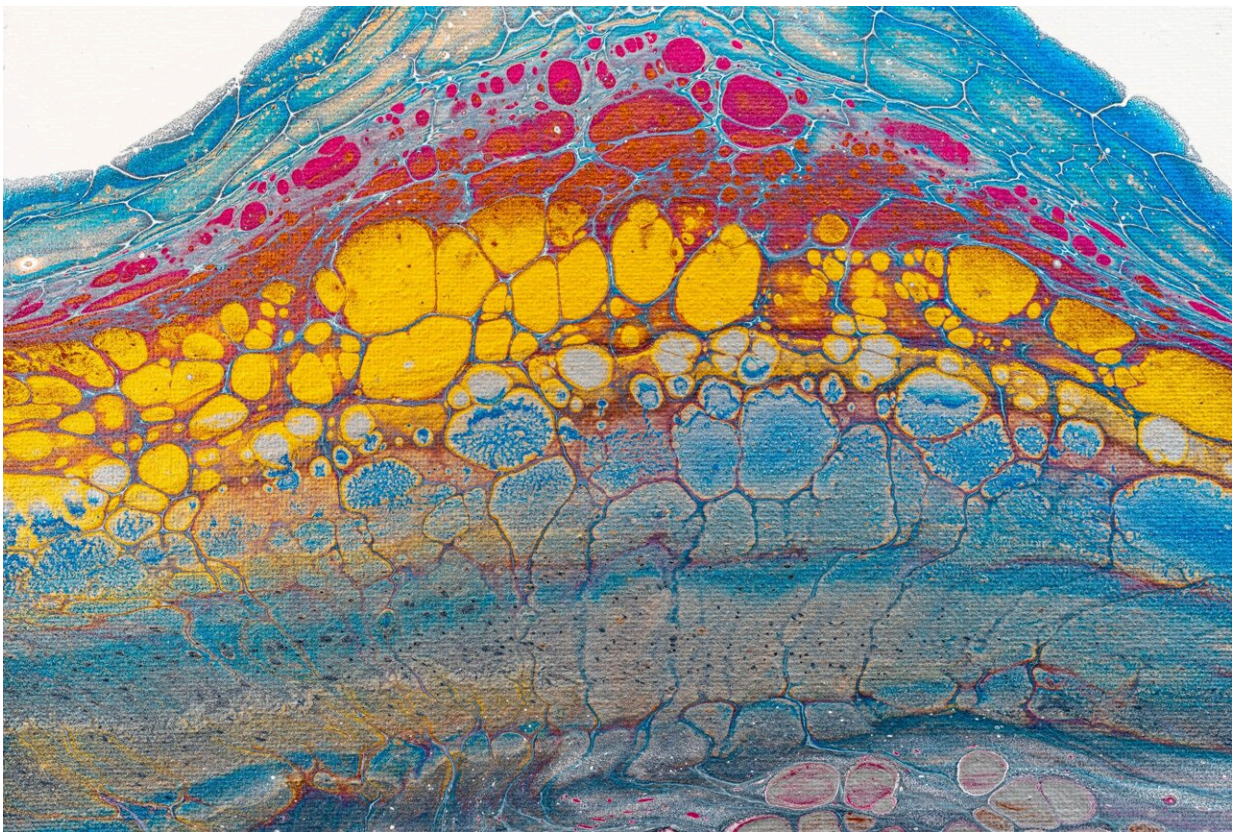


What breast cancer risk assessments can tell you

March 20 2024, by Justin Stebbing



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Actress Olivia Munn recently shared on social media that she had undergone a double mastectomy after being diagnosed with [luminal B breast cancer](#). In [an Instagram post](#), Munn explained how she had been diagnosed with the fast-growing cancer.

The actress had initially undergone [genetic testing](#) in an effort to be proactive about her health. Munn tested negative for mutations of the BRCA gene, which is associated with a [much higher risk of breast cancer](#). Still, Munn's doctor decided to calculate her "Breast Cancer Risk Assessment Score" by looking at other factors known to increase risk of the disease.

The test revealed Munn had a 37% risk of developing [breast cancer](#) in her lifetime. Munn subsequently decided to undergo further testing, which revealed she had cancer. Many people reading this story may be wondering whether they should also have a breast cancer risk assessment done—and what this would entail.

In general, a breast cancer risk assessment involves evaluating various factors that can contribute to a person's likelihood of developing breast cancer. Some factors that would be taken into consideration include:

1. Age

Age is a major risk factor for breast cancer. The older you are, the more likely you are to [develop breast cancer](#).

About 80% of breast cancer cases occur in woman over 50, who have been through the menopause. This is one reason why all women aged 50-71 should be [screened for breast cancer](#) every three years.

2. Family history

Having a mother, sister or daughter (referred to as a "first-degree relative") diagnosed with breast cancer approximately [doubles the risk of breast cancer](#). This risk is even higher the more close relatives you know who have had breast cancer, or if a relative developed breast cancer under the age of 50.

While [family history](#) of breast cancer on your mother's side is associated with greater risk, history of breast cancer on the father's side shouldn't be [dismissed](#) either.

3. Genetic mutations

Mutations in genes such as [BRCA1 and BRCA2](#) are associated with a higher risk of breast cancer and ovarian cancer, with these cancers occurring at younger ages.

About [10-13% of women will develop breast cancer](#) at some point in their lives and most of these cases do not have predisposing mutations, [such as changes in BRCA1 or BRCA2 genes](#). By contrast, most women who inherit a harmful BRCA1 or BRCA2 gene variant [will develop breast cancer](#) by 70-80 years of age if they aren't followed up and treated properly, for example with bilateral (meaning both sides) mastectomies.

But these may not be the only genetic mutations which increase breast cancer risk. In Munn's case, although she didn't have a BRCA mutation, she may have had other genes which we're now understanding have a role—such as the [ATM gene](#) or the [CHEK2 gene](#).

Importantly, genetic tests are now much quicker and easier to access than they used to be—and [can often be accessed](#) on the NHS.

4. Medical history

Previous breast biopsies and benign breast conditions (such as fibroadenomas or pre-cancerous lesions in the [breast tissue](#)) would all be taken into account as they can be associated with an increase breast cancer risk.

A doctor would also look at a person's hormonal and reproductive health, looking specifically at when they had their [first period](#), when they had their [first full-term pregnancy](#) and if they were [pre or post-menopausal](#).

Research [published by my team](#) explored the mechanisms by which delaying a first pregnancy to the late-30s increases the [risk of breast cancer](#). We discovered that changes that occur in the breast's tissues during pregnancy can ultimately trigger more mutations to occur in the breast's tissue over time.

5. Breast density

Having very dense breasts is a risk factor for breast cancer and is associated with a [doubling of risk](#).

A person is considered to have [dense breasts](#) if they have high amounts of glandular tissue and connective tissue and low amounts of fatty breast tissue. [Breast density](#) can only be seen on mammograms.

6. Lifestyle

Factors such as whether a person [smokes](#), what their [diet is](#), how [physically active](#) they are, if they're [obese](#) and if they take [hormone replacement therapy](#), may all be linked with greater risk of breast cancer. Your doctor will take all of these into account when assessing your risk.

[Alcohol consumption](#) is a particularly important factor, as excess alcohol use is associated with greater risk. Even moderate [alcohol consumption](#) can [increase the risk by 30-50%](#).

7. Radiation exposure

Having previously [undergone radiation therapy](#) for lymphoma, especially during childhood and adolescence, may increase the risk of breast cancer—though this is rare.

It's important to note that this is only referring to radiation treatment. Routine X-rays should not increase your breast cancer risk.

Caveats and limitations

This isn't an exhaustive list and other factors can be important. For example, [diabetic women](#) are up to 20% more likely to develop postmenopausal breast cancer than older, non-diabetic women—but this may be related to obesity.

Calculating breast cancer risk typically involves integrating these factors into risk assessment models—sometimes called risk calculators. These models use statistical algorithms to estimate a person's likelihood of developing breast cancer over a period of time by giving the average risk of breast cancer for a group of women with similar risk factors.

For example, say it gives a woman a five-year risk of 1%. This means the tool estimates 1% of women who have similar risk factors will develop breast cancer over the next five years. However, it can't predict which of these women will get breast cancer.

While these risk assessment tools can provide valuable information, they

are not perfect predictors. Personalized medical advice should always be sought from [health care professionals](#), and you should have more than one discussion before undergoing any preventative treatment.

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