Patient information from BMJ

Last published: Mar 01, 2022

Skin cancer (melanoma): how is it diagnosed and treated?

Melanoma is a type of skin cancer that usually starts within a mole or a dark spot on your skin. If you find it early before it spreads, a simple operation to remove it works well and usually leads to a cure.

This information is about treating melanoma that has not spread to other parts of the body (called non-metastatic melanoma). You can use our information to talk to your doctor and decide what treatments are best for you.

To learn more about melanoma and its warning signs, see the leaflet *Skin cancer (melanoma): what is it?*

How is melanoma diagnosed?

If your doctor thinks you could have a melanoma you will probably be referred to a specialist skin doctor, called a **dermatologist**. The dermatologist will examine your skin, possibly with a special magnifying tool called a **dermatoscope**.

If the dermatologist thinks you may have a melanoma, he or she will do a **biopsy**.

- A biopsy usually involves removing all of the mole, along with a small amount of normal-looking tissue around it, to be tested for cancer.
- But sometimes a dermatologist will remove only part of the mole for testing: for example, if the mole is large and the dermatologist wants to be sure it is cancer before completely removing it.
- You'll have a local anaesthetic to numb the area of the biopsy so you won't feel any pain.

The removed tissue will be checked by a doctor called a **pathologist** to see if it is cancer. If it is, the pathologist will also look at how thick it is. The thickness is measured by how far down into your skin the melanoma grows.

If your melanoma is very thin and was completely removed during the biopsy, you may not need any further treatment. But thicker melanomas usually require additional surgery, to be certain that all of the cancer cells are removed.

How is melanoma treated?

Standard surgery

You'll have a local anaesthetic that will numb the area around the melanoma so you won't feel any pain. The doctor will then cut out the melanoma (if it hasn't already been removed in the biopsy) and some of the normal-looking skin around it.

Taking out the skin from around the melanoma is called **taking a margin**. The doctor does this to make sure that all the cancer cells are gone. This means there's less chance that the melanoma will come back.

The amount of skin that's taken away depends on how thick your melanoma is.

- If you have a **very thin melanoma** that hasn't grown below the top layer of the skin (called **melanoma in situ**), you will probably have about half a centimetre of skin removed from around the melanoma.
- If you have a **thin melanoma** (less than 1 millimetre thick) you will probably have about 1 centimetre of skin removed from around the melanoma.
- If you have an **intermediate-thickness melanoma** (1 to 4 millimetres thick) you will probably have 1 to 2 centimetres of skin removed from around the melanoma.
- If you have a **thick melanoma** (more than 4 millimetres thick) you will probably have 2 centimetres of skin removed from around the melanoma.

After the surgery your doctor will close the wound, probably with stitches. You'll be left with a scar after your stitches are gone. If the wound is bigger you may need to have a piece of skin taken from another part of your body and placed over the wound to help it heal.

A pathologist will examine the tissue removed during the surgery to check whether the edges of the tissue contain no cancer cells (this is called a clear margin). This suggests that all of the cancer has been removed.

Surgery with less scarring

Doctors sometimes recommend surgery that limits how much tissue they need to remove around the melanoma. This can reduce scarring, which may be important to you if the melanoma is on your face, neck, or another visible part of your body.

This type of surgery is usually an option only for people who have a very thin melanoma (melanoma in situ). It's called **Mohs micrographic surgery**. It's done like this:

- After the main part of the melanoma has been removed, the doctor takes out a very thin layer of skin from around it. This layer of skin is then checked for cancer cells using a microscope.
- If there are cancer cells, the doctor takes out another very thin layer of skin from where the cancer cells were found and this is checked under the microscope. When only normal cells are found, the operation stops.

This type of surgery is done in one appointment. However, some research suggests it may not be as good as other types of surgery at catching all of the cancer cells and preventing the melanoma from coming back.

Alternatives to surgery

Some people have other treatments instead of surgery, such as **radiotherapy** or treatments that they put on their skin (one is called imiquimod).

But these treatments don't work as well as surgery, as they don't provide a way to check whether all the cancer cells are gone after treatment.

These treatments are usually only an option if someone has a very thin cancer (melanoma in situ).

Further treatments

If your doctor thinks your cancer may have spread you will need further tests. Your doctor will check the lymph nodes (small glands) near your melanoma. If these seem swollen or hard, the cancer may have spread to them.

Your doctor may advise you to have **surgery to remove the lymph nodes**. The nodes will then be checked for cancer by a pathologist.

If your lymph nodes seem normal, your doctor may not want to remove them straight away. Instead you may be offered a **sentinel node biopsy.**

This test finds the lymph node (or sometimes nodes) that your melanoma would drain into first (called the sentinel node). This node is then removed and tested for cancer cells.

If there are no cancer cells in the sentinel node then it is unlikely that there will be cancer cells in other lymph nodes. If there are cancer cells in the sentinel node you may need surgery to remove all the nodes in the area.

After surgery you may be referred to a cancer specialist (an **oncologist**). If the cancer has spread you may need treatment with **chemotherapy**, **radiotherapy**, or **drugs that boost your immune system**.

Things you can do to help yourself

If you've had a melanoma, you will have regular skin checks with a dermatologist to try to catch any new cancers early on.

But it's important that you also check your own skin regularly, ideally using a full-length mirror as well as a hand mirror for areas that are hard to see. Your spouse or partner can help.

You should become familiar with the moles on your body so you can spot any changes, including any new moles that appear. See your doctor if you notice anything unusual.

Although doctors are not exactly sure what causes melanoma, the sun plays a big part. So it's a good idea to stay out of the sun, especially in the middle of the day when UV rays are strongest. This means staying indoors or in the shade as much as possible.

If you are in the sun, consider covering up any exposed skin with clothing made of a tightly woven fabric, and wearing a hat and sunglasses with UV protection.

If you have to be outside with exposed skin, make sure you wear a sunscreen with a sun protection factor (SPF) of at least 30, even on cloudy days.

- The sunscreen should protect against two kinds of UV light: UVA and UVB.
- Apply the sunscreen 20 minutes before going outdoors, and reapply it at least every two hours - or more frequently if you've been in water or sweating. Don't skimp on the sunscreen: always apply a generous amount.
- Try not to stay in the sun longer just because you're using sunscreen. If you use sunscreen to stay in the sun longer, you might actually increase your chances of getting melanoma.

You should also avoid other sources of UV light, such as tanning beds and sun lamps.

What to expect in the future

If you find a melanoma early there's a good chance that you'll be cured after surgery.

In people whose melanoma has not spread, more than 99 in 100 are still alive five years after treatment.

In people whose cancer has spread to the lymph nodes, about 70 in 100 are still alive five years later.

Note: these numbers don't mean that people are only expected to live for five years after treatment. It's just that studies longer than five years are hard to do, because it's hard to keep track of people for longer periods.

No one can say for certain whether your melanoma will come back and cause problems in the future. But, in general, the smaller and thinner your melanoma is when you have surgery, the less likely it is to come back.

What did you think about this patient information guide?

Complete the online survey or scan the QR code to help us to ensure our content is of the highest quality and relevant for patients. The survey is anonymous and will take around 5 minutes to complete.

BMJ Group