

# Sex reassignment surgery may be better for transgender women's health than hormones only

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Emerging evidence suggests that transgender women have a higher risk of developing cardiovascular disease and type 2 diabetes compared with men and women in the general population. A preliminary study to be presented at Cardiovascular, Renal and Metabolic Diseases: Physiology and Gender compares the risks of metabolic disease of the two therapies that aid the transition from male to female: hormone replacement with female hormones and bilateral orchiectomy, which is the surgical removal of both testicles. The study finds that transgender women who received only hormone therapy had poorer metabolic health than transgender women who underwent sex reassignment surgery in addition to receiving hormone therapy. Moreover, bilateral orchiectomy may be metabolically protective.

The primary indicator of poor metabolic health is insulin resistance. Insulin is a hormone that allows cells to take up glucose (sugar) from the blood and use that glucose as energy to function. Insulin resistance is almost always present in individuals with [fatty liver disease](#). Fatty liver disease results from excess accumulation of fat in the liver (hepatic steatosis), leading to inflammation and damage to the liver. Studies have suggested that non-alcoholic fatty liver disease can increase the risk of heart disease. Whether insulin resistance causes fatty [liver disease](#), or the reverse, is still under investigation.

Researchers from Cedars-Sinai Medical Center in Los Angeles measured insulin resistance and fat accumulation in the liver of four transgender women who underwent bilateral orchiectomy and were taking female hormones and eight transgender women who were only using female hormones. The researchers found that transgender women only taking hormones exhibited insulin resistance and had greater fat accumulation in the

liver. According to lead researcher Michael Nelson, PhD, transgender women with the highest level of testosterone had the poorest metabolic health. The researchers also observed that the amount of [fat accumulation](#) in the liver was related to degree of insulin resistance.

The data suggest that fatty liver and [insulin resistance](#) are more prevalent in transgender women taking only female hormones. Transgender [women](#) who have undergone bilateral orchiectomy appear protected against these conditions, Nelson said.

**More information:** "A pilot study exploring metabolic dysfunction in trans-sexual women: Novel insight from magnetic resonance spectroscopy" Cardiovascular, Renal and Metabolic Diseases: Physiology and Gender.

Provided by American Physiological Society

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