

**Submission to the Federal Minister for Health,
Mr G Hunt.**

**The lack of scientific basis for the medical
pathway of treatment of childhood gender
dysphoria.**

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Mr G Hunt

Dear Sir,

I write to thank you for your concern about the increasing number of Australian children reported to be suffering from gender dysphoria, a new phenomenon. I look back to the experience of Dr Robert Kosky when he was Director of Psychiatric Services at the Perth Princess Margaret Hospital for Children, and WA State Director of Child and Adolescent Psychiatry Services and reported his experience with only 8 confused children in the five years from 1979 to 1984¹. Now almost 2-3

children are being presented to the Perth children's hospital every week.

I refer to my own discussions in 2016 with 28 of my paediatric colleagues in Australia from whose 931 cumulative years of practice only 12 cases could be recalled: 10 with associated mental disorder and 2 victims of prolonged sexual abuse. Indeed, when I was in general paediatrics, at the forefront of child abuse in Western Sydney, for a child to attest to be of the opposite sex was taken to be suggestive of abuse. Nevertheless, in my excess of 50 practice in paediatrics, no child was ever brought to me with concerns of confusion in gender identity. Nor was confusion over gender ever raised by a parent or carer in intimate discussions of sexual behaviours of their children.

Now, the numbers of children being brought to children's hospitals with gender confusion are increasing markedly. Across Australia, they may have arisen from 211 in 2014 to 727 in 2018, giving a total of 2415 children and adolescents

who may currently be undergoing therapy. To permit perspective, about 960 children and adolescents develop cancer each year in Australia.²

In a survey conducted by WA Telethon, it is reported that of 602 transgendering correspondents aged from 14-25, 58.3% have transitioned socially, 4.7% are taking puberty blockers, 28.3% are taking cross sex hormones, 34% would like to start cross sex hormones, 6.3% have undergone gender confirming surgery and 20.9% intend to undergo it in the future.³

Given there are no plausible biological causes for what can be described as an epidemic, it is appropriate for health authorities to investigate the problem. In the UK, it is reported that the 'explosion in the number of children wanting to change sex has prompted an inquiry by ministers' with Penny Mordaunt, the Minister for Women and Equalities, declaring she wanted 'to understand the reasons behind a 4,400 per cent

increase in girls being referred for transitioning treatment in the past decade'. The Minister is reported to have declared 'officials will look into the role of social media and the teaching of transgender issues in schools as part of their inquiries'⁴.

Therefore, the Federal Minister for Health is requested to investigate the outbreak of gender dysphoria in Australia, especially because it appears to have an infectious characteristic. For example, in the same year in a high school in Western Sydney, several girls were reported to me to have 'suddenly' evinced concerns over their gender identity.

The relationship between gender confusion and co-incidental mental disorder has long been recognised.⁵⁶⁷⁸⁹ Proponents of medicalisation declare the dysphoria may cause the mental disorder, but there are confirmations of it presenting after the onset of mental disease, as part of its manifestations¹⁰. Autism spectrum

disease, presenting in early childhood is known to be associated with later gender dysphoria, perhaps related to fixation of ideas¹¹.

It is thus recognised that children expressing confusion over their gender are vulnerable children, suffering broadly, who deserve a considered approach to diagnosis and treatment. One symptom should not predominate but be seen to represent an underlying complexity. To give a medical analogy, just because children with pneumonia may vomit, their illness should not be ascribed to infection of the intestines rather than the lungs.

With this in mind, vulnerable children with a symptom of gender confusion should not be denied the benefits of extensive support from traditional psychological, psychiatric and family therapy. It should not be forgotten that such therapy is known to have been effective in the past for children with disordered appreciation of their gender identity¹²¹³¹⁴¹⁵¹⁶¹⁷¹⁸ It is widely

reported that most children with gender dysphoria will orientate to natal gender through puberty¹⁹.

The Minister is requested to review the evidence for the positive effect of traditional psychological, psychiatric and family therapy

The question to the Minister is thus ‘why are children rushed into a pathway of medicalisation when it has been proven that supportive ‘wait and see’ will suffice. I, personally, have heard the sad refrain from a number of parents that their confused children were submitted to a brief questionnaire followed by a short consultation, after which the diagnosis of ‘being born in the wrong body’ was made. The parents were then advised to ‘say good bye to their former son/daughter and welcome their new daughter/son’. Almost universally, attempts at consolation for the parents were based on the argument ‘it is better to have a live daughter/son than a dead son/daughter’. Almost universally, counselling was

then offered: to the parent to accept the new reality, not for the child to resolve the former.

The Minister is requested to investigate the extent of psychological, psychiatric and family therapy which has been made available to children who are now receiving hormone therapy and who have received surgical intervention in the process of approximating the external features of the opposite sex. How many sessions were held? How long did the sessions last? Who supervised the sessions? On what basis was it deemed necessary to implement hormonal therapy?

At this stage, the issue of likelihood of suicide should be addressed. There is, in fact, little evidence on the association between gender dysphoria per se and childhood suicide²⁰. Self-harm is reported in many children and adolescents²¹²² and, certainly in the cohort with gender dysphoria. A large UK study wondered if the numbers threatening self-harm in their cohort

of dysphoric children “simply reflect trends in the general population”²³. An article in the Journal of Homosexuality concludes “very few suicide decedents (sic)” have been identified as having “minority sexual orientation” in studies in North America: 3 of 120 adolescent suicides in New York, and 4 of 55 in Quebec”; and warns conclusions based on “small numbers ... must be regarded as tentative”²⁴.

It should, however, be emphasised that gender dysphoria is associated with co-morbid mental disorders recognised for a propensity for self-harm²⁵. The children are, in general, at risk, and should be supported by traditional psychiatric therapy.

Gender dysphoric children are also at risk because of their associated high rate of family disorder, whose stresses are known to affect all children²⁶.

It should, moreover, be emphasised that prevention of suicide may be more effectively implemented by helping the child become

‘comfortable’ in the skin in which it was born. The suicide rate in transgendered adults has been reported to be at least 20 times higher than in the ordinary population²⁷²⁸²⁹

The Minister is requested to investigate the role of gender dysphoria in suicides in Australia, noting that answering ‘Yes’ to a question to a child or adolescent as to whether they ever felt like harming themselves, though of deep concern, is not necessarily an expression of intent. The Minister should be aware of the powerful tool for manipulation that exists in an alleged threat of suicide.

In England, it was reported ‘there are concerns among some MPs that drug treatment is being offered too readily to children - some of them as young as 10 - without fully understanding what lies behind their desire to change sex’.

The administration of gender drugs is usually preceded by 'social affirmation' of a child's protestation that it is born in the wrong body. There appears to have been a change in the epidemiology of this phenomenon which should be appreciated by authorities. In the era of the 1970's to 80's, most confusion, as reported by Robert Kosky, concerned young males who were found to be in a pathological relationship of symbiosis with their mothers. Typically, the single mother had been abandoned by an adult male, and persuaded in her mind to feel more comfortable with the boy the more he aped the female persona. Others have pointed to a higher than expected prevalence of psychological problems of mothers³⁰³¹³². In Kosky's experience, when separated from the mother, the child reverted to natal identity.

In current experience, gender confusion is more prevalent in in young adolescent natal girls when it has a rapid onset and appears associated with social media³³.

In either case, there is a need for traditional psychiatric exploration and standard therapy before a superficial process of confirmation (described above) and subsequent progress to social affirmation in which all the authorities of the adolescent from medical personnel, to parents, to schools, to the media, affirm the choice of the child to attempt to identify a gender contrary to the direction of chromosomes.

The Minister is requested to investigate the association of gender dysphoria with social media, and the promotion of the ideology of gender fluidity in schools.

Social affirmation of a child's or adolescent's identification with the opposite sex is dangerous because it is likely to lead to hormonal therapy and even surgery, whose risks will be explained below. Given gender confused children are almost always suffering from mental disorder including autism, depression and anxiety, they will, of course, appreciate all the extra attention,

rendering them all the more susceptible to the enthusiasm of adults for their change in identity. Are these vulnerable children capable of mustering the strength to deny the influence of the authority figures and to declare 'No, I realise I really am a boy/girl'. It is not surprising then that most children who have been socially affirmed progress to the next step, drug therapy, which may be administered at the earliest signs of puberty which typically appear from 9-11 years of age.

The Minister is requested to review laws which compel school and other authorities to take part in the social transition of a vulnerable child whose body identification is contrary to its chromosomes³⁴. To be aware that participation in an experimental procedure that will lead to irretrievable intervention in a child is a challenge to many consciences. This is of special concern when it is widely publicised that most affected children will revert to natal gender without intervention.

From social affirmation, the next step is the introduction of 'puberty blockers'. These are analogues of natural hormones which were developed in the 70's and shown capable of blocking the cascade of hormones that began deep in the brain and progressed to the gonads, causing them to release testosterone and oestrogen. These sex hormones stimulate development of secondary characteristics, including cerebral sexualisation.

They were administered for pathological, early development of puberty which they blocked, and to adults suffering from diseases worsened by continued production of sex hormones, for example, prostate cancer in men and endometriosis in women.

They began to be employed in the medical treatment of childhood gender dysphoria in the 80's, in order, allegedly, to reduce distress caused by the appearance of unwanted sex characteristics, and to give the child more time to

contemplate its sexual identity and procreative future. Repeatedly, and under oath in Family Court of Australia proceedings, proponents declared their effects to be 'safe and entirely reversible'.

Research on sheep has proven the above claim to be wrong. In universities in Glasgow and Oslo, the administration of blockers has resulted in demonstrative effect on the limbic system which has hypertrophied, and in which the action of many genes has been found to altered. In response, it has been demonstrated that the cognitive performance of the sheep has been reduced, and emotional lability increased³⁵³⁶³⁷³⁸³⁹⁴⁰⁴¹.

Studies on executive function of adult humans on blockers has found an associated reduction in cognitive and psychological performance though confounders such as age, pathology and treatment could not be discounted⁴²⁴³⁴⁴⁴⁵.

Furthermore, research on intestinal disorders in women receiving blockers to reduce the effect of oestrogen in endometriosis, reveals an association with marked reduction of the number of intestinal neurons⁴⁶, raising the possibility of a widespread role for the hormone specifically blocked in the brain⁴⁷⁴⁸.

Therefore, the claim of safety for the use of blockers in children is not substantiated by international research. It should not be overlooked that puberty is associated with a great development of cerebral anatomy, from organisation, to myelination, to apoptosis. Administration of any drug shown to affect neuronal tissue should be undertaken only with rigorous scientific basis.

The Minister is requested to investigate why international research is being ignored, and why blockers are being administered to children without scientific substantiation. Their uncontrolled use amounts to experimentation.

Their use without full disclosure of known side effects is both unethical and medico-legally dangerous.

The Minister is pointed to the conclusions of the Rogers vs Whittaker legal case⁴⁹ in which was confirmed an obligation by a medical practitioner to reveal even a one in ten thousand possibility of material side effect of therapy. Given public hospitals are involved in the administration of a drug with undisclosed but proven side effects revealed in laboratory animals, and strongly suggested effects in humans, who will be responsible for compensation when these already vulnerable children claim handicaps are the result of un-informed treatment?

The effect of blockers on nerve cells is only part of the problem of their administration. It is claimed their use will permit time for contemplation of sexual identity but there are indications that the primary hormone blocked plays a central role in

sexualisation, as well as a secondary role in stimulating testosterone and oestrogen.

The blocked hormone certainly plays a role in the limbic system which eventually integrates memory, emotions, and cognition into executive function, ie into the internal 'world view' of the brain and its associated ambitions, identities and decisions.

However, widespread that the blocked hormone plays a widespread role in the brain is suggested by the presence of its special receptors in the cerebrum and spinal cord⁵⁰. It has been also shown to be associated with a 'sex centre' in the midbrain which was identified in the 70's. If the blocked hormone is injected into the midbrain of an immature animal, it provokes precocious sexualised behaviour: young female animals prepare for mounting and males to oblige⁵¹⁵²⁵³⁵⁴⁵⁵. This sexualising effect is blocked by puberty blockers⁵⁶.

The sexualising effect of the brain was already initiated several weeks after conception through a male specific effect of a gene on the Y chromosome. This effect seems to be further activated in puberty through the added effect of the sex hormones, testosterone and oestrogen, as part of their overall effect on male/female characterisation.

A great deal is unknown about the genetic and hormonal bases of sexual maturation but sufficient is known to question the validity of the claim that blockers permit time to contemplate sexual identity and procreative future. How can that future be contemplated appropriately in a child whose sexualising influences have been neutered by drugs? How can a child be expected to develop a 'world view' including identity when its limbic system has been affected?

The Minister is requested to investigate the claim that blocking of puberty will permit appropriate contemplation of gender identity in vulnerable

children. This claim is being promoted in public hospitals and has no scientific basis.

Given the pressures of social affirmation and then the neutering effect of blockers, it is not surprising reports claim most children on blockers progress to the next stage, the administration of cross sex hormones to stimulate the desired external appearance.

Though proponents of cross sex therapy list many complications of such therapy, I could find no reference in eg Family Court proceedings or proclaimed Guidelines for management of gender dysphoria to any effects on the brain.

The research by Hulshoff et al which reveals a rate of shrinkage of the grey matter of the male brain on oestrogens at a rate 10 times that of ageing, after only four months of treatment⁵⁷. Others have also demonstrated changes on adult brains⁵⁸⁵⁹. There are no reports available on the effect of cross sex hormones on the developing brains of children and adolescents.

Administration of cross sex hormones has a suppressing effect on the natural gonads. Just how long it takes for the suppression to become permanent is unknown, but chemical castration is the end result. Proponents of childhood transgendering confirm this by suggesting eggs of females and biopsies of testicles might be taken before undertaking cross sex hormones in order to procure artificial conceptions in the future.

International guidelines suggest cross sex hormones not be given to adolescents under the age of 16. The Guidelines of the Royal Melbourne Children's Hospital have no age limit.

The Minister is requested to investigate the experimental administration of cross sex hormones on children and adolescents. Why are they able to be given contrary to international suggestion, and why are they given without full explanation of possible effect. The Minister should be aware the hormones had a demonstrable effect on adult brains after only 4

months of treatment. Children are likely to be receiving them for life.

Surgery is the next step in the medical programme of transgendering therapy.

International advice is that irreversible therapy should not be undertaken under the age of 18 years but, already in Australia, at least five natal girls have had bilateral mastectomies under that age. Two were aged fifteen one sixteen and two seventeen.

Proponents of transitioning argue the procedures are justified by the claim they are 'reversible'.

The Minister for Health is requested to dissociate from the sophistry that a female breast is merely a cosmetic appendage replaceable by silicon sacs.

Lest it be concluded I am a lone physician emphasising the lack of scientific bases for declarations of the experimental nature of medical intervention in childhood gender dysphoria, I refer to an article published in a

recent, prestigious journal, 'Paediatrics', by clinicians at the Royal Hospital for Children in Melbourne: a hospital noted for its leadership in promotion of the medical pathway for dysphoria.

The authors conducted a literature search on hormonal treatment of young people from 1946 to 2017, finding only 13 publications of relevance. They declared this scarcity was 'problematic', concluding the studies 'neglected several key outcomes' including 'psychological symptoms', the impact on fertility, the possibility of side effects on growth and cardiovascular function, and the manner of withdrawal from treatment, especially with regret⁶⁰.

The Melbourne authors are not the only ones to complain of lack of data. Others have complained of 'limited long term data'⁶¹, 'small numbers from one clinic'⁶², 'reliance on clinical impressions'⁶³, "lack of randomized controlled trials...thus best evidence available is characterised as 'expert opinion' which is influenced by prevailing cultural

belief systems and theoretical orientations'⁶⁴, and 'lack of consensus regarding appropriate intervention or even appropriate goals of intervention'⁶⁵.

In a Special Review in the Journal of Homosexuality concerning "The treatment of gender dysphoric/gender variant children and adolescents" David Schwartz (2012)⁶⁶ 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”.

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 ...⁶⁷.

The Minister is requested to review the lack of evidence for positive effect of the massive intervention into the minds and bodies of children. Lack of evidence for effect and denial of side effects renders the medical pathway of treatment of childhood gender dysphoria experimental.

I address my requests to the Federal and States Ministers for Health, and to governance of Children's Hospital because I am aware of no national precedent for such widespread unsubstantiated medical practice. In my opinion an ideology, gender fluidity, has been imposed on a section of the medical and broader community with the full force of manipulated law. Such experimental practice confronts all conventions of human rights for children that began with the Nuremberg Trials after World War 2.

I am aware a request for consideration has been delegated by the Federal Minister to the Royal Australasian College of Physicians (RACP) to which I belong, and there are benefits for at least, the acknowledgement of the need for investigation. However, the RACP is ill fitted, in my opinion, for an investigation of such gravity. It is after all, an organisation primarily dedicated to the education of physicians. Interpretation of ethical issues that transcend the activities of physicians and involve

participatory social workers, psychologists, psychiatrists and surgeons are beyond its purview.

The issue really belongs to Ministries of Health and governance bodies of children's hospitals. After all, the latter provided ethical clearance for the procedures, and continue to support the practice with administrative staff, building space and the salaries of the participants.

I fully appreciate the sensitivity of the matter. I am aware of the pain and suffering of patients, and the commitment of staff of children's hospitals to the 'best interests' of children. I have no criticism of the commitment of staff in children's clinics. I have written a number of articles in various publications, especially Quadrant Magazine to which readers may go for further information, including references. This far, no objections have been raised to my interpretation of scientific references.

Finally, the Minister is referred to the unfortunate case of Finch vs Southern Health in which a young

man who underwent sex change surgery in Monash Medical Centre. He subsequently alleged an underlying psychological condition had not been diagnosed by the hospital and that he had been inappropriately treated.⁶⁸ The Melbourne Age reported 'AUSTRALIA'S only sex-change clinic has been temporarily shut down and its controversial director forced to quit amid growing claims that patients with psychiatric problems have been wrongly diagnosed as transsexuals and encouraged to have radical gender reassignment surgery.

The Sunday Age has been told at least eight former patients of the Gender Dysphoria Clinic at Melbourne's Monash Medical Centre believe they may have been misdiagnosed. Some have tried to commit suicide while struggling to live as the opposite sex after the irreversible operations'⁶⁹.

The Minister is requested to contemplate the number of children likely to allege their psychological problems had been minimised and their lives irretrievably altered after entering the

medical pathway for treatment of the childhood confusion.

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- 1 Kosky RJ Gender-disordered children: does inpatient treatment help? MJA.1987;146; June 1:565-569.
- 2 Childhood cancer. The facts. <https://ccia.org.au/home/our-purpose/childhood-cancer-information/>
- 3 Trans Pathways. <https://www.telethonkids.org.au/globalassets/media/documents/brain--behaviour/trans-pathwayreport-web2.pdf>
- 4 Penny Mordaunt. <https://www.telegraph.co.uk/politics/2018/09/16/minister-orders-inquiry-4000-per-cent-rise-children-wanting/>
- 5 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](https://doi.org/10.1097/chi.0b013e3181373848)
- 6 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](https://doi.org/10.1007/s10802-013-9804-2)
- 7 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](https://doi.org/10.1542/peds.2011-0907)
- 8 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](https://doi.org/10.1542/peds.2017-3845)

- 9 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](https://doi.org/10.5694/mja12.10222)
- 10 Kaltiala-Heino R, Sumia M, Tyolajarvi 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](https://doi.org/10.1186/s13034-015-0042-y)
- 11 De Vries AL, Noens IL, Cohen-Kettenis PT et al. Autism spectrum disorders in gender dysphoric children and adolescents. *J Autism Dev Disord.* 2010;40(8):930-936. Doi [10.1007/s10803-010-0935-9](https://doi.org/10.1007/s10803-010-0935-9)
- 12 Rekers GA, Kilgus M, Rosen A. Long term effects of treatment for gender identity disorder of childhood. *Journal of psychology and amp: Human Sexuality.* 1991;3(2):121-153.
- 13 Pauly I. Female transsexualism: Part 2. *Archives of sexual behaviour.* 1974. 3(6):509-524
- 14 Stoller RJ. Boyhood gender aberrations: treatment issues.
- 15 Zuger B. Effeminate behaviour present in boys from childhood: ten additional years of follow up. *Comprehensive Psychiatry.* 1978;19(4) (July-August): 363-369.
- 16 Lothstein L, The adolescent gender dysphoric patient: an approach to treatment and management. *Journal of Pediatric Psychology.* 1980; 3(1):93-109..
- 17 Zucker KJ, Wood H, Singh MA, Bradley SJ. A Developmental, biopsychosocial model for the treatment of
- 18 Zucker KJ, Wood H, Singh MA, Bradley SJ. A Developmental, biopsychosocial model for the treatment of children with gender identity disorder. *J Homosexual.* 2012. 59 (3): 369-397.
- 19 DSM-5. 2013, Op. cit., pg. 452.
- 20 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](https://doi.org/10.1016/j.jaac.2016.04.001)
- 21 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](https://doi.org/10.1111/j.1468-2850.1996.tb00056).
- 22 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](https://doi.org/10.2105/AJPH.88.2.262)
- 23 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](https://doi.org/10.1177/1359104514558431)

- 24 Haas A et al, Suicide and suicide risk in lesbian, gay, bisexual and transgender populations: review and recommendations. *J Homosex.* 2011;58 (1): 10-51. doi: [10.1080/00918369.2011.534038](https://doi.org/10.1080/00918369.2011.534038).
- 25 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](https://doi.org/10.1016/j.rasd.2012.07.009)
- 26 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](https://doi.org/10.1177/1359104514558431)
- 27 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](https://doi.org/10.1111/j.1365-2265.2009.03625).
- 28 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.
- 29 Dhejane 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](https://doi.org/10.1371/journal.pone.0016885)
- 30 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](https://doi.org/10.1016/j.neurenf.2008.06.003)
- 31 Zucker KJ, Lambert S, Bradley SJ et al. Risk factors for general behavior problems in boys with gender identity disorder. Presented at 19th Symposium of the Harry Benjamin International Gender Dysphoria Association. 2005. Bologna Italy.
- 32 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](https://doi.org/10.1097/00004583-199103000-00022)
- 33 Littman L. Rapid onset gender dysphoria in adolescents and young adults: A study of parental reports. *PLoS ONE* 13(8):e0202330. <https://doi.org/10.1371/journal.pone.0202330>.
- 34 Ms Hennessy. Health Complaints Bill Second Reading. Parliament of Victoria. Hansard. Feb 10, 2016.
- 35 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](https://doi.org/10.1016/j.psyneuen.2013.03.009)
- 36 Nuruddin S, Wojnusz 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](https://doi.org/10.1016/j.bbr.2012.12.027)
- 37 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](https://doi.org/10.1016/j.psyneuen.2013.09.011)

- 38 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](https://doi.org/10.1016/j.psyneuen.2012.03.020)
- 39 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](https://doi.org/10.1016/j.psyneuen.2016.10.016)
- 40 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](https://doi.org/10.1016/j.psyneuen.2016.11.029)
- 41 Wojnusz S, Vogele 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](https://doi.org/10.1016/j.yhbeh.2010.09.010)
- 42 Grigorova 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](https://doi.org/10.1016/j.psyneuen.2006.05.004)
- 43 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](https://doi.org/10.1016/j.psyneuen.2007.09.009)
- 44 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](https://doi.org/10.1002/cncr.23658)
- 45 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.
- 46 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](https://doi.org/10.1083/jcb.200707043)
- 47 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](https://doi.org/10.1007/s11064-016-1983-0)
- 48 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](https://doi.org/10.1530/eje.1.02248)
- 49 <https://www.ncbi.nlm.nih.gov/pubmed/11648609>
- 50 Caraty A, Skinner DC. Gonadotrophin-releasing hormone in third ventricular cerebrospinal fluid: endogenous distribution and exogenous uptake.

- 51 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
- 52 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](https://doi.org/10.1126/science.181.4095.177)
- 53 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](https://doi.org/10.1006/hbeh.1997.1399)
- 54 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](https://doi.org/10.1006/hbeh.2000.1575)
- 55 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](https://doi.org/10.1016/0361-9230(79)90282-X)
- 56 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](https://doi.org/10.1016/j.yhbeh.2005.12.005)
- 57 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](https://doi.org/10.1530/eje.1.02248)
- 58 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>
- 59 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](https://doi.org/10.1016/j.psyneuen.2011.12.019)
- 60 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](https://doi.org/10.1542/peds.2017-3742)
- 61 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](https://doi.org/10.1111/jsm.13034)
- 62 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](https://doi.org/10.1542/peds.2013-2958)
- 63 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](https://doi.org/10.1080/00918369.2012.653314)
- 64 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](https://doi.org/10.1111/jsm.12387)

65 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](https://doi.org/10.1097/MED.0b013e32835c711e)

66 Schwarz, op cit

67 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.000000000000203](https://doi.org/10.1097/YCO.000000000000203)

68 *Finch v Southern Health & Ors* [2004] VCC 44 (12 November 2004)

69 Stark J. *Melbourne Age* May 31, 2009