



Australian Standards of Care and Treatment Guidelines

For trans and gender diverse
children and adolescents

Version 1.4

Authors

Associate Professor Michelle Telfer, Paediatrician, The Royal Children’s Hospital Melbourne, Murdoch Children’s Research Institute and The University of Melbourne

Dr Michelle Tollit, Research Officer, The Royal Children’s Hospital Melbourne, Murdoch Children’s Research Institute and The University of Melbourne

Dr Carmen Pace, Clinical Psychologist, The Royal Children’s Hospital Melbourne, Murdoch Children’s Research Institute

Associate Professor Ken Pang, Paediatrician, The Royal Children’s Hospital Melbourne, Murdoch Children’s Research Institute, The University of Melbourne, The Walter and Eliza Hall Institute of Medical Research

Suggested citation

Telfer, M.M., Tollit, M.A., Pace, C.C., & Pang, K.C. *Australian Standards of Care and Treatment Guidelines for Trans and Gender Diverse Children and Adolescents* Version 1.4. Melbourne: The Royal Children’s Hospital; 2023

Contact

The Royal Children’s Hospital Gender Service
50 Flemington Road, Parkville Victoria 3052 Australia
Telephone: +61 3 9345 5890
Facsimile: + 61 3 9345 6343
Email: genderservice@rch.org.au

Acknowledgements

We would firstly like to thank our colleagues within The Royal Children’s Hospital Gender Service team who have made a significant contribution to this document including Donna Eade, Dr Charlotte Elder, Dr Debi Feldman, Alessandra Giannini, Professor Lynn Gillam, Professor Sonia Grover, Dr Christopher Haslett, Shantelle Hendy, Dr Porpavai Kasiannan, Dr Renata Kukuruzovic, Dr Tiba Maloof, Dr Michele O’Connell, Associate Professor Campbell Paul and Dr Zeffie Poulakis.

We would like to thank the Executive Committee of the Australian Professional Association for Trans Health (AusPATH) and clinicians across Australia and New Zealand who provided consultation and feedback on the content of the document. In particular, we would like to acknowledge Dr Fintan Harte, Mo Harte, Mr Andrew Ives, Dr Rachel Johnson, Dr Stephen Koder, Dr Ruth McNair, Dr Elizabeth Riley, Dr Jaimie Veale and Professor Sam Winter. We would also like to thank our colleagues in other specialist gender services across Australia who have contributed with their expertise and support. This includes Dr Uma Ganti, Dr Ashleigh Lin, Simone Mahfouda, Dr Julia Moore, Elizabeth Saunders, Clinical Associate Professor Aris Siafarikas, Penelope Strauss, Catherine Thomas and Hans-willem van Hall from the Gender Diversity Service, Perth Children’s Hospital, Dr Jemma Anderson, Dr Helen Chesterman and Dr Georgie Swift from The Women’s and Children’s Hospital Adelaide, Dr Anagha Jayakar and Dr Jason Westwater from The Royal Hobart Hospital and Professor Jennifer Batch, Olivia Donaghy and Dr Stephen Stathis from Lady Cilento Children’s Hospital Gender Clinic & Statewide Service, Children’s Health Queensland.

Thank you to the significant contribution made from the trans and gender diverse community including Brenda Appleton and Transgender Victoria, Transcend, Parents of Gender Diverse Children, The Royal Children’s Hospital Gender Service Consumer Advisory Group, Victorian AIDS Council and The Victorian Government Trans and Gender Diverse Expert Advisory Group.

We would also like to thank the AusPATH ASOCTG GP Working Group: Dr Nic Brayshaw, Dr Adam Brownhill, Dr Michelle Dutton, Dr Portia Predny, Dr Clara Soo, Dr Pauli Cundill, Associate Professor Katie Wynne, and Adjunct Professor Darren Russell, supported by the AusPATH Board, for their contributions to the updated GP section in Version 1.4.

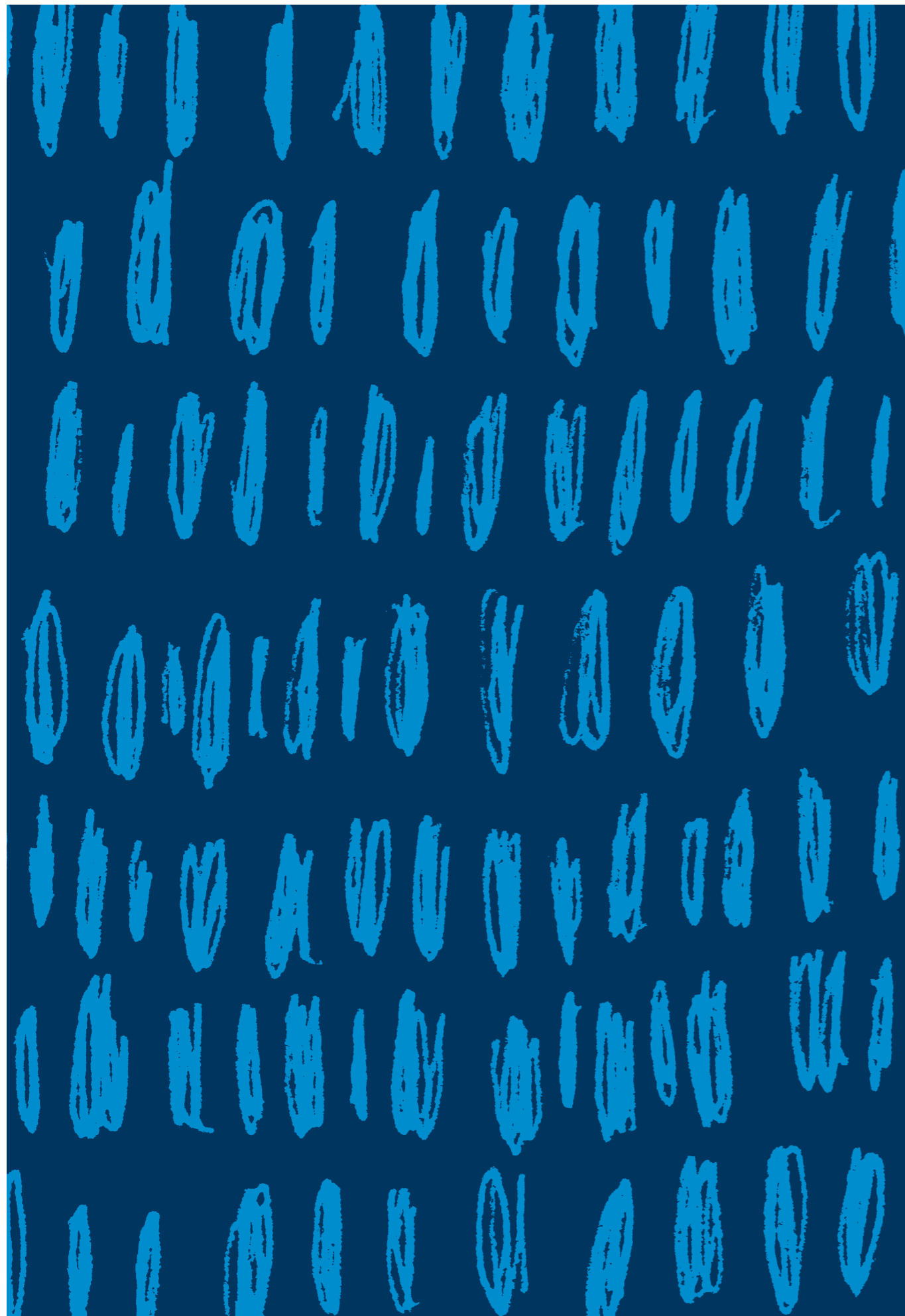


Endorsement by the Australian Professional Association for Trans Health (AusPATH)

The Board of Directors of the Australian Professional Association for Trans Health (formally ANZPATH) has endorsed these guidelines for use in the care of trans and gender diverse children and adolescents across the Commonwealth of Australia.

Table of contents

Introduction	2
Terminology	4
General principles for supporting trans and gender diverse children and adolescents	5
Individualise care	5
Use respectful and affirming language	5
Avoid causing harm	5
Consider sociocultural factors	6
Consider legal requirements	7
Supporting trans and gender diverse children	9
Psychological support	9
Social transition	9
The roles of the clinician in the care of the pre-pubertal child	10
Support and treatment for trans and gender diverse adolescents	11
Psychological support	11
Voice and communication training	14
Social transition	14
Fertility counselling and preservation procedures	14
Puberty suppression	15
Gender affirming hormone treatment using oestrogen and testosterone	16
The roles of the mental health professional	18
The roles of the paediatrician, adolescent physician or endocrinologist	19
The roles of the gynaecologist and/or andrologist	20
The roles of the nurse	20
The roles of the speech pathologist	21
The roles of the general practitioner	21
The roles of the bioethicist and the legal practitioner	22
Commencement of puberty suppression using gonadotrophin releasing hormone analogues (GnRHa)	23
Commencement of gender affirming hormone treatment using oestrogen or testosterone	24
Surgical interventions for trans and gender diverse adolescents	25
Transition of care to adult health providers	26
Appendices	27
Appendix 1: Recommended medical examination and investigations for puberty suppression using gonadotrophin releasing hormone analogues (GnRHa)	27
Appendix 2: Recommended medical examination and investigations prior to commencement and throughout treatment with oestrogen or testosterone:	28
Appendix 3: Induction of feminising hormones for adolescents: treatment recommendations	29
Appendix 4: Induction of masculinising hormones for adolescents: treatment recommendations	30
References	31



Introduction

The Australian Standards of Care and Treatment Guidelines (ASOCTG) aim to maximise quality care provision to trans and gender diverse children and adolescents across Australia, whilst recognising the unique circumstances of providing such care to this population. Recommendations are made based on available empirical evidence and clinician consensus, and have been developed in consultation with professionals working with the trans and gender diverse population across Australia and New Zealand from multiple disciplines, trans and gender diverse support organisations, as well as trans children and adolescents and their families. They have been endorsed by the Australian Professional Association for Trans Health (AusPATH), the peak organisation in the region actively promoting communication and collaboration amongst professionals of all disciplines involved in the healthcare, rights and wellbeing of people who identify as trans or gender diverse.

There are potential challenges in accessing trans and gender diverse healthcare for the Australian population. This is especially the case for children and adolescents who are vulnerable due to cultural and linguistic diversity (including Aboriginal and Torres Strait Islander populations), out of home care, intellectual disability, or detention within the youth justice system. Australia's vast geographical distances create further barriers to treatment access for those living in rural and regional locations.

With increasing visibility and social acceptance of gender diversity in Australia, more children and adolescents are presenting to community and specialist healthcare services requesting support, advice and gender affirming psychological and medical treatment.¹ A large population-based study undertaken in New Zealand in 2012 estimated that approximately 1.2% of adolescents identify as transgender² and it is therefore likely that referrals to healthcare professionals will continue to rise in the foreseeable future.

Being trans or gender diverse is now largely viewed as part of the natural spectrum of human diversity. It is, however, frequently accompanied by significant gender dysphoria (GD), which is characterised by the distress that arises from incongruence between a person's gender identity and their sex assigned at birth. It is well recognised that trans and gender diverse individuals are at increased risk of harm because of discrimination, social exclusion, bullying, physical assault and even homicide.³⁻⁶ Serious psychiatric morbidity is seen in children and adolescents. A study of the mental health of trans young people living in Australia found very high rates of ever being diagnosed with depression (74.6%), anxiety (72.2%), post-traumatic stress disorder (25.1%), a personality disorder (20.1%), psychosis (16.2%) or an eating disorder (22.7%). Furthermore 79.7% reported ever self-harming and 48.1% ever attempting suicide.⁷

Increasing evidence demonstrates that with supportive, gender affirming care⁸ during childhood and adolescence, harms can be ameliorated and mental health and wellbeing outcomes can be significantly improved.⁹⁻¹¹

As mentioned above, the recommendations made in this document are based primarily on clinician consensus, along with previously published standards of care from the World Professional Association for Transgender Health (WPATH),¹² treatment guidelines and position statements,¹³⁻¹⁹ and findings from a limited number of non-randomised clinical studies and observational studies.^{8-11,20-26} It is clear that further research is warranted across all domains of care for trans and gender diverse children and adolescents, the findings of which are likely to influence future recommendations.



RCH Gender Service Ambassador, Georgie Stone

Terminology

Terminology used to describe trans children and adolescents is rapidly evolving. Below are some current terms that are frequently used. However, many more terms exist and it is important to ensure that the child or adolescent is given the opportunity to express their individual preferences for use of terminology to enable respectful communication.

Gender identity

A person's innermost concept of self as male, female, a blend of both or neither. One's gender identity can be the same or different from their sex assigned at birth.

Gender expression

The external presentation of one's gender, as expressed through one's name, clothing, behaviour, hairstyle or voice, and which may or may not conform to socially defined behaviours and characteristics typically associated with being either masculine or feminine.

Gender diverse

A term to describe people who do not conform to their society or culture's expectations for males and females. Being transgender is one way of being gender diverse, but not all gender diverse people are transgender.

Assigned male at birth

A person who was thought to be male when born and initially raised as a boy.

Assigned female at birth

A person who was thought to be female when born and initially raised as a girl.

Trans or transgender

A term for someone whose gender identity is not congruent with their sex assigned at birth.

Cisgender

A term for someone whose gender identity aligns with their sex assigned at birth.

Trans boy/male/man

A term to describe someone who was assigned female at birth who identifies as a boy/male/man.

Trans girl/female/woman

A term to describe someone who was assigned male at birth who identifies as a girl/female/woman.

Non-binary

A term to describe someone who doesn't identify exclusively as male or female.

Gender fluid

A person whose gender identity varies over time.

Agender

A term to describe someone who does not identify with any gender.

Brotherboy and Sistergirl

Aboriginal and Torres Strait Islander people may use these terms in a number of different contexts, but they are often used to refer to trans and gender diverse people.

Brotherboy typically refers to masculine spirited people who were assigned female at birth. Sistergirl typically refers to feminine spirited people who were assigned male at birth.

Gender dysphoria

A term that describes the distress experienced by a person due to incongruence between their gender identity and their sex assigned at birth.

Social transition

The process by which a person changes their gender expression to better match their gender identity.

Medical transition

The process by which a person changes their physical sex characteristics via hormonal intervention and/or surgery to more closely align with their gender identity.

General principles for supporting trans and gender diverse children and adolescents^a

Individualise care

Every child or adolescent who presents with concerns regarding their gender will have a unique clinical presentation and their own individual needs. The options for intervention that are appropriate for one person might not be helpful for another.¹² For example, although many trans and gender diverse individuals may benefit from both hormonal intervention and surgery, some may choose only one of these options, and others may decide to have neither.¹⁵ The importance of tailoring interventions is especially true for those expressing a non-binary gender identity,²⁸ but equally applies to those who present with a trans male or trans female identity. Consistent with the above, decision making should be driven by the child or adolescent wherever possible, and this applies to options regarding not only medical intervention but also social transition.

Use respectful and affirming language

Understanding and using a person's preferred name and pronouns is vital to the provision of affirming and respectful care of trans children and adolescents.^{19,29} Providing an environment that demonstrates inclusiveness and respect for diversity is essential, with Australian research reporting that healthcare environments experienced as discriminatory for trans and gender diverse people are correlated with poorer mental health outcomes.^{4,30} Some children or adolescents may request use of a preferred name or pronoun only in certain circumstances, such as when their parents are, or are not, present in the room. This is important to respect and enact to enable optimal patient-clinician engagement, and ensure confidentiality and patient safety.

Avoid causing harm

Avoiding harm is an important ethical consideration for health professionals when considering different options for medical and surgical intervention. Withholding of gender affirming treatment is not considered a neutral option, and may exacerbate distress in a number of ways including increasing depression, anxiety and suicidality, social withdrawal, as well as possibly increasing chances of young people illegally accessing medications.³¹

In the past, psychological practices attempting to change a person's gender identity to be more aligned with their sex assigned at birth were used.³² Such practices, typically known as conversion or reparative therapies, lack efficacy,³³ are considered unethical¹² and may cause lasting damage to a child or adolescent's social and emotional health and wellbeing.^{18,33,34}

^aAdapted from: Abnormal Psychology: Leading Researcher Perspectives, 4e, 2017. Edited by Elizabeth Rieger. Reproduced with permission of McGraw-Hill Education (Australia) Pty Ltd²⁷



RCH patients, Gresh and Evie with RCH Gender Service Clinical Nurse Consultant

Consider sociocultural factors

Fear of experiencing stigma and discrimination by health professionals can be a barrier for trans and gender diverse individuals in accessing general medical healthcare as well as treatment directly related to gender dysphoria.³⁵ Indigenous trans and gender diverse Australians experience problems of racism and gender related discrimination in the broader Australian context as well as transphobia within traditional community groups, which adds an additional barrier to treatment access.³⁶ It is also important to recognise difficulties that may exist for children or adolescents and their families who belong to particular religious or cultural groups. In these circumstances, beliefs and values may be at odds with a gender affirming approach and may prevent them from accessing support within their local community.



Understanding and using a person's preferred name and pronouns is vital to the provision of affirming and respectful care of trans children and adolescents.



Where there is a dispute as to either competence, diagnosis or treatment, court authorisation is required.

Consider legal requirements

Australian trans and gender diverse children and adolescents experience barriers to obtaining identity documentation that accurately reflects their gender. Federal Government agencies providing identity documentation such as passports and Medicare cards allow a young person to change their gender marker to that which is preferred. Identity documents such as birth certificates, however, are governed under State based jurisdictions which vary across Australia. In the jurisdictions where birth certificate laws require an individual to undergo gender affirming surgical procedures prior to a change in one's gender marker, children and adolescents are prevented from doing so. This has implications for young people's rights to privacy and confidentiality when enrolling in school or applying for work. Conflicting gender markers across multiple identity documents is also a complicating factor which further disadvantages these young people.

Historically, court processes have played a significant role in determining access to hormone treatment for trans adolescents in Australia. Current law requires the adolescent's clinicians to ascertain whether or not an adolescent's parents or legal guardians consent to the proposed treatment before an adolescent can access either pubertal suppression or hormone treatment. Where there is no dispute between the parents, the adolescent or the medical practitioner, the clinician may proceed on the basis of the adolescent's consent, where competent to consent, or parental consent, where the adolescent is not competent to consent. Where there is a dispute as to either competence, diagnosis or treatment, court authorisation prior to commencement of treatment is required.

RCH patient, Evie



Supporting trans and gender diverse children

Some trans and gender diverse individuals express gender diverse behaviour from a very young age, whilst others do not express a trans or gender diverse identity until adolescence or adulthood. The clinical needs of these groups are inherently different and, consequently, we provide separate guidelines for trans and gender diverse children (i.e. those who are in a pre-pubertal stage of development) and adolescents (i.e. those in whom puberty has commenced but are not yet legally adults).

Psychological support

Supporting trans and gender diverse children requires a developmentally appropriate and gender affirming approach. A non-judgemental, safe and supportive environment for the child and their parents or caregivers allows optimal outcomes from care provision.

There is growing evidence to suggest that for children, family support is associated with more optimal mental health outcomes.¹¹ Whilst many trans and gender diverse children and their families will benefit from some form of psychological support, the level of support required will depend on the clinical and psychosocial circumstances. Trans or gender diverse children with good health and wellbeing who are supported and affirmed by their family, community, and educational environments may not require any additional psychological support beyond occasional and intermittent contact with relevant professionals in the child's life, such as the family's general practitioner or school supports.

Others may benefit from a skilled clinician working together with family members to help develop a common understanding of the child's experience. Developing a shared understanding allows the child to feel genuinely supported and affirmed in who they are and for the family to be able to make considered and informed treatment decisions in the future, therefore ensuring optimal care.

Autism Spectrum Disorder (ASD) has been demonstrated to be associated with gender diversity,³⁷⁻³⁹ and many children presenting to specialist gender services have co-existing ASD.⁴⁰ Clinical guidelines for the management of co-existing ASD and gender dysphoria have recently been developed.¹³ For some children, a formal diagnosis of ASD can be helpful for their family and teachers in understanding their social interactions and behaviour and to find strategies to manage the difficulties they encounter.

When a child's medical, psychological and/or social circumstances are complicated by co-existing mental health difficulties, trauma, abuse, significantly impaired family functioning, or learning or behavioural difficulties,

a more intensive approach with input from a mental health clinician will be required. This form of psychological support should be undertaken by a skilled mental health clinician with expertise in child cognitive and emotional development as well as child psychopathology, and experience in working with children with gender diversity and gender dysphoria. This support requires an understanding of the child and their family through a comprehensive exploration of the child's developmental history, gender identity, emotional functioning, intellectual and educational functioning, peer and other social relationships, family functioning as well as immediate and extended family support, in a safe and therapeutic environment.

Social transition

Social transition involves outwardly expressing oneself in a gender role that is consistent with one's gender identity. This may include changing one's preferred name and pronouns, hairstyle, or wearing clothing that is stereotypically associated with the gender one identifies with. Social transition should be led by the child and does not have to take an all or nothing approach. It may occur broadly across different social contexts such as within the home and school environments, or be kept to selective environments should the child wish to do so. Provision of education about social transition to the child's kindergarten or school is often necessary to support a child who is socially transitioning to help facilitate the transition and minimise negative experiences such as bullying or discrimination.⁴¹ Children who are engaged in sporting or other activities may also need assistance to allow transition to occur without exclusion or withdrawal from these groups. Social transition can reduce a child's distress and improve their emotional functioning.^{11,24} Evidence suggests that trans children who have socially transitioned demonstrate rates of depression, anxiety and self-worth comparable to their cisgender peers.^{11,24} The number of children in Australia who later socially transition back to their gender assigned at birth is not known, but anecdotally appears to be low and no current evidence of harm in doing so exists.



The roles of the clinician involved in the care of the pre-pubertal child expressing gender diverse behaviour may include:

1. Supportive exploration of the child's gender identity over time.
2. Assessment of family support, dynamics and functioning. Provision of parent support and family work over time may be necessary to enable a safe and supportive home environment for the child. For children in out of home care, provision of support for carers and advocacy to ensure gender affirming environments may be required.
3. Assessment of developmental and family history, cognitive, emotional, educational and social functioning. Advocacy on behalf of the child and their family may be necessary to ensure gender affirming support is provided within their kindergarten or school, and other community environments.
4. Assessment and treatment of co-existing mental health difficulties, with referral where necessary.
5. Provision of clinically relevant education about gender identity, gender dysphoria and information regarding local support groups and organisations available to provide support for the child, siblings, parents and carers.
6. If the child is expressing a desire to live in a role consistent with their gender identity, provision of psychological support and practical assistance to the child and their family to facilitate social transition.
7. Referral of a child with gender dysphoria to a paediatrician or paediatric endocrinologist experienced in the care of trans and gender diverse adolescents for medical assessment, ideally prior to the onset of puberty.

Support and treatment for trans and gender diverse adolescents

The optimal model of care for trans and gender diverse adolescents who present to services involves a coordinated, multidisciplinary team approach.⁴² This may include clinicians with expertise in the disciplines of child and adolescent psychiatry, paediatrics, adolescent medicine, paediatric endocrinology, clinical psychology, gynaecology, andrology, fertility services, speech therapy, general practice and nursing. It is unrealistic that all trans and gender diverse adolescents in Australia will be able to directly access comprehensive specialist paediatric services, especially with these specialist disciplines co-located within a public health service. Provision of a multidisciplinary team approach with coordination of care from general practitioners, private specialist practitioners and community based clinicians can be an effective alternative in ensuring best practice and accessibility to medical intervention. Utilisation of telehealth services for those based in rural and regional Australia may also facilitate treatment access.

Psychological support

Providing psychological care to trans and gender diverse adolescents requires a comprehensive exploration of the adolescent's early developmental history, history of gender identity development and expression, emotional functioning, intellectual and educational functioning, peer and other social relationships, family functioning as well as immediate and extended family support. For example, many adolescents have experienced difficulties such as family rejection, bullying by peers, discrimination and occasionally physical assaults or other forms of abuse perpetrated against them in relation to their gender identity,³⁵ and it is important to assess for this.

Like trans and gender diverse children, trans and gender diverse adolescents present with a wide range of clinical and support needs.⁴³ In adolescents with insistent, persistent and consistent gender diverse expression, a supportive family, affirming educational environment and an absence of co-existing mental health difficulties, the adolescent and their parents or caregivers may benefit from an initial assessment followed by intermittent consultations with a mental health clinician. The latter may be necessary when new concerns arise, or as required for planning for and implementing medical transition.

Sometimes, an adolescent's medical, psychological and/or social circumstances are complicated by co-existing mental health difficulties, trauma, abuse, significantly impaired family functioning, learning or behavioural difficulties, or risk issues. In such cases, more intensive mental health input may be required from a skilled mental health clinician who not only has expertise in the cognitive and emotional development of young people and adolescent psychopathology, but also has experience in working with adolescents with gender diversity and gender dysphoria in a safe and therapeutic environment.


Adolescents often encounter resistance from their parents and other family members when their trans or gender diverse identity is first disclosed during adolescence.⁴⁴ They have often spent months or even years developing an understanding and acceptance of themselves and their gender identity and have thoroughly considered how to inform their families over a long period of time. At the time of disclosure however, parents may perceive the change as being sudden and have little time to adjust before their adolescent is requiring their support and expressing a desire for intervention. For the clinician, investing time for parent support as well as individual work for the adolescent will assist in creating a shared understanding of the adolescent's experience and will enable optimisation of clinical outcomes and family functioning.

A high proportion of trans young people report difficulties at school, university or TAFE.⁷ Reduced school attendance is a common problem for adolescents,⁴⁵ which in part may be attributable to difficulties navigating the gendered environments found in many schools across Australia. Others withdraw from school altogether, limiting social interaction with peers and educational and employment opportunities available to them in the longer term. Working with the adolescent, their parents, other family members and the school is vital in ensuring successful return.⁴⁶

Managing distress during the assessment process can be difficult for adolescents and significant pressure is often experienced by clinicians from an adolescent who is certain of their need for treatment. This is often exacerbated by long waiting times to see clinicians who can provide treatment for gender dysphoria. Working with the adolescent to manage their expectations about progress and their distress is a necessity. Occasionally, counselling those who consider or do obtain hormone treatment from non-medical sources (e.g. online, via friends) on the risks of doing so should be undertaken whilst providing ongoing support and care to reduce vulnerability and risk.

As mentioned earlier, ASD has been demonstrated to be associated with gender diversity and gender dysphoria³⁷⁻⁴⁷ and as such, many adolescents presenting to specialist gender services have a history of co-existing ASD. Clinical guidelines for the management of co-existing ASD and gender dysphoria have recently been developed.¹³ For some adolescents, a formal diagnosis of ASD can be helpful for their family and teachers in understanding their social interactions and behaviour and to find strategies to manage the difficulties they encounter. For the clinician, the presence of ASD can make the assessment of an adolescent with gender dysphoria more complex and formulation may require an extended assessment period. However, the presence of ASD with confirmation of a diagnosis of gender dysphoria should not prevent access to medical treatment where indicated.⁴⁰

An increased prevalence of disordered eating behaviours exists in trans and gender diverse adolescents,^{7,48,49} possibly due to a desire to adhere to the perceived ideals of one's experienced gender.⁴²⁻⁴³ Unsafe weight management behaviours such as dietary fasting, diet pill and laxative use are elevated in trans young people, with use of non-prescription steroids also being higher in trans adolescents when compared to their cisgender peers.⁵⁰ It is therefore important that the assessment of adolescents with gender dysphoria includes consideration of the possibility of co-existing eating disorders. It has been suggested that addressing an adolescent's gender dysphoria may improve disordered eating behaviours.⁵¹⁻⁵³ Other psychiatric comorbidities such as depression, anxiety and psychosis may also increase the complexity associated with treatment and intervention decisions but should not necessarily prevent medical transition in adolescents with gender dysphoria.⁴²



Investing time for parent support as well as individual work for the adolescent will assist in creating a shared understanding of the adolescent's experience.



Voice is an important component of gender expression.

Voice and communication training

Voice is an important component of gender expression. Communication assessment, speech therapy and voice coaching by specialist speech pathologists with experience in treatment of adolescents with gender dysphoria can assist adolescents in the development of skills which enable them to communicate in a manner consistent with their gender identity.¹⁶

Social transition

The principles of social transition mentioned on page 9 are also applicable to adolescents. For older adolescents, consideration of further modification of gender expression may be helpful in reducing dysphoria. Breast binding or breast augmentation via padding can assist in masculinising or feminising the appearance of one's chest. Safe binding practices include use of a properly fitting binder, limiting their frequency (e.g. by having 'off-days'), and avoiding inflexible or adhesive tape which can cause skin irritability, pain and limitation of chest movement.⁵⁴ The practice of genital tucking or use of a penile prosthesis can also change one's appearance to be more consistent with the person's gender identity, although safety has not been studied. Hair removal utilising electrolysis, laser treatment or waxing can be useful for some adolescents with a feminine or female gender identity.⁵⁵

Fertility counselling and preservation procedures

Fertility preservation information and counselling should be provided to all adolescents prior to commencement of puberty suppression or gender affirming hormones.¹⁴ This will need to be tailored to the developmental stage of the adolescent,¹⁷ especially for those who are in the early stages of puberty who have limited understanding of reproductive biology. Although puberty suppression medication is reversible and should not in itself affect long term fertility,⁵⁶ it is very rare for an adolescent to want to cease this treatment to conduct fertility preserving interventions (e.g. semen storage) prior to commencement of gender affirming hormones. It is therefore necessary for counselling to be conducted prior to commencement of puberty suppression or gender affirming hormone treatment.¹⁷

For trans males, treatment with testosterone does not necessarily cause infertility, with many documented cases of successful pregnancies occurring in those previously treated with testosterone.^{57,58} However, the degree to which testosterone may reduce one's reproductive potential when taken in adolescence and early adulthood is unknown. It is also important to counsel the adolescent on the risks of unwanted pregnancy when taking testosterone. Despite a commonly held belief to the contrary, testosterone will not provide adequate contraception when engaging in sex with a person who is assigned male at birth and, should an unplanned pregnancy occur, androgenising effects of testosterone on the foetus are likely to cause harm.⁵⁹

For trans females, there is evidence that oestrogen impairs sperm production,⁶⁰⁻⁶² although whether these effects are permanent remain unknown.¹⁴ Because of this, it is recommended that adolescents who present in the latter stages of pubertal development (Tanner stage 3-5) be counselled on the benefits of storing semen for cryopreservation either through masturbation or surgical extraction.¹⁷

Should a trans female adolescent be commencing puberty suppression in early adolescence (Tanner stage 2-3) collection of mature sperm will usually not be possible since mature sperm are produced from mid puberty (Tanner stage 3-4). Unfortunately, this point in development often coincides with voice deepening, so most adolescents will find waiting for sperm maturation to occur unacceptable in the context of their gender dysphoria. Should the adolescent not have mature sperm for cryopreservation, testicular tissue cryopreservation can be offered as a potential means for reproduction in the future,¹⁷ but is currently experimental and with limited availability across Australia outside of major capital cities. There is a surgical disadvantage that arises from the reduced availability of penile and scrotal skin for creation of a neovagina with early commencement of puberty suppression,⁶³ and this may be another consideration for trans female adolescents commencing puberty suppression in early adolescence (Tanner stage 2-3), who also desire genital surgery in adulthood.



Puberty suppression

Puberty suppression involves medication which suppresses the endogenous oestrogen and testosterone responsible for induction of secondary sexual characteristics.⁶⁴⁻⁶⁵ In Australia, gonadotrophin releasing hormone analogues (GnRHa) are available in subcutaneous and intramuscular injectable preparations. Puberty suppression typically relieves distress for trans adolescents by halting progression of physical changes such as breast growth in trans males and voice deepening in trans females,^{9,20,21} and is reversible in its effects.¹⁴ Other physical changes such as linear growth and weight gain continue to occur whilst on these medications²⁵ and the adolescent is given time to develop emotionally and cognitively prior to making decisions on gender affirming hormone use which have some irreversible effects.

Puberty suppression is most effective in preventing the development of secondary sexual characteristics when commenced at Tanner stage 2. However, the timing of commencement of puberty suppression in trans feminine adolescents requires consideration of the benefits of allowing sufficient genital growth to optimise future surgical options whilst preventing development of facial masculinisation and voice deepening as puberty progresses. Whilst GnRHa provide effective pubertal suppression, use of anti-androgen medications such as cyproterone acetate or spironolactone may also relieve dysphoria in trans female adolescents. For trans male adolescents, commencement of GnRHa is likely to be most beneficial in those who are at Tanner stage 2 to Tanner stage 3. For trans males presenting following significant breast growth and post onset of menstruation, GnRHa will induce amenorrhoea to reduce dysphoria around menstruation, but this can also be achieved less invasively and more affordably with oral norethisterone. The side effect profiles of each of these medications differ and the decision regarding choice of puberty suppression medication should be made between the adolescent and their treating team with oral norethisterone or GnRHa to be offered as indicated.

The main concern with use of puberty suppression from early puberty is the impact it has on bone mineral density due to the absence of effect of oestrogen or testosterone on bone mineralisation during this time.^{22,26} Assessment of bone mineral density at commencement of treatment and regular monitoring during treatment is therefore recommended.¹⁴ Reduction in the duration of use of puberty suppression by earlier commencement of gender affirming hormone treatment must be considered in adolescents with reduced bone density to minimise negative impacts. Improvement in bone mineral density is seen following commencement of oestrogen and testosterone,^{22,26} but the long term impact of puberty suppression on bone mineralisation is currently unknown. Encouraging adolescents on puberty suppression to optimise bone health with adequate calcium intake, vitamin D supplementation (if indicated) and weight bearing exercise is important.⁶⁵

Puberty suppression typically relieves distress for trans adolescents by halting progression of physical changes.

Gender affirming hormone treatment using oestrogen and testosterone

Gender affirming hormones oestrogen and testosterone are used to either feminise or masculinise a person's appearance by inducing onset of secondary sexual characteristics of the desired gender.^{14,22} Some of the effects of these medications are irreversible, whilst others have a degree of expected reversibility that is likely, unlikely or unknown (see tables below).

Table 1. Physiological effects of oestrogen
(Adapted from *The Endocrine Society Guidelines 2017*)¹⁴

Effect of oestrogen	Onset	Maximum	Reversibility
Redistribution of body fat	3-6 months	2-3 years	Likely
Decrease in muscle mass and strength	3-6 months	1-2 years	Likely
Softening of skin and decreased oiliness	3-6 months	unknown	Likely
Decreased libido	1-3 months	3-6 months	Likely
Decreased spontaneous erections	1-3 months	3-6 months	Likely
Breast growth	3-6 months	2-3 years	Not possible
Decreased testicular volume	3-6 months	2-3 years	Unknown
Decreased sperm production	Unknown	> 3 years	Unknown
Decreased terminal hair growth	6-12 months	>3 years	Possible
Scalp hair	Variable		
Voice changes	None		

Table 2. Physiological effects of testosterone
(Adapted from *The Endocrine Society Guidelines 2017*)¹⁴

Effect of testosterone	Onset	Maximum	Reversibility
Skin oiliness and acne	1-6 months	1-2 years	Likely
Facial and body hair growth	6-12 months	4-5 years	Unlikely
Scalp hair loss	6-12 months		Unlikely
Increased muscle mass and strength	6-12 months	2-5 years	Likely
Fat redistribution	1-6 months	2-5 years	Likely
Cessation of menses	1-6 months		Likely
Clitoral enlargement	1-6 months	1-2 years	Unknown
Vaginal atrophy	1-6 months	1-2 years	Unknown
Deepening of voice	6-12 months	1-2 years	Not possible



Ideally, the decision regarding timing of hormone commencement should be individualised to provide best care for the adolescent.

The ideal time for commencement of gender affirming hormone treatment in trans adolescents will depend on the individual seeking treatment and their unique circumstances. There is no empirical evidence to provide objective recommendations for the appropriate age for introduction of oestrogen or testosterone, with previous guidelines using age informed cut-offs based on clinician consensus and the age at which consent for medical procedures is achieved in that particular jurisdiction.

Adolescents vary in the age at which they become competent to make decisions that have complex risk-benefit ratios,⁶⁶ as is the case with hormone treatment that is partially irreversible. This is an important consideration, with a thorough assessment of competence being a central part of both mental health and paediatric assessments. In addition to ensuring the adolescent is competent to make an informed decision, the timing of commencement of gender affirming hormone treatment will also depend on the nature of the history and presentation of the person's gender dysphoria, duration of time on puberty suppression for those undertaking such treatment, co-existing mental health and medical issues and existing family support.

On occasion, a trans or gender diverse adolescent may express a desire to medically transition but not be in a position to provide informed consent. The case of an adolescent with an intellectual disability (ID) is one such example.⁶⁷ Cognitive ability and developmental level may influence the presentation of gender diversity and it appears that those with ID are less likely to receive treatment for gender dysphoria despite guidelines advocating access to the full range of available help and services irrespective of disability.⁶⁸ In these cases, treatment decisions require an individualised and developmental approach⁶⁷ and should be made in close consultation with the family, based on the adolescent's best interest rather than solely on their capacity.

Whilst later commencement of hormone treatment during adolescence provides time for further emotional maturation and potentially lessens the risk that the adolescent will regret their decision, this should be carefully balanced by the biological, psychological and social costs to the adolescent of delaying treatment. Biological implications of delaying hormones include prolonged administration of puberty suppression, where used, with longer suppression likely to be associated with a greater risk of relative osteopenia. Some trans females may also be distressed by linear growth beyond their expected final height due to delayed growth plate closure with oestrogen and testosterone deficiency. Psychological costs may include the negative contribution treatment delay may have on an adolescent's sense of autonomy and agency, and may contribute to, or exacerbate, distress, anxiety or depression with subsequent increase in self-harm or suicide risk. Lack of control over personal decision making when faced with barriers to care perceived to be arbitrary and/or unnecessary can be especially difficult for adolescents. Social costs of delayed treatment include peer group and relationship difficulties with pubertal development occurring significantly behind expected norms.

Ideally, the decision regarding timing of hormone commencement should be individualised to provide best care for the adolescent, taking into consideration all the factors mentioned above. The decision should be shared between the clinicians, the adolescent and their family with the values and belief systems of all contributors being respectfully considered.

The roles of the mental health professional in the assessment and ongoing care of adolescents with gender dysphoria may include:

1. Assessment of developmental history, gender identity, cognitive and emotional functioning.
2. Assessment of family support, dynamics and functioning. Provision of family support over time may be necessary to enable a safe and supportive home environment. Provision of support for carers and advocacy to ensure gender affirming environments for adolescents in out of home care or within youth justice facilities will be necessary in these circumstances.
3. Assessment of social, educational or vocational functioning. Advocacy on behalf of the adolescent and their family may be necessary to ensure gender affirming support is provided within their educational environment or place of work.
4. Diagnostic assessment for gender dysphoria in adolescence. The DSM-5 criteria for Gender Dysphoria in Adolescents and Adults 302.85 (F64.1) and ICD-10 codes (F64) are widely used for diagnostic purposes internationally.
5. Assessment and treatment of co-existing mental health difficulties such as depression and anxiety with ongoing assessment of risk for self-harm and suicide.
6. Identification of circumstances that may require more intensive psychotherapy and referral where necessary.
7. Assessment of the adolescent's ability to consent to medical intervention in collaboration with the paediatrician, adolescent physician or endocrinologist.
8. Supportive psychotherapy to assist the adolescent in the exploration of their gender identity, preparing for and undertaking social and/or medical transition and provision of post transition psychological support. This should include an exploration of the potential psychosocial impacts of social transitioning prior to medical transition and managing these expectations and difficulties should they arise over time.
9. Provision of developmentally appropriate counselling regarding the impact of medical intervention on sexuality, sexual pleasure, fertility potential and the options available for fertility preservation.
10. Referral for fertility preservation as required.
11. Counselling of the adolescent and their parents/ caregivers on the available options for gender affirming surgical procedures such as chest reconstruction with referral where appropriate.
12. Provision of clinically relevant education about gender identity, gender dysphoria and information regarding local support groups and organisations available to provide support for the adolescent, siblings, parents and carers.
13. Provision of documentation to assist the adolescent to change identity documents to reflect the adolescent's preferred name and gender when requested.
14. Management of timely transition from paediatric to adult services as appropriate.

Adolescents vary in the age at which they become competent to make decisions that have complex risk-benefit ratios.

The roles of the paediatrician, adolescent physician or endocrinologist in the assessment and ongoing care of adolescents with gender dysphoria may include:

1. Assessment of the adolescent's gender identity, general health and wellbeing through medical and psychosocial history taking, physical examination and appropriate investigations (see recommended investigations prior to medical intervention in appendices 1 and 2).
2. Assessment of family support, dynamics and functioning. Provision of family support over time may be necessary to enable a safe and supportive home environment. Provision of support for carers and advocacy to ensure gender affirming environments for adolescents in out of home care or within youth justice facilities will be necessary in these circumstances.
3. Assessment of social, educational or vocational functioning. Advocacy on behalf of the adolescent and their family may be necessary to ensure gender affirming support is provided within their school environment or place of work.
4. Provision of information and education to the adolescent and their parents/carers regarding options for medical transitioning including risks and benefits of puberty suppression and gender affirming hormones.
5. Education, advice and provision of medical intervention when appropriate for the management of menstrual suppression, contraception and pregnancy related issues.
6. Provision of developmentally appropriate education regarding the impact of medical intervention on sexuality, sexual pleasure, fertility potential and the options available for fertility preservation.
7. Referral for fertility preservation as required.
8. Assessment of the adolescent's ability to consent to medical intervention. This should be done in collaboration with the mental health clinician.
9. Prescription of medication for initiation and maintenance of pubertal suppression and gender affirming hormone treatment.
10. Monitoring of physical and mental health during medical transition. This includes identification and monitoring for both desired physical and psychological changes and adverse effects from treatment.
11. Work in collaboration with the mental health clinician to monitor emotional and psychological functioning and to identify change in self-harm and suicidal risk over time.
12. Counselling of the adolescent and their parents/ caregivers on the available options for gender affirming surgical procedures such as chest reconstruction with referral where appropriate.
13. Provision of documentation to assist the adolescent to change identity documents to reflect the adolescent's preferred name and gender when requested.
14. Management of timely transition from paediatric to adult services as appropriate.



The roles of the gynaecologist and/or andrologist in the assessment and ongoing care of adolescents with gender dysphoria may include:

1. Education, advice and provision of medical intervention when appropriate for the management of menstrual suppression, contraception and pregnancy related issues.
2. Counselling of the trans or gender diverse adolescent regarding issues of sexuality and sexual pleasure.
3. Provision of information and education to the adolescent and their parents/carers regarding options for medical transitioning including risks and benefits of puberty suppression and gender affirming hormones.
4. Provision of developmentally appropriate education regarding the impact of medical intervention on fertility potential and the options available for fertility preservation.
5. Referral for fertility preservation as required.
6. Counselling of birth assigned female adolescents and their parents/caregivers on the options for gender affirming surgical procedures such as chest reconstruction. Counselling on the risks, benefits and potential limitations of other surgical procedures such as phalloplasty, hysterectomy and bilateral salpingectomy as required.
7. Counselling of birth assigned male adolescents and their parents/caregivers on the impact medical treatment such as puberty suppression may have on future surgical procedures, including creation of the neovagina. Counselling on the potential for altered sensation relating to orgasm as a consequence of this surgery is also necessary.

The roles of the nurse in the assessment and ongoing care of adolescents with gender dysphoria may include:

1. Provision of family-centred, developmentally appropriate gender affirming nursing practice.
2. Conduct outpatient consultations to assess medical, psychosocial and cultural needs.
3. Assessment of self-harm and suicide risk.
4. Provision of education to enable adolescents and their families to make informed decisions regarding treatment options.
5. Provision of interventions such as medication administration and monitoring of desired effects and adverse outcomes of treatment.
6. Provision of psychosocial support to the adolescent and their family/carers throughout the treatment pathway.
7. Liaise with the patient's multidisciplinary team in the care of adolescents and their families to ensure best practice.
8. Provide referrals to community based support groups and organisations who can provide education, support and advocacy for the adolescent and their family.

The roles of the speech pathologist in the assessment and ongoing care of adolescents with gender dysphoria may include:

1. Supportive exploration of the adolescent's own voice and communication style and the changes which may occur during transition.
2. Provision of education regarding voice development, vocal health and effective communication.
3. Teaching efficient voice production focussing on gender specific characteristics and listener perceptions.
4. Support the adolescent through training options, including self-guided practice and telehealth consultations where available.

The roles of the general practitioner (GP) in the assessment and ongoing care of adolescents with gender dysphoria:

GPs are the primary healthcare providers in Australia and are well-equipped to provide gender affirming care. Many GPs play a central role in the provision of and coordination of gender affirming care. Communication between the GP and members of a multidisciplinary team allows for optimal care coordination with maximisation of available locally based services to address clinical, psychological, and social supports that may be required. Other roles may include:

1. Assessment of the young person's health and wellbeing, level of understanding, maturity, and capacity to provide informed consent through medical and psychosocial history taking, physical examination and appropriate investigations.
2. Assessment of family support and family functioning. Provision of family support over time is necessary to enable a safe and supportive home environment. Provision of support for carers and advocacy to ensure gender affirming environments for adolescents in out of home care or within youth justice facilities will be necessary in these circumstances.
3. Provision of individual support to the siblings, parents and other family members of the trans or gender diverse adolescent where appropriate.
4. Assessment of social, educational or vocational functioning. Advocacy on behalf of the adolescent and their family may be necessary to ensure gender affirming support is provided within their school environment or place of work.
5. Provision of information and education to the adolescent and their parents/carers regarding options for medical transitioning including risks and benefits of puberty suppression and gender affirming hormones.
6. Referral to specialist gender services when required.
7. Education, advice and provision of medical intervention when appropriate for the management of menstrual suppression, contraception and pregnancy related issues.
8. Provision of developmentally appropriate education regarding the impact of medical intervention on sexuality, sexual pleasure, fertility potential and the options available for fertility preservation.
9. Referral for fertility preservation as required.
10. Monitoring of emotional and psychological functioning and identification of self-harm and suicidal risk over time.
- 11a. GPs with sufficient expertise and skill in initiating and monitoring hormone therapy can consider initiating and optimising hormone therapy for suitable Gillick competent minors. This would typically be within a primary care led multidisciplinary team tailored to the patient's needs and availability of services, which may include non-GP specialists, such as paediatricians, adolescent physicians, paediatric or adult endocrinologists, sexual health physicians, fertility specialists, nurse practitioners, dietitians, speech therapists or social workers. Many young gender diverse people benefit from mental health support, and GPs should discuss this with patients and offer referrals to psychologists, psychiatrists, or other mental health professionals if and as required. The appropriate members of the collaborative team should be directed by the needs of the young person.

- 11b. In some circumstances, the GP/prescribing clinician might not be confident to assess the appropriateness of gender affirming medical treatments, or a patient's readiness to commence these treatments by themselves or may be uncertain about the patient's ability to consent to treatment. In these circumstances a referral should be made to a qualified mental health professional with experience in providing gender affirming care, so that the patient is supported to find the right pathway of treatment for their needs. The mental health professional can support a patient's exploration of their identity, assess their decision-making capacity, and help address any mental health concerns or complexities.
12. Monitoring of physical and mental health during medical transition. This includes identification and monitoring for both desired physical and psychological changes and adverse effects from treatment.
13. Counselling of the adolescent and their parents/caregivers on the available options for gender affirming surgical procedures such as chest reconstruction with referral where appropriate.
14. Provision of documentation to assist the adolescent to change identity documents to reflect the adolescent's preferred name and gender when requested.

The roles of the bioethicist and the legal practitioner in the care of adolescents with gender dysphoria may include:

1. Bioethicists can provide secondary consultation to clinicians or multidisciplinary teams who request assistance in decision making regarding a complex clinical situation or dilemma in provision of care. Examples may include treatment decisions involving adolescents who are especially vulnerable or at high risk, parents with conflicting and opposing views, or discordance in clinician opinion regarding an adolescent's ability to provide informed consent or their best interests.
2. Legal advice may be sought when young people or their families experience discrimination or in the case of an objecting parent or legal guardian who initiates legal proceedings with the aim of preventing commencement or continuation of treatment.



RCH Gender Service Clinical Nurse Consultant

Commencement of puberty suppression using gonadotrophin releasing hormone analogues (GnRHa)

Criteria for adolescents to commence puberty suppression:

1. A diagnosis of Gender Dysphoria in Adolescence, made by a mental health clinician with expertise in child and adolescent development, psychopathology and experience with children and adolescents with gender dysphoria.
2. Medical assessment including fertility preservation counselling has been completed by a general practitioner, paediatrician, adolescent physician or endocrinologist. This assessment should include further fertility preservation counselling by a gynaecologist and/or andrologist as required with referral for fertility preservation when requested.
3. Tanner stage 2 pubertal status has been achieved. This can be confirmed via clinical examination with presence of breast buds or increased testicular volume (>4 mL) and elevation of luteinising hormone to ≥ 0.5 IU/L.
4. The treating team should agree that commencement of puberty suppression is in the best interest of the adolescent and assent from the adolescent and informed consent from their legal guardians has been obtained.

Commencement of gender affirming hormone treatment using oestrogen or testosterone

Criteria for adolescents to commence gender affirming hormone treatment using oestrogen or testosterone:

1. A diagnosis of Gender Dysphoria in Adolescence, made by a mental health clinician with expertise in child and adolescent development, psychopathology and experience with children and adolescents with gender dysphoria.
2. Medical assessment including fertility preservation counselling has been completed by a general practitioner, paediatrician, adolescent physician or endocrinologist. This assessment should include further fertility preservation counselling by a gynaecologist and/or andrologist as required with referral for fertility preservation when requested.
3. The treating team should agree that commencement of oestrogen or testosterone is in the best interest of the adolescent and informed consent from the adolescent has been obtained. Current Australian law requires the adolescent's clinicians to ascertain whether or not an adolescent's parents or legal guardians consent to the proposed treatment before an adolescent can access either pubertal suppression or hormone treatment. Where there is no dispute between the parents, the adolescent or the medical practitioner, the clinician may proceed on the basis of the adolescent's consent, where competent to consent, or parental consent, where the adolescent is not competent to consent. Where there is a dispute as to either competence, diagnosis or treatment, court authorisation prior to commencement of treatment is required.

Should the adolescent not have capacity to provide informed consent, treatment decisions are based on the adolescent's best interests.

Surgical interventions for trans and gender diverse adolescents

Chest reconstructive surgery (also known as top surgery) may be appropriate in the care of trans males during adolescence.⁶⁹ In alignment with the recommendations of WPATH SOC version 7¹² chest reconstructive surgery is regularly performed across the world in countries where the age of majority for medical procedures is 16 years.⁷⁰

Given the irreversible nature of gender affirming surgical procedures, the decision to undertake chest reconstructive surgery during adolescence requires considered and thorough assessment by professionals experienced in working with adolescents with gender dysphoria. Similar to the decisions regarding commencement of gender affirming hormones, an individualised approach is needed. Thorough assessments of the cognitive and emotional maturity of the adolescent, their support networks and their capacity to understand the risks and benefits of surgical intervention are required to ensure good outcomes. A decision as to whether the surgery is in the adolescent's best interest should be made jointly, with consensus reached between the adolescent, their parents/guardians and the clinicians involved in their care. Ideally, this would include the members of the multidisciplinary team taking a holistic approach with the paediatrician or endocrinologist, the mental health clinicians and the surgeon in agreement regarding best interest.¹²

Genital surgery performed before the age of 18 years remains a relatively uncommon practice internationally. Surgeons' attitudes towards specific guidelines on undertaking vaginoplasties in minors vary.⁷⁰ Decisions regarding an individual adolescent's best interest and ability to consent for genital surgery are more complex than that of chest reconstructive surgery. This is partly due to greater risks associated with such major surgery, as well as the impacts on the adolescent's long term sexual function and reproductive potential. Given this complexity, delaying genital surgery until adulthood is advised.

Chest reconstructive surgery (also known as top surgery) may be appropriate in the care of trans males during adolescence.

Transition of care to adult health providers

Transition to adult healthcare services can be a source of significant anxiety for trans adolescents and their family when they have been cared for within a paediatric setting over many years. Not only have they established therapeutic relationships with the clinicians and other staff, most adolescents are continuing to experience ongoing physical changes from hormone treatment and are simultaneously dealing with the psychological impacts of finishing their secondary school education and entering further education or employment opportunities.

Discussion with the adolescent and their family regarding the need for transition of care and the process by which this will occur should start in the years prior to the actual transfer taking place. The young person's GP is vital in facilitating a smooth process and many GPs continue as the primary doctor involved in hormone prescribing and monitoring of mental health after engaging in a shared care arrangement during paediatric treatment. This is especially helpful for adolescents who live in rural or regional areas where specialist gender services are not available.

For adolescents who have significant co-existing mental health conditions or who are at high risk of self-harm or suicide, ongoing specialist mental health care is required.



Appendices

As mentioned above, the recommendations made in this document are based primarily on clinician consensus, along with previously published standards of care from the World Professional Association for Transgender Health (WPATH),¹² treatment guidelines and position statements,¹³⁻¹⁹ and findings from a limited number of non-randomised clinical studies and observational studies.^{8-11,20-26} It is clear that further research is warranted across all domains of care for trans and gender diverse children and adolescents, the findings of which are likely to influence future recommendations.

Appendix 1: Recommended medical examination and investigations for puberty suppression using gonadotrophin releasing hormone analogues (GnRHa)

	Physical Examination	Investigations
Initial examination and investigations prior to commencement of puberty suppression	Height Weight BMI Blood pressure Tanner stage	FBE UEC LFT Oestradiol &/or Testosterone LH and FSH Bone mineral density Bone age Lipid profile BSL
Monitoring during puberty suppression every 3 months	Height Weight BMI Blood pressure Documentation of physical changes or side effects	
Monitoring during puberty suppression at 6 months (just prior to the third dose of Goserelin or Leuprorelin acetate)		LH and FSH Oestradiol or Testosterone
Monitoring during puberty suppression every 12 months until completion of puberty suppression treatment	Tanner stage	FBE UEC LFT Lipid profile BSL Bone mineral density (as required) LH and FSH Oestradiol or Testosterone

Note: Full blood examination (FBE); Urea and electrolytes (UEC); Liver function test (LFT); Lutenising hormone (LH); Follicle stimulating hormone (FSH); Blood sugar level (BSL); Body mass index (BMI).

Appendix 2: Recommended medical examination and investigations prior to commencement and throughout treatment with oestrogen or testosterone

	Physical Examination	Investigations
Initial examination and investigations prior to commencement of gender affirming hormones	Height Weight BMI Blood pressure Tanner stage	FBE UEC LFT Oestradiol or Testosterone LH and FSH Lipid profile BSL
Monitoring during gender affirming hormone treatment every 3 months	Height Weight BMI Blood pressure Documentation of physical changes: e.g. breast growth, voice changes, facial and body hair Documentation of unwanted effects	
Monitoring during gender affirming hormone treatment every 6 months <small>(Note: testosterone levels should be performed just prior to the testosterone undecanoate dose or half way in between doses of testosterone enanthate)</small>		LH and FSH Oestradiol or Testosterone FBE UEC LFT
Monitoring during gender affirming hormone treatment every 12 months	Tanner stage	Bone mineral density (to document recovery after being on puberty suppression as required) BSL Lipid profile

Note: Full blood examination (FBE); Urea and electrolytes (UEC); Liver function test (LFT); Lutenising hormone (LH); Follicle stimulating hormone (FSH); Blood sugar level (BSL); Body mass index (BMI).



Appendix 3: Induction of feminising hormones for adolescents: treatment recommendations

1. If the patient is already on GnRH analogues continue this medication for at least 6 months

Goserelin 10.8 mg subcutaneous implant approximately every 10 – 12 weeks

Leuprorelin 22.5mg or 30mg intramuscular injection every 3-4 months

Triptorelin 22.5mg intramuscular injection every 5-6 months

2. Commencing oestrogen for induction of female puberty

Commence oestradiol valerate (e.g. Progynova) 1mg oral daily or equivalent dose transdermal oestradiol patch and continue for 6-12 months

Increase the dose to 2mg oral daily depending on clinical effect at 6 or 12 months. Further increases may be necessary over time to a maximum dose of 2-4mg oral daily

On cessation of puberty suppression, commence anti-androgen medication if desired

An anti-androgen can be commenced at the time of oestrogen induction if the adolescent is not on a GnRH analogue. Options include:

- i. Spironolactone 100mg oral daily, increasing to up to 200mg oral twice daily as required
- ii. Cyproterone acetate 12.5-50mg oral daily

Appendix 4: Induction of masculinising hormones for adolescents: treatment recommendations

1. If the patient is taking the oral contraceptive pill this should be discontinued

A withdrawal bleed will occur over approximately 5-7 days

2. If the patient is on norethisterone for induced amenorrhoea continue this for at least 6 months to prevent menstruation

3. If the patient has a levonorgestrel (e.g. Mirena) intrauterine device in situ this can remain in place to prevent menstruation and provide contraception

4. If the patient is already on GnRH analogues continue this medication for at least 6 months

Goserelin 10.8 mg subcutaneous implant approximately every 10 – 12 weeks

Leuprorelin 22.5mg or 30mg intramuscular injection every 3-4 months

Triptorelin 22.5mg intramuscular injection every 5-6 months

5. Commencing testosterone via intramuscular injection or topical application

5a) Patients at Tanner stage 2-4 and currently on puberty suppression

Start testosterone enanthate in a dose of 0.5mL (125mg) intramuscular injection every 3 weeks

After a total of 6 months of testosterone treatment the dose may be increased to 1mL (250mg) testosterone enanthate intramuscular injection every 3 weeks

Once the testosterone enanthate dose has been increased to 250mg every 3 weeks, it should be possible to stop the GnRHa, as the testosterone alone will suppress endogenous female hormones. In the long term it may be best to treat with long-acting testosterone undecanoate (e.g. Reandron 1000) intramuscular injection every 8-12 weeks. This can be discussed with each young person on an individual basis

Alternatively, use of topical testosterone preparations can assist with incremental dose increases and adjustments. Options include:

- i. Testogel daily transdermal gel 12.5mg per actuation/pump. Dose 1 to 4 pumps daily
- ii. Androforte 5% transdermal cream. Starting dose 0.5-1mL daily, maintenance of 2mL daily

5b) Patients at Tanner stage 4-5 and not on puberty suppression

Consider commencement of testosterone treatment by either the graded approach as above in 5a) or

Consider using long-acting testosterone undecanoate (e.g. Reandron 1000) intramuscular injection from the outset. Should testosterone treatment be initiated by using long-acting testosterone undecanoate, the second dose should be given at 6 weeks and subsequently continued at 12 week intervals. In the longer term, long-acting testosterone undecanoate may be given at 8-12 week intervals depending on serum testosterone levels.

References

- Telfer M, Tollit M, Feldman D. Transformation of health-care and legal systems for the transgender population: The need for change in Australia. *J Paediatr Child Health*. 2015;51:1051-1053.
- 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 Adolesc Health*. 2014;55:93-99.
- Hillier L, Jones T, Monagle M, et al. *Writing Themselves in 3: The Third National Study on the Sexual Health and Wellbeing of Same Sex Attracted and Gender Questioning Young People*. Melbourne: Australian Research Centre in Sex, Health and Society, La Trobe University; 2010.
- Hyde Z, Doherty M, Tilley P, McCaul K, Rooney R, Jancey J. *The First Australian National Trans Mental Health Study: Summary of Results*. Perth, Australia: School of Public Health, Curtin University; 2014.
- Giordano S. *Children with Gender Identity Disorder: A Clinical, Ethical, and Legal Analysis*. Oxon, UK: Routledge; 2013.
- Couch M, Pitts M, Mulcare H, Croy S, Mitchell A, Patel S. *Tranznation: A Report on the Health and Wellbeing of Transgendered People in Australia and New Zealand*. Melbourne: The Australian Research Centre in Sex, Health & Society, La Trobe University; 2007.
- Strauss P, Cook A, Winter S, Watson V, Wright Toussaint D, Lin A. *Trans Pathways: The Mental Health Experiences and Care Pathways of Trans Young People. Summary of Results*. Perth, Australia: Telethon Kids Institute; 2017.
- Hidalgo MA, Ehrensaft D, Tishelman AC, et al. The gender affirmative model: What we know and what we aim to learn. *Hum Dev*. 2013;56(5):285-290.
- de Vries A, McGuire J, Steensma T, Wagenaar EC, Doreleijers TA, Cohen-Kettenis PT. Young adult psychological outcome after puberty suppression and gender reassignment. *Pediatrics*. 2014;134:696-704.
- Simons L, Schrager S, Clark L, Belzer M, Olson J. Parental support and mental health among transgender adolescents. *J Adolesc Health*. 2013;53:791-793.
- Olson K, Durwood L, DeMeules M, McLaughlin K. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016;137(3):e20153223.
- Coleman E, Bockting W, Botzer M, et al. Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *Int J Transgend*. 2012;13(4):165-232.
- Strang JF, Meagher H, Kenworthy L, et al. Initial clinical guidelines for co-occurring autism spectrum disorder and gender dysphoria or incongruence in adolescents. *J Clin Child Adolesc Psychol*. 2018;47(1):105-115.
- Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: An Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*. 2017;102(11):3869-3903.
- Bockting WO, Goldberg J. *Guidelines for Transgender Care*. Binghamton, NY: Haworth Medical Press; 2006.
- Adler RK, Hirsch S, Mordaunt M. *Voice and Communication Therapy for the Transgender/Transsexual Client: A Comprehensive Clinical Guide*. San Diego, CA: Plural Publishing; 2012.
- Finlayson C, Johnson EK, Chen D, et al. Proceedings of the working group session on fertility preservation for individuals with gender and sex diversity. *Transgend Health*. 2016;1(1):99-107.
- American Psychological Association, Task Force on Gender Identity and Gender Variance. *Report of the Task Force on Gender Identity and Gender Variance*. Washington, DC: Author; 2009.
- Burnes TR, Singh AA, Harper A, et al. American Counseling Association: Competencies for counseling with transgender clients. *J LGBT Issues Couns*. 2010;4(3-4):135-159.110.
- Costa R, Dunsford M, Skagerberg E, Holt V, Carmichael P, Colizzi M. Psychological support, puberty suppression, and psychosocial functioning in adolescents with gender dysphoria. *J Sex Med*. 2015;12(11):2206-2214.
- de Vries AL, Steensma TD, Doreleijers TA, Cohen-Kettenis PT. Puberty suppression in adolescents with gender identity disorder: A prospective follow-up study. *J Sex Med*. 2011;8(8):2276-2283.
- Delemarre-van de Waal HA, Cohen-Kettenis PT. Clinical management of gender identity disorder in adolescents: A protocol on psychological and paediatric endocrinology aspects. *Eur J Endocrinol*. 2006;155(suppl 1):S131-S137.
- Tack LJ, Heyse R, Craen M, et al. Consecutive cyproterone acetate and estradiol treatment in late-pubertal transgender female adolescents. *J Sex Med*. 2017;14(5):747-757.
- Durwood L, McLaughlin KA, Olson KR. Mental health and self-worth in socially transitioned transgender youth. *J Am Acad Child Adolesc Psychiatry*. 2017;56(2):116-123 e112.
- Schagen SE, Cohen-Kettenis PT, Delemarre-van de Waal HA, Hannema SE. Efficacy and safety of gonadotropin-releasing hormone agonist treatment to suppress puberty in gender dysphoric adolescents. *J Sex Med*. 2016;13(7):1125-1132.
- Vlot MC, Klink DT, den Heijer M, Blankenstein MA, Rotteveel J, Heijboer AC. Effect of pubertal suppression and cross-sex hormone therapy on bone turnover markers and bone mineral apparent density (BMAD) in transgender adolescents. *Bone*. 2016;95:11-19.
- Rieger E, ed *Abnormal Psychology: Leading Researcher Perspectives*. 4 ed. Australia: McGraw-Hill Education (Australia) Pty Ltd; 2017.
- Richards C, Bouman WP, Seal L, Barker MJ, Nieder TO, T'Sjoen G. Non-binary or genderqueer genders. *Int Rev Psychiatry*. 2016;28(1):95-102.
- Deutsch MB, Buchholz D. Electronic health records and transgender patients—practical recommendations for the collection of gender identity data. *J Gen Intern Med*. 2015;30(6):843-847.
- Riggs DW, Coleman K, Due C. Healthcare experiences of gender diverse Australians: A mixed-methods, self-report survey. *BMC Public Health*. 2014;14:230-234.
- Cohen-Kettenis PT, Steensma TD, de Vries AL. Treatment of adolescents with gender dysphoria in the Netherlands. *Child Adolesc Psychiatr Clin N Am*. 2011;20(4):689-700.
- Gelder MG, Marks IM. Aversion treatment in transvestism and transsexualism. In: Green R, Money J, eds. *Transsexualism and Sex Reassignment*. Baltimore, MD: Johns Hopkins Press; 1969:383-413.
- Substance Abuse and Mental Health Services Administration. *Ending Conversion Therapy: Supporting and Affirming LGBTQ Youth, HHS Publication No. (SMA) 15-4928*. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2015.
- Drescher J. Controversies in gender diagnoses. *LGBT Health*. 2013;1(1):10-14.
- Smith E, Jones T, Ward R, Dixon J, Mitchell A, Hillier L. *From Blues to Rainbows: The Mental Health and Well-being of Gender Diverse and Transgender Young People in Australia*. Melbourne: Australian Research Centre in Sex, Health & Society; 2014.
- Kerry SC. Sisters/brotherboys: The status of indigenous transgender Australians. *Int J Transgend*. 2014;15:173-186.
- May T, Pang K, Williams K. Gender variance in children and adolescents with autism spectrum disorder from the National Database for Autism Research. *Int J Transgend*. 2016;18:7-15.
- Janssen A, Huang H, Duncan C. Gender variance among youth with autism spectrum disorders: A retrospective chart review. *Transgend Health*. 2016;1(1): 63-68.
- 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.
- de Vries AL, Noens IL, Cohen-Kettenis PT, van Berckelaer-Onnes IA, Doreleijers TA. Autism spectrum disorders in gender dysphoric children and adolescents. *J Autism Dev Disord*. 2010;40(8):930-936.
- Bartholomaeus C, Riggs DW, Andrew Y. The capacity of South Australian primary school teachers and pre-service teachers to work with trans and gender diverse students. *Teach Teach Educ*. 2017;65:127-135.
- Tishelman AC, Kaufman R, Edwards-Leeper L, Mandel FH, Shumer DE, Spack NP. Serving transgender youth: Challenges, dilemmas, and clinical examples. *Prof Psychol Res Pr*. 2015;46(1):37.
- de Vries AL, Doreleijers TA, Steensma TD, Cohen-Kettenis PT. Psychiatric comorbidity in gender dysphoric adolescents. *J Child Psychol Psychiatry*. 2011;52(11):1195-1202.
- Dierckx M, Motmans J, Mortelmans D, T'sjoen G. Families in transition: A literature review. *Int Rev Psychiatry*. 2016;28(1):36-43.
- Terada S, Matsumoto Y, Sato T, Okabe N, Kishimoto Y, Uchitomi Y. School refusal by patients with gender identity disorder. *Gen Hosp Psychiatry*. 2012;34(3):299-303.
- Kearney CA. School absenteeism and school refusal behavior in youth: A contemporary review. *Clin Psychol Rev*. 2008;28(3):451-471.
- Jacobs L, Rachlin K, Erickson-Schroth L, Janssen A. Gender dysphoria and co-occurring autism spectrum disorders: Review, case examples, and treatment considerations. *LGBT Health*. 2014;2(00).
- Vocks S, Stahn C, Loenser K, Legenbauer T. Eating and body image disturbances in male-to-female and female-to-male transsexuals. *Arch Sex Behav*. 2009;38(3):364-377.
- Witcomb GL, Bouman WP, Brewin N, Richards C, Fernandez-Aranda F, Arcelus J. Body image dissatisfaction and eating-related psychopathology in trans individuals: A matched control study. *Eur Eat Disord Rev*. 2015;23(4):287-293.
- Guss CE, Williams DN, Reisner SL, Austin SB, Katz-Wise SL. Disordered weight management behaviors, nonprescription steroid use, and weight perception in transgender youth. *J Adolesc Health*. 2017;60(1):17-22.
- Ewan LA, Middleman AB, Feldmann J. Treatment of anorexia nervosa in the context of transsexuality: A case report. *Int J Eat Disord*. 2014;47(1):112-115.
- Strandjord SE, Ng H, Rome ES. Effects of treating gender dysphoria and anorexia nervosa in a transgender adolescent: Lessons learned. *Int J Eat Disord*. 2015;48(7):942-945.
- Testa RJ, Rider GN, Haug NA, Balsam KF. Gender confirming medical interventions and eating disorder symptoms among transgender individuals. *Health Psychol*. 2017;36(10):927-936.
- Peitzmeier S, Gardner I, Weinand J, Corbet A, Acevedo K. Health impact of chest binding among transgender adults: A community-engaged, cross-sectional study. *Cult Health Sex*. 2017;19(1):64-75.
- Ginsberg BA, Calderon M, Seminara NM, Day D. A potential role for the dermatologist in the physical transformation of transgender people: A survey of attitudes and practices within the transgender community. *J Am Acad Dermatol*. 2016;74(2):303-308.
- Guaraldi F, Beccuti G, Gori D, Ghizzoni L. Management of endocrine disease: Long-term outcomes of the treatment of central precocious puberty. *Eur J Endocrinol*. 2016;174(3):R79-87.
- Light A, Obedin-Maliver J, Sevelius J, Kerns J. Transgender men who experienced pregnancy after female-to-male gender transitioning. *Obstet Gynecol*. 2014;124(6):1120-1127.
- Obedin-Maliver J, Makadon HJ. Transgender men and pregnancy. *Obstet Med*. 2016;9(1):4-8.
- Carlsen SM, Jacobsen G, Romundstad P. Maternal testosterone levels during pregnancy are associated with offspring size at birth. *Eur J Endocrinol*. 2006;155(2):365-370.
- Thiagaraj D, Gunasegaram R, Loganath A, Peh KL, Kottegoda SR, Ratnam SS. Histopathology of the testes from male transsexuals on oestrogen therapy. *Ann Acad Med Singapore*. 1987;16(2):347-348.
- Schulze C. Response of the human testis to long-term estrogen treatment: Morphology of Sertoli cells, Leydig cells and spermatogonial stem cells. *Cell Tissue Res*. 1988;251(1):31-43.
- Lubbert H, Leo-Rossberg I, Hammerstein J. Effects of ethinyl estradiol on semen quality and various hormonal parameters in a eugonadal male. *Fertil Steril*. 1992;58(3):603-608.
- van der Sluis WB, Bouman MB, de Boer NK, et al. Long-term follow-up of transgender women after secondary intestinal vaginoplasty. *J Sex Med*. 2016;13(4):702-710.
- Kreukels BP, Cohen-Kettenis PT. Puberty suppression in gender identity disorder: The Amsterdam experience. *Nat Rev Endocrinol*. 2011;7(8):466-472.
- Mahfouda S, Moore JK, Sifarikas A, Zepf FD, Lin A. Puberty suppression in transgender children and adolescents. *Lancet Diabetes Endocrinol*. 2017.
- Bird S. Consent to medical treatment: The mature minor. *Aust Fam Physician*. 2011;40(3):159-160.
- Bevan R. Gender dysphoria and intellectual disability 2016; <http://www.rcpsych.ac.uk/workinpsychiatry/faculties/intellectualdisability/newsletters/newsletterjanuary2016/genderydysphoriaandintellect.aspx>. Accessed July 20, 2017.
- Wylie K, Barrett J, Besser M, et al. Good practice guidelines for the assessment and treatment of adults with gender dysphoria. *Sex Relation Ther*. 2014;29(2): 154-214.
- Marinkovic M, Newfield RS. Chest reconstructive surgeries in transmasculine youth: Experience from one pediatric center. *Int J Transgend*. 2017;18(4):376-381.
- Milrod C, Karasic D. Age is just a number: WPATH-affiliated surgeons' experiences and attitudes toward vaginoplasty in transgender females under 18 years of age in the United States. *J Sex Med*. 2017;14(4):624-634.





Gender Service

The Royal Children's Hospital Melbourne
50 Flemington Road Parkville Victoria 3052 Australia
www.rch.org.au/genderservice