



Research Points: Hormone Therapy

Welcome to the *We Are Allies Research Points*. Here you will find research-based information about gender-affirming care and transgender, Two-Spirit, and nonbinary (TTNB) youth. These resources were developed to support the *We Are Allies project*.

In 2023, a team of researchers conducted an environmental scan to identify misinformation messages being shared online related to gender-affirming care for TTNB youth. The team reviewed published research to systematically gather accurate information that addresses common misinformation messages. These have been organized by topic and can be found in this series of Research Points. References are provided for people who would like to learn more.

If you have questions about accessing gender-affirming healthcare for yourself or a loved one, we encourage you to reach out to a trusted healthcare provider or organization.

Introduction to Hormone Therapy

For some trans, Two-Spirit, and nonbinary (TTNB) young people, hormone therapy is an important part of their gender-affirming care plan. Hormone therapy refers to the prescription of medications, such as testosterone and estrogen, to help a person align their body with their gender, as a treatment for gender incongruence.¹⁻³ Hormone therapy produces changes in the body associated with secondary sex characteristics, such as facial hair or breast growth.¹⁻³ Hormone therapy may be taken in various forms, including by injection, topical gel, patch, and oral medications. Doses and length of treatment are based on a person's gender health goals, their response to treatment, and their healthcare provider's recommendations. Gender health means living in the gender that feels most real or comfortable, and freely expressing that gender.⁴

Research about Hormone Therapy for TTNB Youth

The following section summarizes research findings showing that gender-affirming hormone therapy can improve TTNB youth wellbeing, is effective, and can be prescribed safely to TTNB youth.



Gender-affirming hormone therapy improves TTNB youth well-being

TTNB youth who access hormone therapy have improved mental health. Gender-affirming hormone therapy can provide relief from gender-related distress as a person's body becomes more aligned with their gender. TTNB youth taking hormone therapy report lower anxiety, depression, and suicidality.⁵⁻⁷

TTNB youth also have improved overall well-being and life satisfaction. Not only can mental health concerns improve with hormone therapy, but overall well-being can also improve. In a longitudinal study, TTNB youth who had accessed puberty blockers, hormone therapy, and gender-affirming surgery reported quality of life, life satisfaction, and happiness similar to peers of the same age in the general population.⁶ Recent research confirms improved life satisfaction among TTNB youth who receive hormone therapy.⁵

Hormone therapy is effective

Hormone therapy is effective in helping people meet their gender health goals. Some TTNB youth who experience gender-related distress access hormone therapy to make changes to their bodies. Hormone therapy is reliably used to address gender health/embodiment goals such as changing body fat distribution, body hair, and muscle mass.¹⁻³

Testosterone is effective in producing changes that support some TTNB youth to live more fully in their gender. Testosterone therapies can increase muscle mass in the body, increase facial and body hair growth, stop menstrual periods, and lower the voice.^{2,3} These and other effects of testosterone develop slowly and vary according to the dose taken, length of time taking the medication, and the genetics and metabolics of the person taking the medication.

Estrogen, sometimes prescribed in combination with other medications (testosterone blockers/anti-androgens), also supports some TTNB youth in reaching gender goals. Estrogen therapies can slow facial and body hair growth, shift body fat, make skin softer, and cause breasts to grow.¹⁻³ These and other effects of estrogen develop slowly and vary according to the dose taken, length of time a person takes the medication, and the genetics and metabolics of the person taking the medication.

Hormone therapy is prescribed safely for TTNB youth.

Research shows the risks of hormone therapy are low. For TTNB youth who opt to receive gender-affirming hormone therapy as part of their care, the benefits generally outweigh the risks.⁸⁻¹⁰ Research with TTNB youth taking hormone therapy shows that liver function, kidney function, cholesterol and blood pressure typically do not change. If there are changes, these usually stay in normal ranges for the person's experienced gender.^{1,11-17} Similar to sex hormones produced by the body, hormone therapy supports the development of strong bones during puberty.¹¹



As with all medications, there may be side effects. Medications, including gender-affirming hormone therapy, are prescribed when their expected benefits outweigh potential side effects.^{2,9,18} Care planning for hormone therapy should include discussion of possible side effects and ways to manage them.^{2,9,18} Options for managing side effects may include changing the way the medication is delivered or how often it is taken.⁹

Youth can talk with a healthcare provider about whether hormone therapy is right for them. Topics to discuss include benefits, risks, and preventative care. For TTNB youth who proceed with gender-affirming hormone therapy, the benefits generally outweigh the risks. However, youth and healthcare providers should discuss personal health history, family history, individual risks, and any recommended preventative care.^{9,18} For example, youth considering taking hormone therapy should discuss potential effects of hormone therapy on fertility with their healthcare provider.⁹

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