Genetic Testing May Benefit More Patients With Melanoma

Certain patients with melanoma could benefit from genetic testing to identify mutations and potential risk for other types of cancer.

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At a Glance

- Researchers found people diagnosed with melanoma at a young age or with multiple melanomas were more likely to carry a genetic mutation.
- The findings suggest that certain patients with melanoma could benefit from genetic testing to identify mutations and potential risk for other types of cancer.

Melanoma is the deadliest form of skin cancer. Mutations in certain genes may make people more likely to develop melanoma. Germline testing—a type of genetic analysis—is used to detect such inherited mutations in DNA. The testing is recommended for some cancer patients, and it can reveal if the patients' close relatives may also be at risk.

Many previous studies of genes known to increase the risk of melanoma focused on families with a strong history of the disease. However, less is known about how common these mutations are in people without a family history of melanoma.

A research team led by NIH's Dr. Michael Sargen set out to take a closer look. They used genomic data linked to health records from almost 700,000 people enrolled in two large studies in the U.S. and United Kingdom. They evaluated data from healthy individuals and those with melanoma; selections were not made based on family history. Study results were published on May 27, 2026, in JAMA Dermatology.

The researchers focused on eight genes known to increase the risk of melanoma. They found that mutations in these genes were relatively uncommon in the general population. Between 0.5% and 0.9% of people studied carried a harmful mutation in one of these melanoma risk genes.

However, mutations were more prevalent among individuals that did have melanoma. Those

younger than age 40 with a single melanoma, and those of any age with multiple melanomas were much more likely to have a harmful mutation.

The researchers also discovered links between some of the eight melanoma genes and other types of cancer. They found individuals with some of the melanoma genes also had an increased risk for prostate cancer, breast cancer, and myeloma.

Doctors usually recommend genetic testing if a person has a 2.5% or greater risk of carrying a mutation in a cancer risk gene. The study suggests that people diagnosed with melanoma at a young age or who develop multiple melanomas meet this risk threshold. As such, they may benefit from genetic testing to identify potential mutations.

If future studies confirm the mutations are also linked to other cancers, these findings could broaden understanding of inherited cancer risk. They could also help refine recommendations for genetic testing and cancer screening.

“If someone with melanoma has one of these mutations, other tissues may face an elevated cancer risk,” says Sargen. “Germline testing can help clinicians identify that risk sooner and encourage closer monitoring.”

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