33</sup>.

As with most data related to gender dysphoria in children, studies are limited by lack of numbers and methodological bias, and the true rate of self-harm due to external ostracism is unknown. Other factors are very common and important and seem neglected in the argument.

Therefore, despite claims of an “alarmingly high rate” of self-harm and suicide, exemplified by that highly publicised and tragic death of a young dysphoric person in the US who suicided,<sup>34</sup> in reality, Aitken et al (2016) declare “systematic data on completed suicides among adolescents with GD [gender dysphoria] are not known”, emphasising that “few data are available on the prevalence of self-harm and suicidality in children with gender dysphoria”<sup>35</sup>. One London study by Holt et al (2016) retrospectively reviewed letters from referring doctors and its own notes regarding 218 gender-dysphoric children with a mean age of 14. Of 41 aged five to 11, it reported self-harm in 14.6 per cent, suicidal ideation in 14.6 per cent and suicidal attempts in 2.4 per cent. Of 177 adolescents aged 12 to 18, suicidal ideation was reported in 39.5 per cent, self-harm in 44.1 per cent and suicidal attempts in 15.8 per cent. The study, however, utilised no comparative groups and did not consider strength of intent which could, of course, range from seeking attention to seeking death. Finally, the authors wondered if the rates “simply reflect trends in the general population”.<sup>36</sup>



Furthermore, although detailing living arrangements of the children, the authors do not comment on their influence, though the effect of family dysfunction on the mood of its offspring is well known. The study found only 36.7 per cent were living with both biological parents. Fifty-eight point three per cent “had parents who had separated”. “Domestic violence was indicated in 9.2 per cent ... maternal depression in 19.3 per cent ... paternal depression in five per cent [and] parental alcohol/drug abuse in 7.3 per cent of cases”.<sup>37</sup> Nor does the study consider the significance of autism it found in 12.2-17.1 per cent of its children.

Elsewhere, Mayers et al (2013) found 14 per cent of children with autism aged one to 16 years have been reported to experience suicide ideation or attempts, suggesting a rate 28 times greater than that for typical children (0.5 per cent)<sup>38</sup>.

The NZ survey of adolescents, discussed above and deemed authoritative by some in Australia (and New Zealand), asked about “self-harm” in the previous year. Twenty-three point four per cent of non-transgenders replied “Yes”, as did 45.5 per cent of transgenders, but 23.7 per cent reckoned they did not understand the question. When asked about attempted suicide, 4.1 per cent of non-transgenders replied “Yes”, as did 19.8 per cent of “transgenders”, but 13.3 per cent declared incomprehension.<sup>39</sup>

Aitken et al (2016) found similar rates of ideation in Canada, though associated with a lower rate of self-harm or attempted suicide (17 versus 6.2 per cent). They concluded “older age, and more total behavior problems, but not poor peer relations, were significantly associated with the increased risk ... but could not argue that social ostracism ... was a unique correlate”.

Neither study revealed features of self-harm and attempted suicide.<sup>40</sup>

A review of such trends reveals the great difficulties in getting reliable data from child and adolescent

interviewees. Muehlenkamp (2012) found rates of non-suicidal self-injury vary from 12.5 per cent to 23.6 per cent, and deliberate self-harm from 12.2 per cent to 31.4 per cent, depending on the form of assessment.<sup>41</sup> Other studies have confirmed between 19 per cent<sup>42</sup> and 29 per cent<sup>43</sup> of ALL adolescents have announced a history of suicidal ideation, and between seven and 13 percent to have attempted "suicide", though what constitutes an attempt is not defined in these studies or in those from London and NZ.

Complicating all discussions of suicide in children with gender dysphoria are the associated rates of psychiatric co-morbidity in children. In the study from London by Holt et al (2016) mentioned above, for children below 11 years of age, autism spectrum disorder was diagnosed in from 12.2 to 17.1 per cent, attention deficit hyperactivity in 14.6 per cent, anxiety in 17.1 per cent, depression in 7.3 per cent and psychosis in 2.4 per cent with, on the whole, rates increasing with age. It reports bullying and abuse in almost half to two thirds of all children but does not discuss whether they were provoked by transgender characteristics or those associated with autism, hyperactivity and psychosis.<sup>44</sup>

The question, then, is whether transitioning of transgender children will ultimately reduce self-harm? While De Vries et al (2012) say the Dutch experience concludes "starting cross-sex hormones early ... followed by gender reassignment surgery ... can be effective and positive for general and mental functioning"<sup>45</sup>, other centres report high rates of suicide in years following reassignment<sup>46,47</sup>. To be fair, those reassigned in these studies did not have such a developed "pathway" for affirmation, as in Holland. Nevertheless, suicide attempts have been reported to be more common after surgery than in the general population in Belgium (5.1 per cent versus 0.15 per cent)<sup>48</sup> and in Sweden<sup>49</sup>.

Conversely, regarding suicide by adolescent members of sexual minorities, the *Journal of Homosexuality* concludes "very few suicide decedents [sic]" have been identified as having "minority sexual orientation" in studies in North America: three of 120 adolescent suicides in New York, and four of 55 in Quebec"; and warns conclusions based on "small numbers ... must be regarded as tentative".

The conclusion of the *Journal of Homosexuality* is valid. Numbers are small and data is obscure.<sup>50</sup> No one knows how often real suicide attempts occur or their relationship with internal and external factors in gender dysphoria. When I raised the issue with one experienced therapist, it was denounced as "rubbish", merely a "weapon used by ideologues".

Nevertheless, for whatever cause, children with gender dysphoria are at risk and deserve compassion, support and close monitoring for the possibility of self-harm. Even if gender confusion, per se, has not been demonstrated to generate an increased rate of suicide in affected children, all their other mental issues and family disruptions are known to place them at risk.

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## **WHAT ARE THE PERSONALITY CHARACTERISTICS OF PARENTS BRINGING CHILDREN TO GENDER DYSPHORIA CLINICS?**

Few studies are available on the characteristics of parents bringing children to gender dysphoria clinics despite numerous studies on their children. It is imagined gender confusion in a child must deeply affect its parents, and the phrase common to those seen interviewed on television, "gut wrenching", is easy to accept. But, some other parents do not seem that upset by their child's identity with the opposite gender and evince an enthusiasm for transitioning that extends into the media. Sometimes, the parent, usually the mother, appears as a cheerleader for the promotion of the child as poster trans boy or girl for the school.

In 2016, I interviewed Kenneth Zucker, who headed the American Psychiatric Association's committee that drafted the DSM-5 position on diagnosis and treatment of gender dysphoria. I asked Zucker whether there are any distinguishing characteristics in parents of children with gender dysphoria. His published opinion is worth considering in detail with regard to "psychopathology in the parents"<sup>51</sup>. He writes:

As is true for many other psychopathologies of childhood, the severity of parental psychopathology of psychiatric impairment is a risk factor with regard to therapeutics. Thus, I have been particularly attentive over the years to assessing the function of the parents and have a great deal of empirical data in this regard. As one example, using the Diagnostic Interview Schedule, a highly structured method of assessing psychopathology in adults ... I have found that about 50 per cent of the mothers of GID boys had two or more DIS diagnoses and about 25 per cent had three or more DIS diagnoses. A composite measure of maternal psychopathology was a very strong correlate of a general measure of the child's psychopathology<sup>52</sup>.

Earlier, Zucker had reported:

The etiology of gender identity disorder remains a source of debate ... One of the psychosocial factors deemed important concerns parental attitudes and behaviours regarding psychosexual socialisation. A consistent empirical and clinical observation is that parents are prone either to tolerate or to encourage the emerging cross gender behaviour, which ultimately appears to contribute to the consolidation of a cross gender identity in the child.

The reasons for such tolerance or encouragement seem to vary. In some instances, it appears related to an intense desire on the parent's part, particularly the mother's, to have a child of the opposite sex ...<sup>53</sup>.

Another study by Marantz (1991) also points to a high incidence of Borderline Personality Disorder and depression in mothers of dysphoric boys. Comparing mothers of dysphoric boys to those of "normal boys" revealed 53 per cent of mothers of dysphoric boys met the diagnosis for Borderline Disorder or depression compared with 6 per cent of other mothers. Moreover, with regard to child rearing practices and attitudes, the mothers of dysphoric children "had attitudes and practices that encouraged symbiosis and discouraged autonomy"<sup>54</sup>.

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With regard to "Children with gender identity disorder: Is there a best practice?", Zucker (2008) writes:

For ... parents ... in which the child's gender identity difficulties are embedded in a great deal of ambivalence, the focus of sessions can be to explore the underlying dynamics. Very often, what is weaved into this is the broader complexity of the family system, the parents' relationship, and the individual problems of each parent. In these cases, the therapeutic work is much more complex, challenging and long term.<sup>55</sup>

Parental acceptance of the child's identification with non-natal gender leads to early social transitioning. Toronto's Dr Bonifacio says many have progressed far into transitioning before attending his clinic: parents are dressing and entertaining the child as the opposite sex, applying new pronouns and a new name. Such commitment, he explains, paves the way for further treatment.

Zucker (2018) is more explicit: he would argue

that parents who support, implement or encourage a gender transition (and clinicians who recommend one) are implementing a psychosocial treatment that will increase the odds of long-term persistence.<sup>56</sup>

He predicts that, "in children who socially transition prior to puberty ... the persistence rate will be extremely high"<sup>57</sup>. As considered below, the problem with persistence is that it most likely means entering the medical pathway of treatment known as the Dutch Protocol, with all its complications.

## WHAT OPTIONS ARE THERE FOR TREATMENT OF CHILDREN WITH GENDER DYSPHORIA?

Basically, there are three options. The first, known as “conversion therapy” or “reparative therapy”, is the active attempt to make the child more comfortable in its natal sex and to dissuade the child from identification with the opposite sex. The second may be called “waiting and watching”, while making the child comfortable in its natal sex in expectation provided by the statistics that it will grow out of its gender dysphoria through puberty. In both the first and second options, Zucker (2008, 2012) says the reasons for the gender dysphoria are explored with the child and their parents with the aim of reducing the intensity of the dysphoria.<sup>58,59</sup>

Ristori and Steensma (2016) say the third treatment option is called “affirmative therapy”, which involves actively supporting transition to the opposite sex<sup>60</sup>.

The first option, “conversion” or “reparative” therapy, in which children are encouraged to be comfortable with their natal sex, is anathema to transgender activists. In some states of North America, laws prevent “conversion” or “reparative” therapy. The Australian Labor Party’s national platform is to make such therapy illegal, when next in government.



Evoking spectres of past brutal aversion therapy of transgender and homosexual adults, activists declare that anything less than affirmation in transgender children is inhumane, futile and may provoke suicide. Their argument is that transgender is fixed before, and unchangeable after, birth. Affected children “are born into the wrong body”, something parents must accept as both normal and unchangeable: so much so that attempts to resist the transitioning constitute child abuse. Therefore, the term “conversion therapy” has a pejorative, political clamour to it. Indeed, the term is wielded more like an ideological weapon than as a description of a medical alternative which might, in fact, be as unthreatening as sympathetic reassurance.

The second treatment option involves keeping the child as happy as possible within its “own skin” or natal sex, in the expectation it will “grow out of it”. It allows a child to dress and play with toys of the opposite sex but without active encouragement and with limitations to place and time. It allows that a minority will “persist” into homosexuality but perceives life as a homosexual as less complicated than that of the medicalised transgender.

The third treatment option, “affirmation”, excludes the first two and comprises a medical “pathway” towards physical simulation of the opposite sex that may be seen to progress through five phases. This pathway is known as the Dutch Protocol. It evolved from treatment of dysphoric children in a gender clinic in Holland but it now serves as the standard template for medical affirmation of a child towards the opposite sex (De Vries and Cohen-Kettenis, 2016).<sup>61</sup>

Note: The language of “conversion therapy” and “affirmation therapy” is often confusing because the meaning of words are based on a transgender world view, not on the science of biology. In the transgender world view, “conversion” means orientating the child back towards the sex with which it was born. “Affirmation” means orientating the child towards its chosen, new gender. Failure to promote “affirmation therapy” is “conversion therapy” by default and, therefore worthy of similar censure under the law.

*“Conversion” or “reparative” therapy, in which children are encouraged to be comfortable with their natal sex, is anathema to transgender activists. Activists declare that anything less than affirmation in transgender children is inhumane, futile and may provoke suicide.*

Indeed, proponents of transgender ideology do not accept any middle ground. Either a therapist actively

assists the child towards the opposite gender or the therapist is guilty of “conversion therapy” by omission. Therefore, on flimsy grounds, the current “standards of care” (Coleman et al, 2011) declare:

treatment aimed at trying to change a person’s identity ... to become more congruent with sex assigned at birth, has been attempted in the past without success ... such treatment is no longer considered ethical.<sup>62</sup>

*Proponents of transgender ideology do not accept any middle ground. Either a therapist actively assists the child towards the opposite gender or the therapist is guilty of “conversion therapy” by omission.*

Zucker (2018) is not surprised that proponents of transition take “umbrage at the mere idea of a treatment arm designed to reduce a child’s gender dysphoria via psychotherapeutic methods”.<sup>63</sup> He declares preference for the summary statement of the American Academy of Child and Adolescent Psychiatry:

different clinical approaches have been advocated for childhood gender discordance ... there have been no randomized controlled trials of any treatment ... the proposed benefits of treatment to eliminate gender discordance ... must be carefully weighed against ... possible deleterious effects.<sup>64</sup>

The problem is that proponents for active transitioning do not seem to recognise many of the deleterious effects.

## WHAT DOES THE DUTCH PROTOCOL INVOLVE?

**Phase 1** of the Dutch Protocol involves the social transitioning of a dysphoric child to the name, pronouns, dress and persona of the opposite sex.

**Phase 2** follows with the administration of drugs which block the release of hormones from the pituitary gland which should travel to the gonads to stimulate production of sperm and ova, as well as the production and secretion of the sex hormones (testosterone and oestrogen) that bring about and sustain the physical and mental characteristics of puberty and, then, reproductive adult life. These drugs are known as puberty blockers and are usually given at the onset of puberty. The youngest child reported to receive them in Australia did so at 10½ years of age.

**Phase 3** involves the administration of hormones of the opposite sex with the intention of evoking the physical characteristics of that sex. In time, exposure of the gonads to the hormones of the opposite sex will lead to chemical castration. Although international guidelines suggest irreversible surgery be delayed until 18 years of age, at least five girls in Australia have undergone bilateral mastectomy before that age as part of Phase 3 therapy.<sup>65</sup> Termed “top surgery”, bilateral mastectomies are being permitted at these younger ages under the sophistry that they are “partially reversible”. However, the ability to breastfeed is, of course, irreparably lost, even if some of the shape of the breasts might be restored by artificial implants of various kinds.

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**Phase 4** involves surgical remodelling of the genitalia and other features of the natal sex, such as the masculine “Adam’s apple” and distribution of hair. Not all children with gender dysphoria submit to this degree of surgery.

**Phase 5** does not feature in transgender literature. Those emerging from Phase 4 face a life-time commitment to supervision of hormonal therapy, maintenance of urogenital plumbing to deal with the problems of leaks and blockages, and, possibly, psychological support.

## WHAT PROBLEMS MAY A CHILD ENCOUNTER ON THE DUTCH PATHWAY?

**Phase 1: social transitioning.** The association with psychological disorder cannot be overemphasised: a large percentage of dysphoric children are actually given an associated psychiatric diagnosis. The very definition of “dysphoria” implies the rest are suffering significant disturbance. Proponents would maintain the psychological disturbance is secondary to gender confusion. This is despite many reports revealing the earlier onset of a psychological condition of which gender dysphoria is a later symptom, as discussed above.

In any case, to suffer from a psychological condition at variance with physical reality is normally considered delusional and, normally, authority figures in a child’s life do not seek to sustain the delusion. They do not encourage, flaunt or participate in the delusion but seek to minimise its magnitude and propensity for harm.

For example, no one participates in the delusion of a child’s anorexia nervosa and, if school authorities facilitated its manifestations by creating special areas for the minimal consumption of food or private vomiting of the stomach’s contents, their actions would be considered criminal. Also criminal would be a surgeon’s participation in the delusion of obesity by the placing of gastric bands to reduce the intake of food in order to satisfy the identity disorder.

But the converse applies to the delusions in which a child claims to belong in the body of the opposite sex. The dangers of fortifying a mental delusion were once obvious, but are no longer. How can a child re-orientate to the instructions of their chromosomes and hormones if there is a concerted drive by adult authorities to undermine biology’s message of binary difference in the sexes?

Even if the child’s mental co-morbidity does permit some lucidity of thought, how might a child escape the adopted and re-enforced identity when the hormones of puberty begin to impact on the sexual centres of its brain? Complications with “second transitioning” after time spent as the opposite gender are easily imagined (Steensma and Cohen-Kettenis, 2011)<sup>66</sup>. What happens if a child changes its mind and wants to desist from transitioning, as research shows is happening in the vast majority of cases? How does the child resist those authority figures who had participated, if not encouraged, the delusion?

*No one participates in the delusion of a child’s anorexia nervosa and, if school authorities facilitated its manifestations by creating special areas for the minimal consumption of food or private vomiting of the stomach’s contents, their actions would be considered criminal.*

Worse, what if the child is so intimidated by the fear of coming out against the delusion that passive acceptance of the next phase of the Dutch pathway seems the only possibility? Or, what if the vulnerable child has been so mentally influenced that it has no idea how to live in its natural sex, despite the urgings of its hormones? As Zucker declared above, once a child has entered social transitioning, the chances of desisting are reduced.

**Phase 2: the blocking of puberty.** The induction of puberty begins deep in the brain where it is started by a biological clock and involves a cascade of hormones with various checks and balances. Where and how it starts is unknown, but chemical messengers ultimately influence nerve cells in the hypothalamus to release hormones in pulsatile fashion to initiate the cascade of effects.

They stimulate cells in the nearby pituitary gland to secrete other hormones that travel to stimulate the gonads (the testes and ovaries) to release yet other hormones that travel to evoke secondary sex characteristics in the body, and to activate and energise awaiting sex centres in the brain.

The hormones released by the pituitary gland to stimulate the gonads are called “gonadotropins”. The suffix “tropins” is derived from the Greek and effectively means “causing the gonads to grow and mature”. The hormones that are secreted by cells in the hypothalamus to cause the release of the gonadotropins from the pituitary are called “gonadotropin-releasing hormones”, abbreviated to GnRH.

The GnRH hormones secreted by the hypothalamus act on receptors on the surface of the cells in the pituitary. Their pulsatile secretion (every 60 to 90 minutes) allows time for the pituitary receptors to reset after they have become fatigued sending messages to the nuclei of their cells. If they are continuously stimulated, the receptors become exhausted, messages are no longer relayed to the nuclei of the pituitary cells, gonadotropins are no longer released, and puberty stalls.

The chemical composition of GnRH was elucidated in the early 1970s and found to be comprised of 10 molecules known as peptides. Cleverly, scientists soon learned how to swap the last peptide in the chain for another, with the effect that the new GnRH would engage with the receptors and stimulate the gland, but would not permit those receptors to be restored to their functional self on the cell wall. In other words, scientists were able to create a chain of peptides which would exhaust the pituitary and thus stop the production of gonadotropins for as long as the abnormal chain was administered.

*What if the child is so intimidated by the fear of coming out against the delusion that passive acceptance of the next phase of the Dutch pathway seems the only possibility? Or, what if the vulnerable child has been so mentally influenced that it has no idea how to live in its natural sex, despite the urgings of its hormones?*

Known as GnRH "agonists", because they first stimulate the production of gonadotropins, the GnRH agonists are manufactured in injectable form and will exhaust the production of gonadotropins for weeks after administration. If injected every month or so, puberty may be stalled for years on end.

Since the 1980s, these drugs have been used to block puberty when it has begun too early. This condition is known as precocious puberty and is associated with psychological disturbance, interference with growth and a higher incidence of sexual abuse. Blockers have been used with good effect in these rare cases and it appears puberty itself may pick up after limited exposure. Any effects of exposure to the drug on the developing brain have, however, been difficult to assess because of the mental and societal stress associated with precocious puberty and the rarity of the condition.

However, the fact that puberty may restart has emboldened proponents to declare the effects of blockers in childhood gender dysphoria are "safe and entirely reversible". The international Endocrine Society (Hembree et al, 2011) is not so effusive in reassurance, declaring passively that "prolonged pubertal suppression ... should not prevent resumption" upon cessation<sup>67</sup>. More significantly, the Society warns there are no data regarding how long it might take for active sperm and ova to appear after prolonged blockage.

After discovery, blockers were soon employed to block the secretion of the sex hormones from the gonads in conditions known to be worsened by their action, such as the effect of oestrogens on endometriosis in women and testosterone in cancer of the prostate. The use of blockers in these situations has been reported to have been associated with both psychological instability and reduced executive function (Grigorova et al, 2006; Nelson et al, 2008; Craig et al, 2007)<sup>68,69,70</sup>, but the confounding effect of ageing, medication and worry about the disease have made it difficult to assess the individual contribution of GnRH blockers.

Unexpectedly, outside their effects on the central nervous system, Ohlsson (2016) has shown that the use of blockers affects the nervous system of the bowel in women taking them to reduce the production of gonadal oestrogen whose excess was believed to exacerbate the gynaecological condition of endometriosis. An unexpected increase in gastro-intestinal problems was reported in these women and intestinal biopsies revealed a marked reduction in the nerve cells responsible for intestinal mobility.<sup>71</sup>

This effect was confirmed in animal studies (Sand et al, 2015)<sup>72</sup> (see below) and believed to suggest a role for GnRH beyond the isolated and specific responsibility of stimulation of the pituitary to a general responsibility for the maintenance of nerve cells in varying parts of the body. In other words, the role of GnRH cannot be reduced to the single effect of stimulating the pituitary to produce gonadotropins. GnRH appears to have widespread effects and these should be considered when blockers are administered.

Though neglected in medical research on humans, there has been much work in laboratory bench studies and on animals to elucidate the broad effects of GnRH, and answer the question of what might happen when they are blocked. Studies on animals have revealed that branches of the brain cells that secrete GnRH extend well beyond the pituitary to areas of the brain concerned with sexuality, cognition, memory, emotion and executive function (Jennes et al, 2009; Casoni et al, 2016; Jennes et al, 1994; Kauffman 2004; Quintanar et al, 2007)<sup>73,74,75,76,77</sup>. Activity of GnRH in those regions was substantiated by finding the presence of its appropriate receptors (Stopa et al, 1991; Ban et al, 1990)<sup>78,79</sup>. That GnRH could be found in the cerebrospinal fluid that bathes the brain suggested that fluid could be another medium for widespread distribution, beyond the actual presence of GnRH secretary cells (Caraty 2008)<sup>80</sup>.

Subsequently, injection of GnRH into specific sites of the brain resulted in specific effects. In particular, injection into regions concerned with sexuality was found to facilitate sexualised behaviour in both male and female animals (Pfaff et al. 1973; Moss et al. 1973; Pfaff 1973; Maney et al. 1997; Schimi et al. 2000; Riskind et al. 1979; Argiolas et al. 2013)<sup>81,82,83,84,85,86,87</sup>. Conversely, sexualisation was reduced by blocking the effect of GnRH with special antibodies, and the special inhibiting hormone that is believed responsible for influencing seasonal sex behaviour in animals (Bentley 2006)<sup>88</sup>. It appears GnRH turns sexualisation on, and its blocking turns it off.

A more general influence of GnRH on sexual identity and behaviour was generated by the finding that various odours (pheromones) of the opposite sex could stimulate the release of GnRH to act on local sex centres in the brain, as well on the pituitary, to bring about the secondary release of the gonadal sex hormones with their added sexualising effect (Martin et al, 1986; Ungerfeld 2007)<sup>89,90</sup>. Soon, however, it was found that other "sociosexual stimuli" for gender identity and behaviour existed in the "rich and complex social environment that is full of the sights, sounds, and smells of their neighbours, mates and offspring" of mammals (Hawken et al, 2012)<sup>91</sup>. Thus, in sheep, it went on to be revealed that the presence of an odourless member of the opposite sex could cause an immediate release of GnRH, as could an odourless, unobserved member. Even a photograph of a ram could induce sexualisation in a ewe, as could the mask of a ram on the face of her sister.

These investigations on sheep pointed to poorly understood "sociosexual" stimulation of sexualisation involving the mind, memory, emotions and senses, impacting on hormones, being exacerbated by their response, all under the direction of the original complement of chromosomes. Though not understood, the force of these stimuli is obvious. The poetic description by Eugene E Brussell of love as "A beautiful dream with glandular activity" is physiologically apt.

As well as investigating the broad role of GnRH in the development and maintenance of sexuality, some researchers were looking at the specific effects on the brains of sheep which had been administered blockers in early stages of life.

In veterinary schools in universities in Glasgow and Oslo, over 10 years ago, a broader anatomical and behavioural effect was being demonstrated on such sheep. Those on blockers revealed lasting damage to the amygdala component of the limbic system to which branches of the cells that produce GnRH had been proven to reach. The limbic system integrates cognition, memory and emotions, and leads to appropriate "executive function". On blockers, the amygdala hypertrophied, and the function of many of its component genes was shown to be altered. The affected sheep demonstrated sustained reduction in memory and an increase in emotional lability (Nuruddin et Al, 2013; Nuruddin et Al, 2013; Nuruddin et al, 2013; Evans 2 et Aa, 012; Hough et al, 2017; Wojniusz et al, 2011)<sup>92,93,94,95,96,97,98</sup>.

*Much, indeed most, remains unknown about the widespread function of GnRH, but there is sufficient evidence for a maintenance role in widespread neuronal function, as well as a specific role in sexual identity and reproductive function to challenge its experimental administration to the growing brains of children.*

Recently, bench studies in other laboratories have confirmed a deleterious effect of blockers on the integrity of nerve cells from the hippocampus, another part of the limbic system. Perhaps by influencing delicate cascades of enzymes within those cells, exposure to blockers has resulted in deformation of the

tiny extensions through which nerve cells communicate with each other and, ultimately, contribute to the function of the brain (Prange et al, 2008; Quintanar et al, 2016; Naftolin et al, 1971)<sup>99,100,101</sup>.

Much, indeed most, remains unknown about the widespread function of GnRH, but there is sufficient evidence for a maintenance role in widespread neuronal function, as well as a specific role in sexual identity and reproductive function to challenge its experimental administration to the growing brains of children.

Therefore, how can a blocked young brain be expected to comprehend a sexual future?

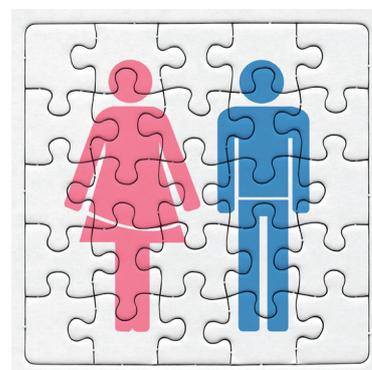
The gender clinics administer puberty blockers with the argument they provide the young person with more time for better consideration of future gender identity and procreation, while reducing the provocation of unwanted sexual characteristics. The question is: how can a child who is maintained in a neutered state, from as early as 10½ years of age, be expected to understand such things when denied the sexually orientating effects of natural hormones? And, how can the child be expected to “think straight” when denied the sustaining effect of, in particular, GnRH, on various parts of the brain that integrate memory, cognition, and emotion into rational action? According to bench and veterinary literature, administration of blockers may be expected not only to block the outward signs of puberty but also:

*How can a child who is maintained in a neutered state, from as early as 10½ years of age, be expected to understand such things when denied the sexually orientating effects of natural hormones?*

1. the sexually orientating and energising effect of general “sociosexual stimuli” on the brain, as mediated by GnRH secretion
2. facilitation of sexualised behaviour by the specific action of GnRH upon local “sex centres” within the brain
3. the secondary effects of testosterone and oestrogen in their selective energising of a pubescent brain that has been quietly awaiting them, as organised and directed by the body’s chromosomes since the early weeks of foetal life
4. the timely exposure of the brain to those gonadal hormones, according to the natural orchestration of the pubertal symphony. Late arrival has been shown to reduce their effect in sexualisation
5. the capacity of the limbic system to fully integrate cognition, memory and emotion and exert “executive function” in favour of the propagation of the species.

While the natural process of strengthening of gender identity is blocked, the neutered child remains exposed to the sustained pressure for transition exerted by its principal authorities: the child’s parent(s), teachers, doctors, therapists, advisors, internet websites and the weight of the experience from presenting and living as a member of the opposite sex. Denied the orientation of natural hormones while exposed to such powerful influences, it is not surprising that studies reveal that, once started on blockers, medical escalation continues towards the other sex.

**Phase 3: the administration of cross-sex hormones.** Cross-sex hormone therapy means giving enough hormones of the opposite sex to evoke and sustain its external characteristics, such as the development of breasts in a male, or a beard in a female. The hormones are given for life and must be monitored for side effects.



According to The World Professional Association for Transgender Health (WPATH), feminising hormones carry likely increased risks that include venous thromboembolic disease, gallstones, elevated liver enzymes, weight gain, and hypertriglyceridemia. There is a likely increased risk for cardiovascular disease with the presence of

additional risk factors. There are possible increased risks of hyperprolactinemia and hyperprolactinemia or prolactinoma, and Type 2 diabetes with the presence of additional risk factors.

WPATH says that masculinising hormones carry likely increased risks that include polycythemia, weight gain, sleep apnoea and balding. There are possible increased risks of elevated liver enzymes and hyperlipidemia. Possible risks with additional risk factors include destabilisation of certain psychiatric disorders, cardiovascular disease, hypertension and Type 2 diabetes.<sup>102</sup>

By suppression of gonads, there is a slow process of chemical castration and, therefore, the desire for reproduction needs to be effected by the collection and cryopreservation of ova and sperm before the cross-sex hormones are administered. Then, ova and sperm need to be stored in a frozen state to be artificially administered to a subsequent partner.

According to international practice, cross-sex hormones may follow and then accompany blocking therapy, and be initiated around 16 years of age. Some clinics, however, commence therapy as early as 14 years (Shumer 2016)<sup>103</sup>.

This “earlier” trend obeys a certain “affirmative” logic: if the child is determined to change gender, and if parents and authority figures agree, why make the child wait? After all, if puberty is blocked, the child will remain in an immature state while all his or her peers are growing in height and developing sexual characteristics. Surely, this period of stagnation is unnecessary. Would it not be more merciful to give the sex hormones that will produce external characteristics of the chosen gender sooner rather than later?

On this logic, affirmation therapy is creeping into earlier ages despite recommendations of the Endocrine Society: “Given the high rate of remission ... [of gender dysphoria] ... after the onset of puberty, we recommend against a complete social role change and hormone treatment in prepubertal children” (Hembree 2009)<sup>104</sup>.

Are there side effects of cross-sex hormones on the brain?

Though proponents of transgender therapy are open about the general metabolic effects of cross-sex hormones, such as propensity to thrombosis, hypertension, and osteoporosis, few references are made to the effect of cross-sex hormones on the growing brains of young people (Chew et al, 2018)<sup>105</sup>. Nevertheless, there is sufficient evidence from adult human and veterinary studies to warn that the impact is great, even if the reason is poorly understood.

Surprisingly, it has been revealed that nerve cells of the brains of both males and females manufacture the female sex hormone, oestrogen, which was traditionally considered only to be produced by distant gonads in mature females<sup>106,107</sup>. It has been shown that this locally produced oestrogen (known as a neurosteroid) is basic to the function of the neurons, in as yet unknown ways (Spencer et al, 2008)<sup>108</sup>. More surprising is that testosterone, conveyed from the testes in large quantities to the brain cells in males, and small quantities from the adrenal glands in females, is metabolised in those cells into oestrogen, contributing to its local concentration (Garcia-Segura 2008)<sup>109</sup>.

Thus, the female hormone, oestrogen, is believed to regulate differentiation of neurons and their supporting cells. It “generates sex differences in neuronal circuits controlling ... reproduction” as well as local development of the extensions from the neurons and the way they communicate, in their many thousands, to each other (Terasawa et al, 2012)<sup>110</sup>.

Interruption of the neuronal concentration of oestrogen results in deformation of the communicating branches of the neurons, similarly to the observed effect of puberty blockers on neurons in bench studies (Quintanar 2016)<sup>111</sup>. Possibly, GnRH supports nerve cells by maintaining the balance of testosterone and oestrogen, but this is yet to be investigated.

*“Given the high rate of remission ... [of gender dysphoria] ... after the onset of puberty, we recommend against a complete social role change and hormone treatment in prepubertal children.”*

**Endocrine Society**

The question arises: what will happen to the function of the individual neurons and their summation into a brain, if bathed in volumes of cross-sex hormones while deprived of the presence of those it was programmed to expect? Again, knowledge is limited because of the scarcity of underlying research. It is known that a balance of sex hormones is responsible for the differentiation of an early foetus into a male or female, and for a sex-specific organisation of the brain that continued into early infancy to then await further development and specific sex hormone activation in puberty. Can the growing adolescent brain adapt to concentrations of cross-sex hormones its chromosomal design was not expecting?

At first, cross-sex hormones were advised to be restricted until the age of 16 but now, in Australia, there is no age limit and it would appear early administration is likely. The approval of the Family Court of Australia was required for administration of cross-sex hormones to children under 16 but, in November 2017, the Court, following assurances from children's gender clinics, decided it would no longer intervene in cases where children have the permission of their parents and their treating doctors.<sup>112</sup> Now, the administration of these drugs and practice of mastectomies is accountable only to those who prescribe them and any reporting of their administration will not necessarily be available for public scrutiny.

So, what effect might be expected from administration of cross-sex hormones to the growing brain? As mentioned, there are few relevant studies but imaging of brains of adult transgenders has revealed shrinkage of male brains exposed to oestrogens at a rate ten times faster than ageing, and has revealed enlargement of female brains exposed to testosterone (Zubiaurre-Elorza et al, 2014; Rametti et al, 2012; Hulshoff et al, 2006)<sup>113,114,115</sup>.

Hulshoff et al (2006) investigated brain morphology of eight males and six females who had been on cross-sex hormones and were about to undergo genital surgery, and published their results in a paper named "Changing your sex changes your brain: influences of testosterone and oestrogen on adult human brain structure". Their ages ranged from 16 to 45, with an average of 25 years. The natal males had received oestrogen and an anti-adrenergic drug, cyproterone. The natal females had received testosterone. Brain volumes were assessed on high resolution magnetic resonance images obtained "prior to and during cross-sex hormone treatment after a four-month interval" and were compared to those of healthy comparison subjects. The experiment revealed a decrease in "hypothalamus and total brain volumes" in males on cross-sex hormone therapy of a "magnitude" (31ml over a four-month period) which was "striking, since it signifies a decrease in brain volume, which is at least ten times the average decrease of around 2.5ml per year in healthy adults". Moreover, the authors emphasise that, in younger adults, shrinkage associated with age is "normally small" compared with older adults. Testosterone administered to natal females resulted in an increase in overall brain volume.<sup>116</sup>

These changes in volumes were associated with (in natal males) reduction in size of the internal third and lateral ventricles, and (in natal females) with an increase in their volumes. This suggested "that the total ... changes are at least in part due to changes in medial brain structures (including but not limited to the hypothalamus ... (involving) both alterations in nerve cells as well as in axonal fibers". The authors were not surprised that there were also "changes in total brain size" as cells influenced by oestrogen and androgens exist throughout the brain.<sup>117</sup>

*Cross-sex hormones resulted in changes in brain volumes towards natural difference between males and females, but the changes cannot be described as "natural" because cell death is implicated.*

Thus, the cross-sex hormones resulted in changes in brain volumes towards natural difference between males and females, but the changes cannot be described as "natural" because cell death is implicated.

Pondering on the effect on the brain cells, the authors declare

the most important mechanism by which steroid hormones alter neuron number in sexually dimorphic regions is by influencing cell death. In addition, they are involved in neuronal migration, neurogenesis, and neurotransmitter plasticity.<sup>118</sup>

Hulshoff's work is supported by references to effects of cross-sex hormones on animals (Raisman et al, 1971; Block et al, 1988; Nottebohm 1980)<sup>119,120,121</sup> and has been considered in some depth because references to such effects on the brain are not available in the promotional literature for transgendering.

My personal review of all published cases of considerations of childhood gender dysphoria by the Family Court of Australia revealed no references to the deleterious effects of cross-sex hormones on brain morphology. It is as if they do not exist. Their importance is particularly relevant for children and adolescents transgendering with cross-sex hormones because it should be noted the effects in Hulshoff's study were revealed after only four months of treatment: transgendering youth will be administered these hormones for life.

**Phase 4: surgery.** According to international guidelines, "sex- realignment surgery" may be performed from 18 years, though there are reports of it occurring earlier in private clinics (Milrod 2014)<sup>122</sup>. Mastectomy, however, may be performed at a younger age if developing breasts increase dysphoria.

As the significance of realignment surgery may not be appreciated by a non-medical audience, it may be helpful to consider some details of the fate towards which children on affirmation therapy may be headed (Weissler et al, 2018)<sup>123</sup>. There are various components and not all patients progress to the final package, but the project will usually include relatively simple surgical procedures of castration, removal or augmentation of breast tissue, reduction in the size of the Adam's apple, and alteration of body hair.

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Creating ersatz female genitals is easiest: an orifice is created in the perineum, lined with skin from a filleted penis and, sometimes, deepened by transplanted bowel.

The scrotum forms labia. The glans is grafted above the orifice and the urethral tube is shortened.

Creating male genitals is harder. One surgeon declared "the task assumes nearly Herculean dimensions" (Rashid et al, 2013)<sup>124</sup>, but this underestimates the ingenuity and range of objectives while exaggerating results. Hercules was always successful: creation of a penis is not. Some patients settle for a clitoris enlarged by male hormones. Others aspire to a penetrative organ, or at least one that can deliver urine when its owner is standing. In these cases, a shaft may be attempted from tissue grafted from thigh or even forearm and stiffened with a length of bone. A glans may be fashioned from a graft of inner skin and the tube that delivers urine may be lined with mucous membranes from the mouth. The appearance of a scrotum may be achieved by creating a sac from the labia and inserting two artificial testicles.

Though techniques are improving with practice, complications are protean. Grafts may die, holes fill in, tubes obstruct, openings appear, bones protrude, bowels perforate and germs invade but, all in all, these are high-risk procedures undertaken in the attempt to produce an "aesthetically and functionally pleasing" result for the recipient.

## IS THERE EVIDENCE THE DUTCH PROTOCOL IS BENEFICIAL?

Despite the magnitude of the intervention into the minds and bodies of children comprised in the Dutch Protocol, it has no underpinning in the "scientific method" that should accompany any medical intervention.

Normally, the process to validate any medical intervention begins in physiological plausibility, then to studies in laboratories, then to studies on animals, then to pilot studies on humans; then, finally, to cross-over, blinded studies adjudicated by disinterested researchers whose results are analysed statistically. All the while, side effects are sought and balanced against putative gain. A reasonable observer would imagine such stringent practices would apply to the regime of treatment that begins by the giving of hormones

that might affect the brain as well as the body, would entail chemical castration, and may lead to massive surgical enterprise in which physical castration is inherent. However, that is not the case.

A recent article by Chew et al (2018)<sup>125</sup> in *Pediatrics*, the prestigious journal of the American Academy of Pediatrics, emphasises the lack of normal scientific appraisal. It is named "Hormonal Treatment in Young people with Gender Dysphoria: a systemic review" and is a summation of international literature on the "psychosocial, cognitive and/or physical effects". It is a significant article in the Australian context because its authors are associated with such prominent institutions as the Royal Children's Hospital in Melbourne, which appears to be at the forefront of the Dutch Protocol in this country.

For Chew et al to declare in their introduction that such studies are "scarce" is an understatement: in the 70 years from January 1946 to June 2017, they could find only 13 publications of any relevance. They find this scarcity to be "problematic" because "adolescence is a period of rapid development across multiple domains" to which hormonal therapy in transgendering adults may not "translate". The problem lies in the virtual absence of scientific literature that pertains to the intervention that may be about to be inflicted on brains of children undergoing the cerebral growth spurt of puberty and adolescence.

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The authors categorised their findings under several headings.

**Physical effects:** The authors introduce the actions of puberty blockers and cross-sex hormones and detail some physical effects, concluding, "overall, hormonal treatments for transgender youth were observed to be relatively safe". Then they undermine that assurance by acknowledging "the relatively short follow-up duration of the studies". They consider the effect on bone growth to be of particular concern, but also warn of "various metabolic and cardiovascular effects"<sup>126</sup> known to be associated with cross-sex hormones in adults.

**Psychosocial effects:** The authors' report claims that transgendering therapies were "associated with significant improvements in multiple psychological measures, including global functioning, depression ... and behavioural and/or emotional problems". However, they report the studies revealed "unclear effects on anger and anxiety" and "no significant effect on symptoms of GD (gender dysphoria)". Indeed, one study suggested "an increase in GD and body image difficulties"<sup>127</sup>.

However, the authors do not discuss weaknesses in the studies claiming psychological benefit, merely admitting that there is a knowledge "gap". These weaknesses include the limited number of children studied, the limited time of study, the lack of controls, and the possibility of observer bias. When those who are diagnosing, treating and measuring outcome (without comparison) on a relatively small cohort of suffering children who must be well known to all, the possibility of observer bias is obvious. Compassion, alone, would inspire optimistic thinking.

Another major confounder of psychological benefit is the large number of children suffering from associated psychological disorder, as emphasised by Becerra-Culqui et al (2018).<sup>128</sup> The effect of concentrated, compassionate, professional support, by a team of adults committed to increasing a child's happiness, is likely, by itself, to be positive, and thus skew results. Moreover, any undisclosed psychotherapeutic medicines the children might also be taking are likely to skew results.

**Cognitive effects:** The authors could find only two references, both pertaining to very weak studies, on the cognitive effects of transitioning therapy; that is, on the brain power and behaviour of the recipient. One study examined "executive function" in eight children on blockers and, though it found "significantly reduced accuracy" in transfemale adolescents, the importance of this negative finding was downplayed by arguing

the number of children was too small for validation. The other study examined visio-spatial ability, which is generally believed to be greater in males, and was reported to have been enhanced in natal females who had received testosterone for 10 months. No other effects of steroids on the growing brain were assessed.

The quality and risk of bias of the 13 studies were independently assessed by two of the Australian authors, who concluded: "In all studies, there was a medium to high risk of bias" because of the small numbers of subjects, absence of controls, loss of follow up, retrospectivity, absence of randomisation and "no blinding" of researchers.<sup>129</sup>

Appropriately, the Australian team proclaimed the need "to reassess and expand on the findings of the existing studies". They explained the inability of blockers to reduce symptoms of gender dysphoria to be "probably not surprising", arguing it would be unreasonable to expect blockers to "lessen the dislike" of existing sexual features and to "satisfy ... desire" for the physical features of the opposite sex. They did not discuss the inability of blockers to alleviate innate mental disorder of which the dysphoria might have been but a symptom.<sup>130</sup>

With regard to the effect of cross-sex hormones on cognition, apart from the minimal reference to testosterone, reviewers could find no relevant literature.

Overall, the Australian authors conclude the existing studies have "neglected several key outcomes". These include "psychological symptoms ... which is a critical knowledge gap"; the impact of treatment on fertility; the possibility of other physical side effects, including growth and cardiovascular function; and the manner of withdrawal from treatment, especially with regret.<sup>131</sup>



It should be emphasised that the above article reporting scarcity of studies is not unique. Other publications in mainstream paediatric literature complain of "lack of consensus regarding appropriate intervention or even appropriate goals of intervention" (Shumer et al, 2013)<sup>132</sup>, "limited long term data" (Costa R et al, 2015)<sup>133</sup>, "small numbers from only one clinic" (de Vries et al, 2014)<sup>134</sup>, "reliance on clinical impressions" (Schwartz 2012)<sup>135</sup>. Thus, there is a lack of randomised controlled studies that provide definitive recommendations for treatment options. Therefore, the best evidence available is characterised as "expert opinion", which is influenced by prevailing cultural belief systems and theoretical orientations (Milrod 2013)<sup>136</sup>.

In a Special Review in the *Journal of Homosexuality* of "The treatment of gender dysphoric/gender variant children and adolescents", David Schwartz (2012)<sup>137</sup>, a child psychiatrist from New York, emphasised the lack of scientific data regarding medical intervention and concluded with the reassurance that affected children would naturally desist. He declared:

the long-term psychological and physiological consequences of ... (the medical pathway) ... are unknown and, as is the case with all self-selected populations, very difficult to assess owing to problems of (lack of experimental) control and limited sample numbers.

Schwartz highlighted concerns, including dependence on "clinical impression", "usage of anecdotal data", suspension of "natural scepticism" in "favor of literality" of children's and adolescents' claims, unquestioning "certitude", and lack of consideration of "potential disadvantages"<sup>138</sup>.

Yet another review of recent research by Fuss et al (2015) concluded that

more longitudinal research ... is needed to compare different strategies of care and to see long term results especially in those minors with comorbid psychiatric disorders. The lack of evidence is even more pressing considering ... the dramatically increasing number of referrals to gender clinics ...<sup>139</sup>.

## IS ANYTHING ELSE AT RISK?

Apart from the health of children, is anything else at risk? The answer is yes. Transgender ideology is challenging basic human rights and freedoms. Beginning in the US and Canada, laws have been passed which oblige a medical practitioner to direct a dysphoric child towards transitioning.

### What does the law have to say in North America?

In California, in September 2012, a law was passed “to prohibit a mental health provider ... from engaging in sexual orientation change efforts ... with a patient under 18 years of age” which included “transgender youth, as well as lesbian, gay and bisexual young people”. Such efforts included “efforts to change behaviours or gender expressions” which were deemed “unprofessional conduct and shall subject the provider to discipline”. The Bill cited various national organisations of paediatricians, psychologists and psychiatrists which described such activities as conversion or reparative therapies.<sup>140</sup>

Similar laws have been enacted in New Jersey, Illinois, Oregon, and Washington. In 2015, the state of Ontario, Canada passed an “anti-reparative” and “anti-conversion” law. It opposed any attempt to re-orientate sexuality or to affirm a child in their natal sex in order “to save children’s lives”.

In effect, US President Barack Obama joined the affirmation team, responding to a petition banning “dangerous ... conversion therapy” after the suicide by a 15-year-old natal male adolescent who had sought to identify as a female and allegedly underwent “conversion” therapy at his parent’s church. The White House said that the “Obama administration supports efforts” to ban conversion therapy for minors “because overwhelming evidence demonstrates” it “is neither medically nor ethically appropriate”<sup>141</sup>.

It is hard to gauge the effect of the laws. No charges have yet been laid but many therapists uncommitted to active affirmation are now reported to be unwilling to care for transgender children because they do not want the worry of the medico-legal risk (personal communication). The result of their withdrawal in the face of increasing public demand is that children and their parents are funnelled towards those willing to continue or initiate the stages of transition.

One definite association with the development of the law in Ontario was the dismissal of the international leader in management of gender dysphoria, Dr Kenneth Zucker, and the closure of his long-established clinic in Toronto for allegedly practising conversion therapy. This has brought immeasurable weight to the law.

This law, known in Ontario, Canada, as the *Affirming Sexual Orientation and Gender Identity Act, 2015*<sup>142</sup> was passed unanimously and in a “miraculously” short time according to its promoter, parliamentarian, The Reverend Cheri DiNovo. When I interviewed The Rev DiNovo in 2016, she explained that “Bills may take up to years to pass but this one succeeded in only two months”. The Rev DiNovo, who entered Parliament in March 2006, has been a prominent advocate for many issues, including recognition of the Stalin-imposed famine on Ukraine as “genocide”, and is also prominent for “pass[ing] most LGBTQ legislation in Canada”. She has conducted a weekly radio program, received literary awards, earned a Master’s degree in divinity, a doctorate in ministry from the University of Toronto, and been a minister of the United Church of Canada since 1995<sup>143</sup>.

*Transgender ideology is challenging basic human rights and freedoms. Beginning in the US and Canada, laws have been passed which oblige a medical practitioner to direct a dysphoric child towards transitioning.*

All her educational achievements are relevant to the discussion we shared. Concisely, she declared the object of her “gender” law was not punitive but “instructional”: to save children’s lives, gender identity had to be affirmed. “Reparative or conversion” attempts should, therefore, be dissuaded and certainly not remunerated under the state’s *Health Insurance Act 1990*.

I asked about clauses in the Act declaring that the reparative therapy ban “does not apply if the person is capable with respect to the treatment and consents to the provision of the treatment”. The Rev DiNovo was unclear in her response. I asked at what age would a child be deemed capable of consent to reparative treatment? Up to what age would a child be incapable of consent and therefore have to rely on the judgement of parents and affirmative therapists? DiNovo would not approximate, merely repeating, and now, with many words, that the law was “instructional”.

More disturbing was the response of this educated politician to my question as to why active, affirmative, transitioning therapy should be applied when studies show the vast majority of children with gender dysphoria were going to “grow out of it” and only identify with their natal sex in adulthood? “I did not know that,” she declared. I continued by presenting a book written by Dutch leaders in the field who attest to the majority desisting. She declared she had not heard of them. I left her office perplexed. Could one so prominent not know most children would desist from transgender confusion?

### What does the law have to say in Australia?

In February 2017, a *Health Complaints Act* became law in Victoria in which complaints may be raised against fraudulent and negligent practices which will include, according to Health Minister Jill Hennessy, “conversion” therapy.

More broadly than Ontario’s *Affirming Sexual Orientation and Gender Identity Act 2015*, which focuses on therapists receiving National Insurance funding, the Victorian *Health Complaints Act 2017* will embrace any person or organisation beyond the classical health care providers that offer “general health services”<sup>146</sup> to “maintain or improve a client’s health or wellbeing”<sup>147</sup>, including “mental or psychological health or status”<sup>148</sup>. Given the antagonism of transgender activists to affirming children in their natal sex, sooner rather than later any person advising “watchful waiting” of a transgender child may be asked for a “reasonable excuse”.<sup>149</sup>

Not only are medical practitioners, psychologists and counsellors at risk, so too are school teachers and parents. According to the NSW Department of Education, teachers are reminded of their mandatory obligation to report suspected child abuse to their principals who, in turn, are reminded of their responsibility to report abuse to authorities in Family and Community Services. According to a department *Legal Issues Bulletin* (2014),

Should a teacher have “reasonable suspicion” that a transgender student is at “suspected risk of harm ... relat[ing] to the parent’s stated response to their child identifying as transgender... [then] school staff should inform their principal of any concerns about a student who may be at suspected risk of harm”<sup>150</sup>.

*Should a teacher have “reasonable suspicion” that a transgender student is at “suspected risk of harm ... relat[ing] to the parent’s stated response to their child identifying as transgender... [then] school staff should inform their principal of any concerns about a student who may be at suspected risk of harm”.*

## WHAT DOES THE FUTURE HOLD?

It should be emphasised that “conversion therapy” is Orwellian double-speak for any attempt to reduce gender dysphoria by helping the child become comfortable with its natal identity, and not ushering the child onto the pathway of affirmation. Merely encouraging a gender confused child to wait for the orientating effects of puberty to be worked through may be considered a form of child abuse. In the future, it may become very dangerous for a child to express confusion of gender: no-one will be able legally to protect it from gender transitioning protocols that are backed by the state. The irony is that the state will sanction any transition to any gender, as frequently and momentarily as the client wishes, as long as the direction is away from that decreed by chromosomes.

Such punitive bias is not shared by the highest of international organisations: no less than the international Endocrine Society acknowledges a middle path between “complete social role change and hormone treatment” on the “affirmative” end of the spectrum and punitive attempts to dissuade on the other. Implying that for “most children”, gender dysphoria “does not persist” if parents are patient, the Society recommends children should not “be entirely denied to show cross-gender behaviours” and should not “be punished for exhibiting such behaviours”.<sup>151</sup> While Australian and New Zealand politicians cannot be expected to have full understanding of therapies (even Canada’s Rev Cheri DiNovo claims she has never heard that most gender dysphoric children only identify with their natal sex in adulthood), the commitment of some to such intervention in the healing arts is surprising. Their dedication to one single option despite varying opinions must be credited to the astonishing success of transgender activism.

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Ironically, some homosexuals are beginning to perceive their future eroding. In a conversation with a mother of a gender confused child, she reported to me the consternation of a homosexual friend. The male friend said, “I am glad I grew up in an earlier era, otherwise my preference for softer clothing, colours and play, and the company of female children, could have led to my transition!” Had he grown up in the pending era, his parents could have been charged with child abuse for not submitting him to the Protocols, and any resistant doctor could have been deregistered.

Social and medical transitioning treatments constitute an experiment that appears to be based on the Dutch Protocol of therapy for childhood gender dysphoria. The Dutch Protocol appears to have overlooked important international codes of medical research ethics on human experimentation, including the ancient Hippocratic Oath, the Belmont report (1978), the Declaration of Geneva (1948), the Declaration of Helsinki (1964) and the Nuremberg Principles (1949).

The Nuremberg Code and related Declaration of Helsinki are the basis for the US Code of Federal Regulations issued by the United States Department of Health and Human Services for the ethical treatment of human subjects. In addition, the idea of informed consent has been universally accepted and now constitutes Article 7 of the United Nations’ *International Covenant on Civil and Political Rights*. It is also the basis for International Ethical Guidelines for Biomedical Research Involving Human Subjects proposed by the World Health Organisation.

Against key protections of these codes, questions have to be asked about children transitioning.

Against the requirement for a subject “understanding consent”, how can a child on puberty blockers understand their sexual future? How can a child with a psychological disorder comprehend transitioning and the permanent changes to their future?

*Against the requirement for a subject “understanding consent”, how can a child on puberty blockers understand their sexual future? How can a child with a psychological disorder comprehend transitioning and the permanent changes to their future?*

Against the necessity for an outcome that cannot be achieved in any other way, why is medical transitioning vigorously pursued when most children will revert to identifying with their natal sex in adulthood? Who can predict that “compassionate, supportive, watching and waiting” until the child reaches adulthood will not be effective?

Against the requirement that experimentation is based on previous knowledge, including animal studies, there is virtually no previous knowledge, and animal studies that ought to be dissuasive are being ignored.

Against the requirement that an experiment ought not to exceed expected benefits, animal studies show risk of sustained cerebral damage. Conversely, there is no long-term evidence that dysphoric children will be advantaged by medical transitioning, while there is long-term evidence that transgendered adults have an inordinate rate of suicide.

Against the necessity that staff must be fully qualified, the very recent tsunami of childhood gender dysphoria means very few therapists possess long-term, corporate expertise.

Against the requirement that medical staff must stop the experiment when they observe the experiment is dangerous, given the absence of traditional study design, how will the staff know when things have gone wrong? In the absence of such standard trials, frontal lobotomies were pursued enthusiastically for a long time at the cost of tens of thousands of interventions.

*What child will be able to walk away from a new identity, the persuasion of drugs and the commitment of authority figures?*

Against the necessity that subjects should be free to leave the study at any time, what child will be able to walk away from a new identity, the persuasion of drugs and the commitment of authority figures?

## ENDNOTES

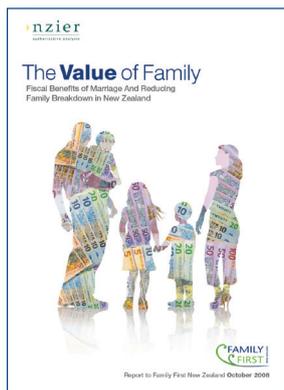
- 1 *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.* (DSM-5) American Psychiatric Association. Washington. DC 2013, pg. 452.
- 2 Ibid.
- 3 Ristori J, Steensma TD. Gender dysphoria in childhood. *Int Rev Psych.* 2016;28 (1):13-20. Doi 10.3109/09540261.2015.1115754
- 4 Shumer D, Spack NP. Current management of gender identity disorder in childhood and adolescence: guidelines, barriers and areas of controversy. *Curr Opin Endocrinol, Diabetes and Obes.* 2013;20(1):69-73. Doi 10.1097/ MED.0b013e32835c711e
- 5 Eade DM, Telfer MM, Tollitt MA. Implementing a single session nurse led assessment clinic into a gender service. *Transgender Health.* 2018;3(1):43-46. Doi 10.1089/trgh.2017.0050
- 6 DSM-5. 2013, Op. cit., pg. 454.
- 7 "Gender Dysphoria", American Psychiatric Association. [https://www.psychiatry.org/File%20Library/Psychiatrists/Practice/DSM/APA\\_DSM-5-Gender-Dysphoria.pdf](https://www.psychiatry.org/File%20Library/Psychiatrists/Practice/DSM/APA_DSM-5-Gender-Dysphoria.pdf) Accessed 12 July 2018.
- 8 Bonifacio HJ, Rosenthal SM. Gender variance and Dysphoria in Children and Adolescents. *Pediatr Clin North Am.* 2015. 62(4):1001-1016. Doi 10.1016/j.pcl.2015.04.013
- 9 Clark T, Lucassen M, Bullen P et al. The Health and Well-Being of Transgender High School Students: Results From the New Zealand Adolescent Health Survey (Youth'12). *J Adolescent Health.* 2014;55:93-99.
- 10 Clark TC, Fleming T, Bullen P, et al. Youth'12 prevalence tables: The health and wellbeing of New Zealand secondary school students in 2012. Auckland, New Zealand: University of Auckland; 2013. Accessed 14 July 2018.
- 11 Telfer M, Tollitt M, Feldman D. Transformation of health-care and legal systems for the transgender population: The need for change. *JPCH.* 2015. 51;1051-1053.
- 12 *All of Us: Health and Physical Education Resource Understanding Gender Diversity, Sexual Diversity and Intersex Topics for Years 7 and 8*, Safe Schools Coalition Australia and Minus18, pg. 8. [http://www.education.vic.gov.au/Documents/about/programs/health/AllOfUs\\_UnitGuide.pdf](http://www.education.vic.gov.au/Documents/about/programs/health/AllOfUs_UnitGuide.pdf) Accessed 14 January 2018. Now available at [https://www.minus18.org.au/images/ALL\\_OF\\_US.pdf](https://www.minus18.org.au/images/ALL_OF_US.pdf)
- 13 DSM-5. 2013, Op. cit., pg. 452.
- 14 Haas A, Eliason M, Mays V et al. Suicide and Suicide Risk in Lesbian, Gay, Bisexual, and Transgender Populations: Review and Recommendations. *J Homosex.* 2011;58:10-51. Doi: 10.1080/00918369.2011.534038
- 15 Fan X et al. An exploratory study about inaccuracy and invalidity in adolescent self-report surveys. *Field Methods.* Savon-Williams and Joyner. 2006;18(3):223-244. Doi 10.1177/152822X06289161
- 16 "Gender identity debate swirls over CAMH psychologist, transgender program", *The Globe and Mail.* 14 February 2016. <https://www.theglobeandmail.com/news/toronto/gender-identity-debate-swirls-over-camh-psychologist-transgender-program/article28758828/> Accessed 14 July 2018.
- 17 Zucker KJ, Wood H, Singh D, Bradley SJ. A developmental biopsychosocial model for the treatment of children with gender identity disorder. *J Homosex.* 2012;59(3):369-397. Doi 10.1080/00918369.2012.653309
- 18 Wallien MS, Swaab H, Cohen-Kettenis PT. Psychiatric comorbidity among children with gender identity disorder. *J Am Acad Child Adolesc Psychiatry.* 2007;46(10):1307-1314. Doi 10.1097/chi.0b013e3181373848
- 19 Steensma TD, Zucker KJ, Kreukels BP et al. Behavioural and emotional problems on the Teacher's Report Form: a cross-national, cross-clinic comparative analysis of gender dysphoric children and adolescents. *J Abnorm Child Psychol.* 2014;42(4):635-647. Doi: 10.1007/s10802-013-9804-2
- 20 Spack NP, Edwards-Leeper L, Feldman HA, et al. Children and adolescents with gender identity disorder referred to a pediatric medical center. *Pediatrics.* 2012;129(3):418-425. Doi 10.1542/peds.2011-0907
- 21 Hewitt JK, Paul C, Kasiannan P et al. Hormone treatment of gender identity disorder in a cohort of children and adolescents. *Med J Aust.* 2012;196(9):578-581. Doi 10.5694/mja12.10222
- 22 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). Doi 10.1542/peds.2017-3845
- 23 Ibid.
- 24 Kaltiala-Heino R, Sumia M, Työlajärvi M et al. Two years of gender identity service for minors: overrepresentation of natal girls with severe problems in adolescent development. *Child Adol Psych Mental Health.* 2015;9(9). Doi: 10.1186/s13034-015-0042-y
- 25 Kaltiala-Heino R, Bergman H, Työlajärvi M, and Frisén L. Gender dysphoria in adolescence: current perspectives. *Adolesc Health Med Ther.* 2018; 9: 31-41. Doi <https://doi.org/10.2147/AHMT.S135432>
- 26 Kaltiala-Heino R, Sumia M, Työlajärvi M, Lindberg N. Two years of gender identity service for minors: overrepresentation of natal girls with severe problems in adolescent development. *Child Adolesc Psychiatry Ment Health.* 2015;9:9. Doi 10.1186/s13034-015-0042-y
- 27 Chen M, Fuqua J, Eugster EA. Characteristics of referrals for gender dysphoria over a 13-year period. *J Adolesc Health.* 2016;58(3):369-371. Doi 10.1016/j.jadohealth.2015.11.010
- 28 Holt V, Skagerberg E, Dunsford M. Young people with features of gender dysphoria: demographics and associated difficulties. *Clin Child Psychol Psychiatry.* 2016;21(1):108-118. Doi 10.1177/1359104514558431
- 29 Van Der Miesen AI, Hurley H, De Vries AL. Gender dysphoria and autism spectrum disorder: a narrative review. *Int Rev Psychiatry.* 2016;28(1):70-80. Doi 10.3109/09540261.2015.1111199
- 30 Lai M, Lombardo MV, Baron-Cohen S. Autism. *Lancet.* 2014;383(9920):896-910. Doi 10.1016/S0140-6736(13)61539-1
- 31 van Der Miesen AI, et al. 2016, Op. cit.
- 32 Strang JF, Kenworthy L, Dominska A, et al. Increased gender variance in autism spectrum disorders and attention deficit hyperactivity disorder. *Arch Sex Behav.* 2014;43(8):1525-1533. Doi 10.1007/s10508-014-0285-3
- 33 Karasic D, Ehrensaft D. We must put an end to gender conversion therapy for kids. *Wired.* 2015. <http://www.wired.com/2015/07/must-out-an-end-gender-conversion-therapy-kids/> Accessed 18 October 2016.
- 34 Ibid.
- 35 Aitken M, VanderLaan DP, Wasserman L, Stojanovski S, Zucker KJ. Self-harm and suicidality in children referred for gender dysphoria. *J Am Acad Child Adolesc Psychiatry.* 2016;55(6):513-520. Doi 10.1016/j.jaac.2016.04.001
- 36 Holt V, Skagerberg E, Dunsford M. Young people with features of gender dysphoria: demographics and associated difficulties. *Clin Child Psychol Psychiatry.* 2016;21(1):108-118. Doi 10.1177/1359104514558431
- 37 Ibid.

- 38 Mayes SD, Gorman AA, Hillwig-Garcia J et al. Suicide ideation and attempts in children with autism. *Res Autism Spec Dis.* 2013;7(1):109-119. Doi 10.1016/j.rasd.2012.07.009
- 39 Clark TC (2013) Op. cit.
- 40 Aitken M, VanderLaan DP, Wasserman L, Stojanovski S, Zucker KJ. Self-harm and suicidality in children referred for gender dysphoria. *J Am Acad Child Adolesc Psychiatry.* 2016;55(6):513-520. Doi 10.1016/j.jaac.2016.04.001
- 41 Muehlenkamp JJ, Claes L, Havertape L, Plener PL. International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. *Child Adolesc Psychiatry Ment Health.* 2012;6(10). Doi 10.1186/1753-2000-6-10
- 42 Lewinsohn PM, Rohde P, Seeley JR. Adolescent suicidal ideation and attempts: risk factors and clinical implications. *Clin Psychol Sci Pract.* 1996;3(1):25-46. Doi 10.1111/j.1468-2850.1996.tb00056.x
- 43 Faulkner AH, Cranston K. Correlates of same-sex sexual behavior in a random sample of Massachusetts high school students. *Am J Public Health.* 1998 Feb;88(2):262-266. Doi 10.2105/AJPH.88.2.262
- 44 Holt V et al (2016), Op. cit.
- 45 De Vries AL, Cohen-Kettenis PT. Clinical management of gender dysphoria in children and adolescents: the Dutch approach. *J Homosex.* 2012;59(3):301-320. DOI:10.1080/00918369.2012.653300
- 46 Murad MH, Elamin MB, Garcia MZ, Mullan RJ, Murad A et al. Hormonal therapy and sex reassignment: a systematic review and meta-analysis of quality of life and psychosocial outcomes. *Clin Endocrinol (Oxf)* 2010;72(10): 214-231. Doi 10.1111/j.1365-2265.2009.03625.x
- 47 Dhejne C, Lichtenstein P, Boman M et al. Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden. *PLOS 1.* 2011;6(2): e16885. Doi 10.1371/journal.pone.0016885
- 48 De Cuypere, Elaut E, Heylens G, et al. Long term follow up: psychosexual outcome of Belgian transsexuals after sex reassignment surgery. *Sexologies.* 2006;15:126-133. Doi: 10.1016/j.sexol.2006.04.002
- 49 Dhejne C, Lichtenstein P, Boman M et al. Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden. *PLOS 1.* 2011;6(2):e16885. Doi 10.1371/journal.pone.0016885
- 50 Haas A (2011), Op. cit.
- 51 Zucker KJ. Children with gender identity disorder. Is there a best practice? *Neuropsychiatrie de l'enfance et de l'adolescence.* 2008;56(6):358-364. Doi 10.1016/j.neurenf.2008.06.003
- 52 Zucker KJ, Lambert S, Bradley SJ et al. Risk factors for general behavior problems in boys with gender identity disorder. Presented at 19<sup>th</sup> Symposium of the Harry Benjamin International Gender Dysphoria Association. 2005. Bologna Italy.
- 53 Zucker KJ, Bradley SJ, Moshe I. Delayed naming of a baby boy. *J of Psychology: human sexuality.* 1990;6(1):57-68. Doi: 10.1300/J056v06n01\_04
- 54 Marantz S, Coates S. Mothers of boys with gender identity disorder: a comparison of matched controls. *J Am Acad. Child and Adolescent Psychiatry.* 1991;30(2):310-315. Doi 10.1097/00004583-199103000-00022
- 55 Zucker KJ. Children with gender identity disorder. Is there a best practice? *Neuropsychiatrie de l'enfance et de l'adolescence.* 2008;56(6):358-364. Doi 10.1016/j.neurenf.2008.06.003
- 56 Zucker KJ. The myth of persistence: response to 'a critical commentary on follow-up studies and 'desistance' theories about transgender and gender non-conforming children; by Temple Newhook et al. *International Journal of Transgenderism.* 2018;19 (2):231-245. Doi:10.1080/15532739.2018.1468293
- 57 Ibid.
- 58 Zucker KJ, Wood H, Singh D, Bradley SJ. A developmental, biopsychosocial model for the treatment of children with gender identity disorder. *Journal Homosex.* 2012;59(3):369-397. Doi 10.1080/00918369.2012.653309
- 59 Zucker KJ, 2008. Op. cit.
- 60 Ristori J, Steensma TD. Gender dysphoria in childhood. *Int Rev Psych.* 2016;28 (1):13-20. Doi 10.3109/09540261.2015.1115754
- 61 De Vries AL, Cohen-Kettenis PT. Clinical management of gender dysphoria in children and adolescents: the Dutch approach. *J Homosex.* 2012;59(3):301-320. DOI:10.1080/00918369.2012.653300
- 62 Coleman E, Bockting W, Boltzer M et al. Standards of care for the health of transsexual, transgender and gender non-conforming people. Version 7. *International Journal of Transgenderism* 2011;13:165-232. Doi:10.1080/15532739.2011.700873.
- 63 Zucker, 2018. Op. cit.
- 64 Practice parameter on gay, lesbian, or bisexual sexual orientation, gender nonconformity, and gender discordance in children and adolescents. *American Academy of Child and Adolescent Psychiatry.* 2012;51:957-974. Doi:10.1016/j.jaac.2012.07.004
- 65 "Transgender children are rare, but we're being told ...", *Daily Telegraph*, 12 September 2017. <https://www.dailytelegraph.com.au/rendezview/what-madness-can-justify-mutilating-our-children/news-story/84c7426daf4c543d1074a08fd9bf3d41> Accessed 10 July 2018.
- 66 Steensma TD, Cohen-Kettenis PT. Gender transitioning before puberty. *Arch Sex Behav.* 2011;40(4):649-650. Doi 10.1007/s10508-011-9752-2
- 67 Hembree WC, Cohen-Kettenis P, Delemarre-van de Waal HA et al. Endocrine treatment of transsexual persons: an Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab.* 2009 Sep;94(9):3132-3154. Doi 10.1210/jc.2009-0345
- 68 Grigороva M, Sherwin BB, Tulandi T. Effects of treatment with leuprolide acetate depot on working memory and executive functions in young premenopausal women. *Psychoneuroendocrinology.* 2006;31(8):935-947. Doi 10.1016/j.psyneuen.2006.05.004
- 69 Nelson CJ, Lee JS, Gamboa MC et al. Cognitive effects of hormone therapy in men with prostate cancer: a review. *Cancer.* 2008;113(5):1097-1106. Doi 10.1002/cncr.23658
- 70 Craig MC et al. Gonadotropin hormone releasing hormone agonists alter prefrontal function during verbal encoding in young women. *Psychoneuroendocrinology.* 2007;32(8-10):116-1127. Doi 10.1016/j.psyneuen.2007.09.009
- 71 Ohlsson B. Gonadotrophin-releasing hormone and its physiological and pathophysiological roles in relation to the structure and function of the gastro-intestinal tract. *European Surgical Research.* 2016;57:22-33 <https://doi.org/10.1159/000445717>
- 72 Sand E, Linninge C, Lozinska L et al. Buserelin treatment to rats causes enteric neurodegeneration with moderate effects on crf-immunoreactive neurons and enterobacteriaceae in colon, and in acetylcholine-mediated permeability in ileum. *BMC research notes.* 2015;8:824. <https://doi.org/10.1186/s13104-015-1800-x>
- 73 Jennes et al. *The Gonadotrophin-releasing hormone and its receptor. Hormones, Brain and Behaviour 2<sup>nd</sup> edn.* Pfaff DW (ed) Academic Press 2009; pgs. 1645-1668.
- 74 Casoni F, Malone SA, Belle M et al. Development of the neurons controlling fertility in humans: new insights from 3D imaging and transparent fetal brains. *Development.* 2016;143(21):3969-3981. Doi 10.1242/dev.139444
- 75 Jennes L, Conn P. Gonadotropin releasing hormone and its receptors in the rat brain. *Front Neuroendocrinol.* 1994;15(1):51-77. Doi 10.1006/frne.1994.1003
- 76 Kauffman AS. Emerging functions of gonadotropin releasing hormone II in mammalian physiology and behaviour. *J Neuroendocrinol.* 2004;16(9):794-806. Doi 10.1111/j.1365-2826.2004.01229.x

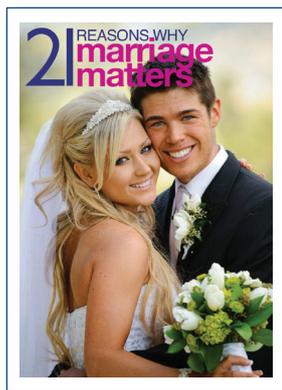
- 77 Quintanar JL, Salinas E, Gonzalez R. Expression of gonadotropin-releasing hormone receptor in cerebral cortical neurons of embryos and adult rats. *Neurosci Lett.* 2007;411(1):22-25. Doi 10.1016/j.neulet.2006.06.077
- 78 Stopa EG, Koh ET, Svendsen CN, Rogers WT, Schwaber JS, King JC. Computer- assisted mapping of immunoreactive mammalian gonadotropin-releasing hormone in adult human basal forebrain and amygdala. *Endocrinology.* 1991;128(6):3199–3207. Doi 10.1210/endo-128-6-3199
- 79 Ban E, Crumeyrolle-Arias M, Latouche J et al. GnRH receptors in rat brain, pituitary and testis; modulation following surgical and gonadotropin releasing hormone agonist induced castration. *Mol Cell Endocrinol.* 1990;70(1):99-107. Doi 10.1016/0303-7207(90)90063-E
- 80 Caraty A, Skinner DC. Gonadotrophin-releasing hormone in third ventricular cerebrospinal fluid: endogenous distribution and exogenous uptake. *Endocrinology.* 2008;149(10):5227-5234. Doi 10.1210/en.2007-1636
- 81 Pfaff D, Lewis C, Diakow C et al. Neurophysiological analysis of mating behavior responses as hormone sensitive reflexes. *Prog Physiol Psychol.* 1973;5:253-297.
- 82 Moss RL, McCann SM. Induction of mating behavior in rats by luteinizing hormone releasing factor. *Science.* 1973;181(4095):177-179. Doi 10.1126/science.181.4095.177
- 83 Pfaff DW, Luteinizing hormone-releasing factor potentiates lordosis behavior in hypophysectomized ovariectomized female rats. *Science.* 1973;182(4117):1148-1149.
- 84 Maney DL, Richardson RD, Wingfield JC. Central administration of chicken gonadotropin-releasing hormone-11 enhances courtship behavior in a female sparrow. *Horm Behav.* 1997;32(1):11-18. Doi 10.1006/hbeh.1997.1399
- 85 Schimi PA, Rissmin EF. Effects of gonadotropin-releasing hormones, corticotrophin-releasing hormone and vasopressin on female sexual behavior. *Horm Behav.* 2000;37(3):212-220. Doi 10.1006/hbeh.2000.1575
- 86 Riskind P, Moss RL. Midbrain Central Gray: LHRH infusion enhances lordotic behavior in estrogen-primed ovariectomized Rats. *Brain Res Bull.* 1979;4(2):203-205. Doi 10.1016/0361-9230(79)90282-X
- 87 Argiolas A, Melis MR. Neuropeptides and central control of sexual behavior from past to present: a review. *Prog neurobiol* 2013;108:80-107. Doi: 10.1016/j.pneurobio.2013.06.006
- 88 Bentley GE, Jensen JP, Kaur GJ et al. Rapid inhibition of female sexual behavior by gonadotropin-inhibiting hormone (GnIH). *Horm Behav.* 2006;49(4):550-555. Doi 10.1016/j.yhbeh.2005.12.005
- 89 Martin GB, Oldham CM, Cownie Y et al. The physiological response of anovulatory ewes to the introduction of rams – A review. *Live Prod Sci.* 1986;15(3):219-47. Doi 10.1016/0301-6226(86)90031-X
- 90 Ungerfeld R. Socio-sexual signaling and gonadal function: opportunities for reproductive management in domestic ruminants. *Soc Reprod Fertil Suppl.* 2007;64(1):207-221. Doi: 0.5661/RDR-VI-207
- 91 Hawken PA, Martin GB. Sociosexual stimuli and gonadotropin-releasing hormone/luteinizing hormone secretion in sheep and goats. *Domest Anim Endocrinol.* 2012;43(2):85-94. Doi 10.1016/j.domaniend.2012.03.005
- 92 Nuruddin S, Bruchhage M, Ropstad E et al. Effects of peripubertal gonadotropin-releasing hormone agonist on brain development in sheep ... a magnetic resonance imaging study. *Psychoneuroendocrinology.* 2013;38(10):1994-2002. Doi 10.1016/j.psyneuen.2013.03.009
- 93 Nuruddin S, Wojniesz S, Ropstad E et al. Peri-pubertal gonadotropin-releasing hormone analog treatment affects hippocampus gene expression without changing spatial orientation in young sheep. *Behav Brain Res.* 2013;242(1):9-16. Doi 10.1016/j.bbr.2012.12.027
- 94 Nuruddin S, Krogenaes A, Brynildsrud OB et al. Peri-pubertal gonadotropin-releasing hormone agonist treatment affects sex based gene expression of amygdala in sheep. *Psychoneuroendocrinology.* 2013;38(12):3115-3127. Doi 10.1016/j.psyneuen.2013.09.011
- 95 Evans NP, Robinson JE, Erhard HW et al. Development of psychophysiological motoric reactivity is influenced by peripubertal pharmacological inhibition of GnRH action-results of an ovine model. *Psychoneuroendocrinology.* 2012;37(11):1876-1884. Doi 10.1016/j.psyneuen.2012.03.020
- 96 Hough D, Bellingham M, Haraldsen IRH et al. 2017 Spatial memory is impaired by peripubertal GnRH agonist treatment and testosterone replacement in sheep. *Psychoneuroendocrinology.* 2017;75(1):173-182. Doi 10.1016/j.psyneuen.2016.10.016
- 97 Hough D, Bellingham M, Haraldsen IRH et al. A reduction in long-term spatial memory persists after discontinuation of peripubertal GnRH agonist treatment in sheep. *Psychoneuroendocrinology.* 2017;77(1):1–8. Doi 10.1016/j.psyneuen.2016.11.029
- 98 Wojniesz S, Vogeel C, Ropstad E et al. Prepubertal gonadotropin-releasing hormone analog leads to exaggerated behavioral and emotional sex differences in sheep. *Hormones and Behaviour.* 2011;59(1):22-27. Doi 10.1016/j.yhbeh.2010.09.010
- 99 Prange-Kiel J, Jarry H, Schoen M et al. Gonadotropin releasing hormone regulates spine density via its regulatory role in hippocampal oestrogen synthesis. *J Cell Biol.* 2008;180(2):417-426. Doi 10.1083/jcb.200707043
- 100 Quintanar JL, Calderón-Vallejo D, Hernández-Jasso I. Effects of GnRH on Neurite Outgrowth, Neurofilament and Spinophilin Proteins Expression in Cultured Spinal Cord Neurons of Rat Embryos. *Neurochem Res.* 2016;41(10):2693-2698. Doi 10.1007/s11064-016-1983-0
- 101 Naftolin F, Ryan KJ, Petro Z. Aromatization of androstenedione by the diencephalon. *J Clin Endocrinol Metab.* 1971;33(2):368-370. Doi 10.1210/jcem-33-2-368
- 102 *The World Professional Association for Transgender Health. Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People. Version 7.* [https://www.wpath.org/media/cms/Documents/SOC%20v7/SOC%20V7\\_English.pdf](https://www.wpath.org/media/cms/Documents/SOC%20v7/SOC%20V7_English.pdf) Accessed 14 July 2018.
- 103 Shumer DE, Nokoff NJ, Spack NP. Advances in care of transgender children and adolescents. *Adv Pediatr.* 2016;63(1):79-102. Doi 10.1016/j.yapd.2016.04.018
- 104 Hembree WC et al. 2009. *ibid.*
- 105 Chew D, Anderson J, Williams K et al. Hormonal Treatment in Young people with Gender Dysphoria: a systematic review. *Pediatrics* 2018;141(4). Doi 10.1542/peds.2017-3742
- 106 Neurosteroids. Special Issue. *J Steroid Biochemistry and molecular biology.* 2012;131. <https://www.sciencedirect.com/journal/the-journal-of-steroid-biochemistry-and-molecular-biology/vol/131/issue/3>
- 107 Fester L, Prange-kiel J, Jarry H, Rune GM. Estrogen synthesis in the hippocampus. *Cell Tissue Res.* 2011;345(3):285-294. Doi 10.1007/s00441-011-1221-7
- 108 Spencer JL, Waters EM, Romeo RD et al. Uncovering the mechanisms of estrogen effects on hippocampal function. *Front Neuroendocrinol.* 2008;29(2):219-237. Doi 10.1016/j.yfrne.2007.08.006
- 109 García-Segura LM. Aromatase in the brain: not just for reproduction anymore. *J Neuroendocrinol.* 2008;20(6):705-712. Doi 10.1111/j.1365-2826.2008.01713.x
- 110 Terasawa E, Kenealy BP. Neuroestrogen, rapid action of estradiol, and GnRH neurons. *Front Neuroendocrinol.* 2012;33(4):364-375. Doi 10.1016/j.yfrne.2012.08.001
- 111 Quintanar JL, Calderón-Vallejo D, Hernández-Jasso I. Effects of GnRH on Neurite Outgrowth, Neurofilament and Spinophilin Proteins Expression in Cultured Spinal Cord Neurons of Rat Embryos. *Neurochem Res.* 2016;41(10):2693-2698. Doi 10.1007/s11064-016-1983-0

- 112 "Trans teenagers no longer need judge's approval for hormone therapy, court rules", ABC News, 30 November 2017. <http://www.abc.net.au/news/2017-11-30/trans-teens-no-longer-need-court-approval-for-hormone-therapy/9212072> Accessed 14 July 2018.
- 113 Zubiaurre-Elorza L, Junque C, Gomez-Gil E, & Guillamon A. (2014). Effects of cross-sex hormone treatment on cortical thickness in transsexual individuals. *J Sex Med*, 2014;11(5):1248–1261. Doi <https://doi.org/10.1111/jsm.12491>
- 114 Rametti G, Carrillo, B, Gomez-Gil E, Junque C, Zubiaurre-Elorza L, Segovia S., Gomez A, Karadi K, Guillamon, A. Effects of androgenisation on the white matter microstructure of female-to-male transsexuals. A diffusion tensor imaging study. *Psychoneuroendocrinology*, 2012;37, 1261–1269. Doi 10.1016/j.psyneuen.2011.12.019
- 115 Hulshoff Pol HE, Cohen-Kettenis PT, Van Haren NE, et al. Changing your sex changes your brain: Influences of testosterone and estrogen on adult human brain structure. *Eur J Endocrinol*. 2006;155(1):S107–S111. Doi 10.1530/eje.1.02248
- 116 Ibid.
- 117 Ibid.
- 118 Ibid.
- 119 Raisman G, Field PM. Sexual dimorphism in the preoptic area of the rat. *Science*. 1971;173(3998):731-733. Doi 10.1126/science.173.3998.731
- 120 Block GJ, Gorski RA. Estrogen/progesterone treatment in adulthood affects the size of several components of the medial preoptic area in the male rat. *J Comp Neurol*. 1988; 275(4):613-622. Doi 10.1002/cne.902750409
- 121 Nottebohm F. Testosterone triggers growth of brain vocal control nuclei in adult female canaries. *Brain Res*. 1980;189(2):429-436. Doi 10.1016/0006-8993(80)90102-X
- 122 Milrod C. How young is too young: Ethical concerns in genital surgery of the transgender MTF adolescent. *J Sex Med*. 2014;11(2):338-346. Doi 10.1111/jsm.12387
- 123 Weissler JM, Chang BL, Carney MJ et al. Gender affirming surgery in persons with gender dysphoria. *Plast reconstr surg*. 2018;141(3):388e-396e, Doi 10.1097/PRS.00000000000004123
- 124 Rashid M, Tamimy MS. Phalloplasty: the dream and the reality. *Indian J Plast Surg*. 2013;46(2):283-293. Doi 10.4103/0970-0358.118606
- 125 Chew D, Anderson J, Williams K et al. Hormonal Treatment in Young people with Gender Dysphoria: a systematic review. *Pediatrics* 2018;141(4). Doi 10.1542/peds.2017-3742
- 126 Ibid.
- 127 Ibid.
- 128 Becerra-Culqui, et al. Mental Health of Transgender and Gender Nonconforming Youth Compared With Their Peers. 2018 Op. cit.
- 129 Chew D, et al. Hormonal Treatment in Young people with Gender Dysphoria: a systematic review, 2018. Op. cit.
- 130 Ibid.
- 131 Ibid.
- 132 Shumer DE, Spack NP. Current management of gender identity disorder in childhood and adolescence: guidelines, barriers and areas of controversy. *Curr Opin Endocrinol Diabetes Obes*. 2013;20(1):69-73. Doi 10.1097/MED.0b013e32835c711e
- 133 Costa R, Dunsford M, Skagerburg E et al. Psychological support, puberty suppression, and psychosocial functioning in Adolescents with Gender Dysphoria. *J Sex Med*. 2015;12(11):2206-2214 Doi 10.1111/jsm.13034
- 134 de Vries AL, McGuire JK, Steensma TD et al. Young adult psychological outcome after puberty suppression and gender reassignment. *Pediatrics*. 2014;134(4):696-704. Doi 10.1542/peds.2013-2958
- 135 Schwartz D. Listening to children imagining gender: observing the inflation of an idea. *J Homosexuality*. 2012;59(3):460-479. Doi 10.1080/00918369.2012.653314
- 136 Milrod C. How young is too young: Ethical concerns in genital surgery of the transgender MTF adolescent. *J Sex Med*. 2014;11(2):338-346. Doi 10.1111/jsm.12387
- 137 Schwartz D. Listening to children imagining gender: observing the inflation of an idea. *J Homosexuality*. 2012;59(3):460-479. Doi 10.1080/00918369.2012.653314
- 138 Ibid.
- 139 Fuss J, Auer MK, Briken P. Gender dysphoria in children and adolescents: a review of recent literature. *Curr Opin Psychiatry*. 2015;28(6):431-434. Doi 10.1097/YCO.0000000000000203
- 140 California Senate Bill 1172, Chapter 835, 30 September 2012. [http://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=201120120SB1172](http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB1172) Accessed 14 July 2018.
- 141 "Barack Obama calls for end to 'dangerous' practice of conversion therapy for gay minors", ABC News, 9 April 2015. <http://www.abc.net.au/news/2015-04-09/obama-calls-for-end-to-conversion-therapy-for-lgbt-youth/6380424> Accessed 14 July 2018.
- 142 Ontario's *Affirming Sexual Orientation and Gender Identity Act*, 2015 <https://www.ontario.ca/laws/statute/S15018>
- 143 Cheri DiNovo, Wikipedia. [https://en.wikipedia.org/wiki/Cheri\\_DiNovo](https://en.wikipedia.org/wiki/Cheri_DiNovo) Accessed 19 October 2016.
- 144 "Zero tolerance: Andrews to crack down on gay 'conversion' therapy," *The Age* 24 January 2016. <https://www.theage.com.au/national/victoria/zero-tolerance-andrews-to-crack-down-on-gay-conversion-therapy-20160123-gmcimw.html> Accessed 20 October 2016.
- 145 Parliamentary debates, (Hansard) Legislative Assembly. 58<sup>th</sup> Parliament, First session. Wednesday, 10 February 2016, pg. 97. [https://www.parliament.vic.gov.au/images/stories/daily-hansard/Assembly\\_2016/Assembly\\_Daily\\_Extract\\_Wednesday\\_10\\_February\\_2016\\_from\\_Book\\_1.pdf](https://www.parliament.vic.gov.au/images/stories/daily-hansard/Assembly_2016/Assembly_Daily_Extract_Wednesday_10_February_2016_from_Book_1.pdf)
- 146 *Health Complaints Act 2017*, Section 3.
- 147 Ibid, Section 12 (2) (a)
- 148 Ibid., Section 3.
- 149 Ibid., Section 39 (3).
- 150 Transgender students in schools – legal rights and responsibilities", *Legal Issues Bulletin No 55*, December 2014, Education and Communities, NSW Government. <https://education.nsw.gov.au/about-us/rights-and-accountability/media/documents/public-legal-issues-bulletins/LIB-55-Transgender-students-in-schools-legal-rights-and-responsibilities.pdf> Accessed 18 August 2017.
- 151 Hembree WC. et al. (2009), Op. cit.

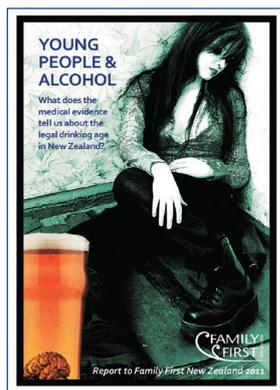
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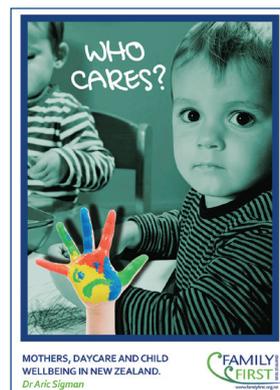
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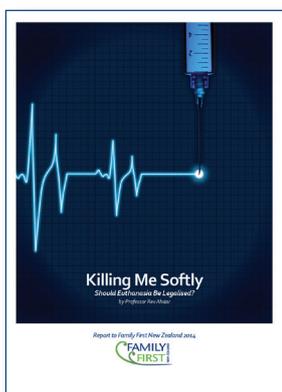
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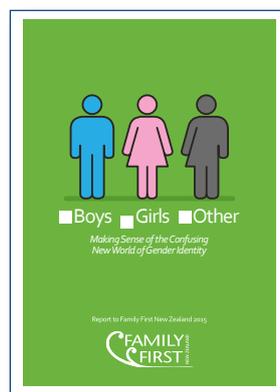
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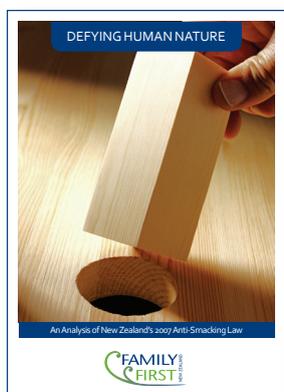
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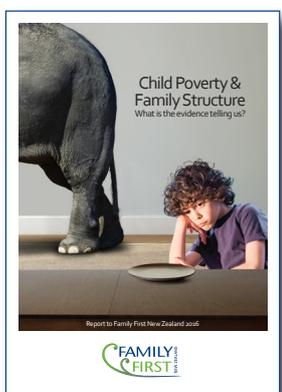
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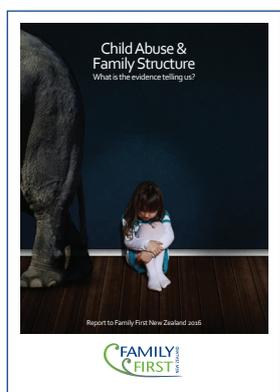
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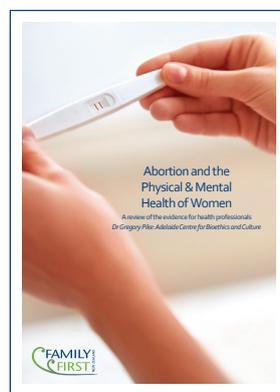
Anti-Smacking Law  
2016



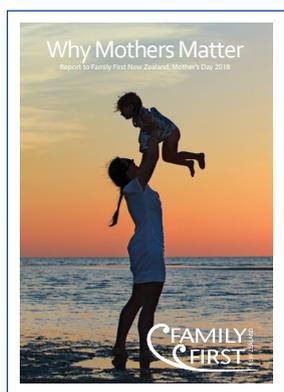
Child Poverty  
2016



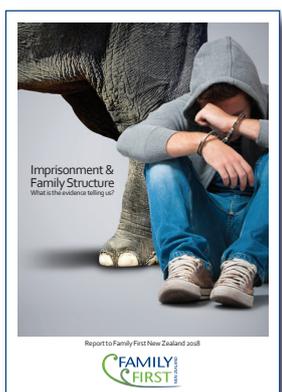
Child Abuse  
2016



Abortion & Health  
2018



Why Mothers Matter  
2018



Family Structure  
2018



Dinner & Family Life  
2018



Why Fathers Matter  
2018