

Researchers identify genes that cause melanoma

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People with two copies of both gene variants have double the risk of melanoma

Scientists from the Queensland Institute of Medical Research (QIMR) have found two new genes that together double a person's risk of developing melanoma.

As part of an international study, a team at QIMR, led by Professors Nick Hayward and Grant Montgomery, studied the [genes](#) of almost 6,000 people together with their mole count. Specific changes in two genes were found to make people more susceptible to developing moles. The researchers went on to show, in another 4,000 people, the same two genes increased the risk of developing [melanoma](#) - the most deadly form of [skin cancer](#).

"These are the first genes found to increase melanoma risk by influencing the number of moles a person has," explained Professor Hayward. "This finding improves our understanding of the genetics of melanoma and therefore the [molecular pathways](#) that lead to its development."

"It has long been known that having a large number of moles is the biggest risk factor. Therefore we predicted we would find genes linking moles and melanoma. We now have conclusive [genetic evidence](#) that having a large number of moles increases an individual's risk of developing melanoma."

The study found that people who carry one of these two gene variants have a 25% increased chance of developing melanoma, while for individuals carrying both variants their risk is doubled.

"In the long term, this research will be useful in developing screening techniques, and will also allow us to identify potential new [drug targets](#) and ultimately develop new therapies to treat melanoma," said Professor Hayward.

Moles are normal but people should seek advice from their doctor if they observe any changes in size, colour or shape. People with lots of moles are at a higher risk of developing melanoma and should therefore take extra care to avoid overexposure to [ultraviolet radiation](#).

Australia has the highest incidence of melanoma in the world with more than 10,000 new cases and 1000 people dying from the disease every year. Queensland has the highest incidence of any state with seven Queenslanders diagnosed with melanoma every day. More than one in 20 Queenslanders is expected to develop melanoma during their lifetime.

The study was published today in *Nature Genetics*.

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