

# First evidence that obesity gene is risk factor for melanoma

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The gene most strongly linked to obesity and overeating may also increase the risk of malignant melanoma – the most deadly skin cancer, reveals research published in *Nature Genetics*.

Cancer Research UK scientists at the University of Leeds showed that people with particular variations in a stretch of DNA within the FTO gene, called intron 8, could be at greater risk of developing melanoma.

Variations in a different part of the FTO gene, called intron 1, are already known to be the most important [genetic risk](#) factor for obesity and overeating. These variants are linked to [Body Mass Index](#) (BMI) – a measure of a person's shape based on their weight and height. Having a high BMI can increase the risk of various diseases including [type 2 diabetes](#), [kidney disease](#), womb (endometrial) cancer and more.

But this research is the first to reveal that the gene affects a disease – melanoma – which isn't linked to obesity and BMI.

The results suggest that FTO has a more wide-ranging role than previously suspected, with different sections of the gene being involved in various diseases.

Study author, Dr Mark Iles, Cancer Research UK scientist at the University of Leeds, said: "This is the first time to our knowledge that this major obesity gene, already linked to multiple illnesses, has been linked to melanoma. This raises the question whether future research will reveal that the gene has a role in even more diseases?"

"When scientists have tried to understand how the [FTO gene](#) behaves, so far they've only examined its role in metabolism and appetite. But it's now clear we don't know enough about what this intriguing gene does.

"This reveals a hot new lead for research into both obesity-related illnesses and skin cancer."

The researchers examined tumour samples in more than 13,000 melanoma patients and almost 60,000 unaffected people from around the world.

[Malignant melanoma](#) is the fifth most common cancer in the UK with around 12,800 new cases and around 2,200 deaths each year.

Dr Julie Sharp, Cancer Research UK's senior science information manager, said: "These are fascinating early findings that, if confirmed in further research, could potentially provide new targets for the development of drugs to treat melanoma.

"Advances in understanding more about the molecules driving skin

cancer have already enabled us to develop important new [skin cancer](#) drugs that will make a real difference for patients.

"But it doesn't detract from the importance of reducing your risk of the disease by enjoying the sun safely on winter breaks abroad and avoiding sunbeds. Getting a painful sunburn just once every two years can triple the risk of melanoma."

**More information:** Iles, M et al, A variant in FTO shows association with melanoma risk not due to BMI (2013) *Nature Genetics*. [DOI: 10.1038/ng.2571](#)

Provided by Cancer Research UK

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