

# *mythbusters* treatment of Gender Dysphoria in children

Julie Maxwell explores the evidence



**T**ransgender issues are a hot topic. Management of children and adolescents is generating much disagreement with emotive arguments for and against medical treatment for Gender Dysphoria. So, let's look at the available evidence to help guide us in considering how best to help children struggling with gender identity issues.

## definition and referral

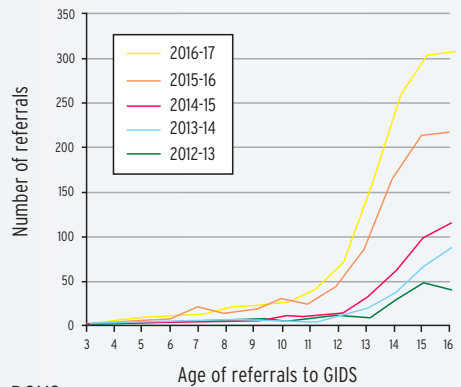
Gender Dysphoria occurs when a person experiences discomfort or distress because of a mismatch between their biological sex and gender identity.

There has been a huge rise in the number of children and adolescents presenting with gender identity issues. The number of children being referred to the Gender Identity Development Service (GIDS) at the Tavistock Centre has risen exponentially since it opened in 2009. There is a significant increase in the number of teenage biological females presenting with gender identity issues.

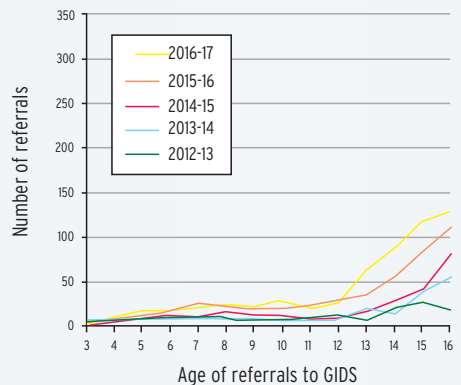
Transgender trend 2012-2017. Tavistock and Portman NHS Foundation Trust. (Obtained through the Freedom of Information Act (2000)) [bit.ly/2TTfbLn](http://bit.ly/2TTfbLn)

## Annual Child Referrals to GIDS since 2012

### GIRLS



### BOYS





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Between 73% and 88% of children who presented before puberty, whether they had socially transitioned or not, did not continue with their intention of changing their gender once puberty started.<sup>1</sup>

However, many children (and their parents) believe that medical (and potentially surgical) treatment is the only way to resolve feelings of Gender Dysphoria, and therefore are extremely reluctant to engage with psychosocial assessment. This view is often fuelled by the belief that not going down the route of gender transition will result in self-harm and suicide. Conversely, unpublished data from the GIDS study on children being treated medically suggests an increase in suicidal ideation after one year.<sup>2</sup>

## how good is the data?

A recent meta-analysis by Carl Henegan, Professor of Evidence Based Medicine at the University of Oxford,<sup>3</sup> examined all published trials to date, which enrolled a cumulative total of 1,132 young people. Evidence was limited by small sample sizes and retrospective methods. Most studies lacked control groups and many outcomes were subjective and lacked blinding. One study used a measure of psychosocial well-being that had been shown to improve with age without intervention; adolescence is a turbulent time (even without Gender Dysphoria!<sup>4</sup>) that teenagers emerge from.

With follow-up rates as low as 34% in some studies, how can we know what complications and harms are being missed? The flagship service in the UK at the Tavistock Centre does not follow-up beyond 18 years of age, severely limiting their ability to identify harms.

## puberty blockers

The first step in medical treatment is puberty

suppression with a gonadotrophin-releasing hormone analogue (GnRHa), which is begun when a child reaches Tanner Stage 2 of puberty. GnRHa acts on GnRH receptors to suppress gonadotropin release. It can lower sex hormone levels by 95% in both sexes. In females, GnRHa reduces the secretion of LH and FSH; in males, it shuts down gonadal testosterone production. GnRHa is often referred to as a puberty blocker. These are being used in the context of profound scientific ignorance as previous studies have only been done on their use in precocious puberty.<sup>5</sup> They have not been licensed for Gender Dysphoria by their manufacturers nor approved by NICE.

Stopping LH and FSH and testosterone secretion suspends maturation of foetal and neonatal germ cells leading to a loss of fertility. Since it is extremely rare for children with Gender Dysphoria to discontinue therapy, there is no evidence that normal puberty would resume. There are questions around the potential impact on growth and bone density. One study showed that bone mineral density scores fell during puberty suppression with GnRHa for trans females, and did not improve with oestrogen treatment.<sup>6</sup>

GnRHa treatment was introduced with the aim of reducing the distress of experiencing puberty, to enable the child to explore emotional and psychological issues surrounding Gender Dysphoria. However, virtually all the children who start on puberty blockers eventually take cross-sex hormones, suggesting that changing their minds is rare once natural puberty is interrupted.

Puberty is a time not only of bodily changes, but also hormone-mediated structural changes in the brain. Neuroimaging studies on hormone treatments have shown effects on brain structure such as ventricular volume and thickness, hypothalamic neuroplasticity, and functional

connectivity.<sup>7</sup> The concern, therefore, is that a young person on puberty blockers is left in a developmental limbo and that some young people with Gender Dysphoria will be prevented from finally becoming comfortable with their biological sex by their use.

### the Tavistock experiment

The only clinic that prescribes for children in the UK conducted its own trial from 2010. Their website stated that GnRHa treatment 'is deemed reversible'. But the research protocol gained under the Freedom of Information Act (2000) suggested otherwise: 'It is not clear what the long term effects of early suppression may be on bone development, height, sex organ development, and body shape and their reversibility if treatment is stopped during pubertal development.'<sup>8</sup> A paediatrician on the study team, Russell Viner, frankly acknowledged the risks: 'If you suppress puberty for three years the bones do not get any stronger at a time when they should be, and we really don't know what suppressing puberty does to your brain development. We are dealing with unknowns.'<sup>9</sup>

At least 1,000 children, including 230 under 14, have been prescribed puberty blockers at The Tavistock. Given that this is the only cohort of such patients in the UK, after ten years it seems a missed opportunity that there has not been full disclosure of the data in peer-reviewed journals. From the limited data released, the single paper to date from this cohort has not been encouraging despite a misleading abstract.<sup>10</sup> 'There was no statistically significant difference in psychosocial functioning between the group given blockers and the group given only psychological support. In addition, there is unpublished evidence that after a year on GnRHa, children reported greater self-harm, and that girls experienced more behavioural and emotional problems and expressed greater dissatisfaction with their body - so puberty blockers exacerbated Gender Dysphoria.'<sup>11</sup>

### cross-sex or Gender Affirming Hormones (GAH)

Now more commonly referred to as gender-affirming hormones, oestrogens and testosterone will induce masculine or feminine physical characteristics. They often need to be supplemented by other drugs and there are potential health risks of treatment with these hormones.

On the NHS, this treatment can be given to those over 16 years old when criteria are met, and it is deemed that they are capable of giving informed consent<sup>12</sup> to this irreversible, life-changing treatment. It has been reported that some children have been able to access cross-sex hormones at a much younger age privately or via the internet.

Prof Heneghan, in his review of the evidence states: 'Treatments for under 18 gender dysphoric children and adolescents remain largely experimental. There are a large number of unanswered questions that include the age at start, reversibility; adverse events, long term effects on mental health, quality of life, bone mineral density, osteoporosis in later life and cognition. We are also ignorant of the long-term safety profiles of the different GAH regimens. The current evidence base does not support informed decision-making and safe practice.'<sup>13</sup>

Giving cross-sex hormones will of course only influence secondary sex characteristics (those that appear during puberty) and will not alter primary sex characteristics (those present at birth).

### gender reassignment surgery

This is available on the NHS for those over 18 only and involves varying degrees of surgery.

While surgery may make a person appear cosmetically to be the opposite sex, their genetic make-up and other genetically determined physical and mental characteristics does not change. It is simply not possible to change sex, only to look like the opposite sex.

## de-transitioners



There are increasing reports of those who have embarked on medical and/or surgical treatment realising that transitioning has not alleviated their mental distress. There are stories of adults and adolescents requesting to de-transition and return to live in line with their biological sex. One of the best known is Walt Heyer (pictured)<sup>14</sup> He says: 'At first I was giddy for the fresh start. But hormones and sex change surgery couldn't solve the underlying issues driving my Gender Dysphoria. I de-transitioned more than 25 years ago. I learned the truth: Hormones and surgery may alter your appearances, but nothing changes the immutable fact of your sex.'

## mental health problems

Gender identity issues rarely present on their own, and most children and young people will also suffer comorbid mental health issues. A disproportionate number of children on the autistic spectrum identify as transgender.<sup>15</sup>

Adolescents who present with Gender Dysphoria, well after the onset of puberty are more likely to also have significant psychopathology and broader identity confusion than gender identity issues alone.<sup>16</sup>

## conclusion

The subject of gender identity and transgender is extremely complex and evokes much concern and disagreement. Young people suffering from these difficulties need compassion and help. But at present, these children are being experimented on without enough evidence of the long-term physical, emotional and psychological implications of medical treatments. Healthcare professionals are frequently urged to practise evidence-based medicine and to weigh the risks against the benefit of treatments; current evidence suggests this is not happening in the treatment of children with gender identity issues. ■

## summary

Risks of puberty suppression and transitioning treatments in adolescents:

- Medical treatments compound 'developmental limbo'
- GnRHa impairs bone development and fertility, perhaps irreversibly, before adulthood
- Cross-sex hormones further interfere with brain maturation and cognitive development
- Cross-sex hormones can cause thromboembolism, polycythaemia and raise blood pressure
- Surgery cannot be reversed to the natural state

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