

# Gender-affirming hormone therapy may not increase CVD risk for transgender adolescents

20 May 2021



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Transgender adolescents are more likely to have at least one cardiovascular disease risk factor compared to cisgender (same gender as at birth) adolescents, according to preliminary research to be presented at the American Heart Association's Epidemiology, Prevention, Lifestyle & Cardiometabolic Health Conference 2021.

The United States has a growing population of [transgender](#) adolescents ages 12-21 who seek medical transition gender-affirming [hormone therapy](#). Gender-affirming hormone therapy involves taking estrogen or testosterone for transgender females or males, respectively. Previous research of cisgender adults indicates estrogen has cardioprotective effects, and an estimated 37% of healthy-weight cisgender adolescents have at least one atherosclerotic cardiovascular disease (ASCVD) risk factor.

"Gender-affirming hormone therapy is an option for transgender individuals, and yet very little research

currently focuses on the transgender adolescent community," said first author Ambur Staab, M.D.-candidate at the University of Utah School of Medicine in Salt Lake City. "Heart disease is the leading cause of mortality in the United States, and we understand, to some degree from previous research, that estrogen and testosterone can impact risk factors for [heart disease](#). We have yet to fully study how these hormones affect heart disease risk specifically in the transgender adolescent/young adult population, and we sought to get a better understanding through this study."

Researchers at the University of Utah conducted a retrospective analysis of 300 adolescent transgender patients who received gender-affirming hormone therapy at the Adolescent Medicine Clinic at Primary Children's Hospital in Salt Lake City, between January 2015 and December 2020. Among the 300 transgender adolescents, 50 transgender male and 50 transgender female patients were randomly selected for analysis of ASCVD risk factors when gender-affirming hormone therapy began and after one year of treatment.

Researchers found that among the 100 transgender patients analyzed:

- At baseline, 50% of transgender females and 66% of transgender males had at least one ASCVD risk factor;
- After one year of gender-affirming hormone therapy, 30% of transgender females and 70% of transgender males had at least one ASCVD risk factor; and
- While there was no significant change in ASCVD risk factors for transgender females, transgender males experienced a significant decrease in HDL cholesterol levels and significant increase in BMI for

after one year of gender-affirming hormone therapy.

"Gender-affirming hormone therapy appears to have greater benefits than risks for transgender adolescents and young adults," said Nicole L. Mihalopoulos, M.D., M.P.H, chief of the division of adolescent medicine at the University of Utah and principal investigator of the study. "For some people, these findings influence their decision to not to start gender-affirming hormones during adolescence. However, without gender-affirming hormone therapy, transgender individuals may experience worse gender dysphoria, depression, anxiety and possibly increased suicidal ideations."

These findings indicate that gender-affirming hormone therapy for transgender males may have a [negative impact](#) on some ASCVD risk parameters; however, the researchers note that baseline lab testing can help physicians counsel and educate patients about the benefits and risks of gender-affirming hormone therapy. Additionally, adverse health effects should be addressed with healthy lifestyle behavior changes first, as is standard care for any other [adolescent](#) and young adult who may have modifiable cardiovascular disease [risk factors](#).

Some limitations of the study include a small sample size and that most patients identified as non-Hispanic white individuals; therefore, the results are not generalizable to transgender individuals from diverse racial or ethnic groups. In addition, follow-up data was only collected for one year. While researchers note the strengths in their preliminary findings, it is not possible to establish a causal relationship between gender-affirming [hormone therapy](#) and ASCVD risks factors without a larger study that includes more follow-up data and for a longer time period after treatment.

Provided by American Heart Association

APA citation: Gender-affirming hormone therapy may not increase CVD risk for transgender adolescents (2021, May 20) retrieved 15 June 2021 from <https://medicalxpress.com/news/2021-05-gender-affirming-hormone-therapy-cvd-transgender.html>

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