Are Trans Women and Men at Higher Risk for Breast Cancer?

Study finds the risk of breast cancer rises in transgender women taking hormone therapy but falls in trans men.

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Transgender women who are taking gender-affirming hormone therapy face a rising risk for breast cancer as they transition, while transgender men see their risk decline, according to a recent Dutch study.

Trans women had a dramatically higher likelihood of developing breast cancer compared with cisgender (non-transgender) men but a lower risk than cisgender women. The opposite was true for trans men. Overall rates were low, however, and the study authors recommended that trans women and trans men who have not had top surgery should follow the same screening guidelines as cisgender women.

A majority of breast tumors carry hormone receptors for estrogen and progesterone, which encourage cancer growth. A rise in female hormone levels during puberty or when trans women start taking hormones triggers the development of milk glands and ducts and build-up of fat in the breasts. Higher cumulative estrogen exposure over a lifetime—for example, in cisgender women who begin menstruation early, those with no pregnancies and menopausal women who use hormone replacement therapy—is associated with elevated breast cancer risk.

Trans women who take feminizing hormones continuously may have higher levels of estrogen than cisgender women do at the low point of their menstrual cycle. Trans men remain susceptible to cancer because top surgery is not the same as a total mastectomy, as the nipples and some breast tissue are left to form a natural-looking male chest.

Christel de Blok, a PhD candidate at the Centre of Expertise on Gender Dysphoria at Vrije Universiteit Medical Center in Amsterdam, and colleagues investigated the incidence and characteristics of breast cancer among transgender people in the Netherlands compared with the general Dutch population.

This retrospective cohort study included 2,260 adult trans women (that is, they were designated male at birth but identify as women) and 1,229 adult trans men (designated female at birth but identify as men) who received gender-affirming hormone therapy at a specialized gender clinic in

Amsterdam between 1972 and 2016. Most trans women were treated with a combination of estrogen (estradiol pills, patches, gel, injections or implants) and anti-androgen drugs (for example, spironolactone), the latter of which were often stopped if the testicles were removed. Trans men were treated with testosterone pills, gel or injections.

During nearly 40,000 person-years of follow-up, 15 cases of invasive breast cancer and three cases of noninvasive cancer were diagnosed among the trans women. This reflects more than a 46-fold higher incidence than that of cisgender men but a 70% lower rate than cisgender women. Trans women developed breast cancer at a median age of 52—below the average of 61 years for Dutch cisgender women—and they had been on feminizing hormone therapy for a median of 18 years.

A majority of tumors in trans women originated in the ducts of the breast and most were estrogen- and progesterone-receptor positive, as is the case for cisgender women. About 8% of tumors were HER2 (human epidermal growth factor receptor 2) positive, a bit lower than the 15% to 20% typically seen in studies of cisgender women but higher than the 2% expected for male breast cancer.

Just four cases of invasive breast cancer were identified among the 1,229 trans men over nearly 15,000 person-years of follow-up. This was 80% lower than the expected incidence for cisgender women but nearly 60-fold higher than the rate for cisgender men. The median age at breast cancer diagnosis among the trans men was 46, and they had been taking masculinizing hormones for a median of 15 years. One case was discovered during top surgery, and the others several years thereafter.

The researchers speculated about why trans women might develop breast cancer at a younger age and with a relatively short—compared with cisgender women—duration of exposure to female hormones. They suggested that some people might have had preexisting, undiagnosed hormone-sensitive cancer before treatment, which began to grow when stimulated by feminizing hormones. Another reason may be that anti-androgen therapy and the removal of the testicles reduces levels of androgens, or masculinizing hormones, that inhibit breast cancer development and growth.

“Based on this study, we conclude that the absolute overall risk of breast cancer in transgender people remains low and therefore it seems sufficient for transgender people using hormone treatment to follow screening guidelines for cisgender people,” the study authors concluded.

Current guidelines from the United States Preventive Services Task Force say women should receive mammograms every other year starting at age 50, though some experts favor annual screening starting at 45.

These same recommendations appear to be appropriate for trans women and trans men who have not had top surgery, according to the authors. Such individuals should undergo “the same intensified breast surveillance as their close female relatives” if they have a family predisposition. Older trans people may consider discontinuing hormone therapy, which from that point on might decrease breast cancer risk, they suggested.

Click here to read the study abstract.

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