

Skin cancer: More people die from types that aren't melanoma, says surprise new finding

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Credit: AI-generated image ([disclaimer](#))

If you mention skin cancer, most people think of melanoma—the deadliest skin cancer. The other ones are pretty benign, right?

Not so. Worldwide, more people are now dying of non-melanoma skin cancer (NMSC) than melanoma, a [new study has found](#).

The study, by researchers at the University Hospital of Nice in France, used [patient data](#) collected by the International Agency for Research on Cancer (part of the World Health Organization). It showed that while melanoma caused 57,000 deaths globally in 2020, non-melanoma skin cancer accounted for even more, with 63,700 people losing their lives.

In some ways, the study upends [conventional wisdom](#) on how much of a threat to life NMSC represents. NMSC is considered to be less serious than other types of cancer—rarely fatal and often left out of national cancer registries' reports of overall cancer numbers. However, "rarely fatal" is not the same as "never fatal," and if a sufficiently large number of people develop this type of cancer, then that can add up to a lot of deaths, as this new report shows.

Melanoma and NMSC share some features, with both being closely linked to [exposure to ultraviolet radiation](#) (UV) from either the sun or tanning beds. UV is able to produce cancer-causing mutations that drive the formation of both melanoma and NMSC.

The past several decades have seen [large increases](#) in the incidence of both types of cancer, as people's holiday destinations and attitudes to tanning have changed. Most of these cancers occur in white people, but people with darker skin tones can also get [skin cancer](#). Unfortunately, it [often goes undiagnosed](#) due to a lack of awareness in [both patients and dermatologists](#).

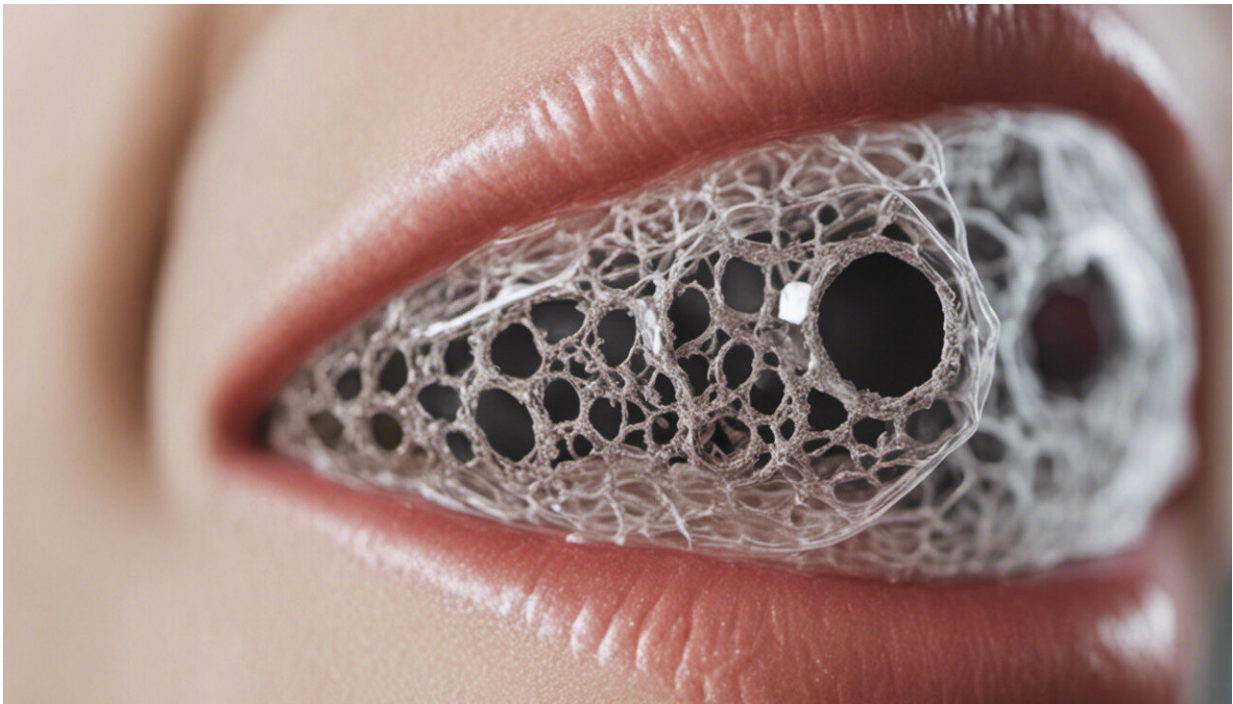
Melanoma and NMSC do have some important differences, though. While UV is a risk factor for both, NMSC is more associated with chronic exposure throughout a person's lifetime. Consequently, tumors often arise on the face and head. In contrast, occasional severe sunburns [are more closely linked to melanoma](#), particularly on the trunk.

There are two main types of NMSC: [basal cell carcinoma](#) (BCC) and

[squamous cell carcinoma](#) (SCC). Both arise from a type of skin cell called a keratinocyte.

Keratinocytes are the main type of cells that make up the epidermis, the outer layer of our skin. Mutations in keratinocytes, caused for example by exposure to UV, can override the internal checks and balances that usually prevent cells from uncontrollably dividing, resulting in a tumor forming.

In contrast, melanomas occur as a consequence of cancer-activating mutations in a different type of skin cell called a melanocyte. There are about ten times fewer melanocytes than keratinocytes in the epidermis, but they play an important role in protecting our skin from damage by producing melanin. Melanin is the pigment that determines our normal skin color and which is produced in greater amounts after exposure to UV, causing a tan.



Credit: AI-generated image ([disclaimer](#))

How deaths occur

Most cancer deaths are [caused by secondary tumors](#) that arise when cells from the original tumor break away and spread, or metastasize, to distant sites in the body. Skin cancers are no exception. However, metastasis is a very challenging process for cancer cells. They first need to invade surrounding tissue, then survive the stress of transport around the bloodstream before finally being able to establish a colony in an environment that is quite different to the skin.

Melanoma cells are much more effective at achieving all of the steps of metastasis than NMSC cells are. For example, melanoma cells share some characteristics with cells found in the brain and so can readily adapt to the brain as a new environment, forming secondary tumors there.

If it's the case that NMSC is far less likely to form dangerous secondary tumors, then why is it that it causes more deaths than melanoma? This partly comes down to the numbers involved.

While we have a pretty good idea of how many people across the world get melanoma each year, the numbers for NMSC are much less clear. However, we do know that the current official statistic of 1.2 million cases per year (compared to 325,000 for melanoma) is likely to be a substantial underestimate. This is because of [inconsistencies](#) in how data on NMSC cases are gathered and reported between different countries.

These gaps in the data mean that it is quite difficult to get a full picture of trends in the number of cases of NMSC and how likely they are to

cause death. Despite this gap, a particularly worrying part of this latest report is its conclusion that where you live in the world has a big impact on how likely you are to survive an NMSC diagnosis.

Like all cancers, the earlier a NMSC can be diagnosed and treated, the better the chance of a positive outcome. It remains to be determined whether a tendency to regard NMSC as relatively innocuous has played any role in this trend, or whether it's entirely due to other factors such as having ready access to diagnosis and treatment.

An optimistic view

Another, more optimistic, reason for NMSC overtaking melanoma as a cause of [cancer](#) death may be the [significant progress](#) made in treating melanoma over the past few years.

For example, after decades of increases in the annual number of melanoma deaths, the UK has recently turned a corner and [fewer people are now dying](#), despite the number of cases continuing to rise. This trend is thanks to the availability of a range of [new targeted treatments](#) for [melanoma](#) that are saving lives every day.

However, prevention is always better than treatment and it's clear that more still needs to be done to prevent these cancers from occurring in the first place. This can be achieved by ensuring that sun protection messages reach everyone at risk.

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