



# Melanoma

## Key Terms

- **Cancer:** a group of diseases where cells begin to divide and grow uncontrollably, forming tumours, that may invade other parts of the body.
- **Melanoma:** a cancer mainly affecting the skin, where a tumour is formed from cells called melanocytes. Rarer forms can occur in the eyes or mucous membranes like the mouth.
- **Melanocytes:** cells that are mainly found in the top layer of the skin which make melanin, the pigment that gives your skin, hair and eyes colour, and protects your body from UV rays.
- **UV radiation:** invisible radiation with a wavelength shorter than that of visible light, but longer than X-rays. It is found in sunlight, and is responsible for sunburn and making vitamin D in skin.

## What's all the fuss about?

Melanoma is a particularly aggressive type of skin cancer, and reasonably well known. But it may not be taken as seriously as other cancers, because people imagine it is easily treatable, and may think of melanomas as being little different from harmless moles until it is too late. What can researchers, doctors, health authorities and industry do about this? How can we prevent, diagnose and treat melanoma as effectively as possible?

## Statistics<sup>1</sup>

- The number of cases of melanoma is rising faster than that for any other major cancer.
- An estimated 69,000 new cases of melanoma were diagnosed in 2008 in the EU-27 countries.
- In 2008, over 11 out of every 100,000 EU citizens were diagnosed with melanoma, and over two in every 100,000 died from it.
- Denmark, Sweden and the Netherlands have the most cases of melanoma in the EU.
- In 2008, the number of new cases among Danish women was more than double the EU average.

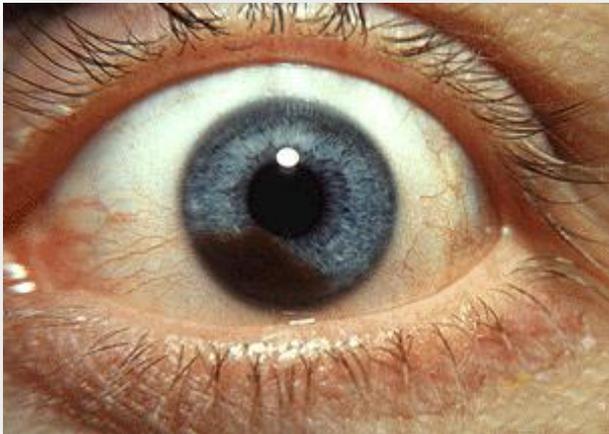
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<sup>1</sup>Cancer Research UK: <http://info.cancerresearchuk.org/cancerstats/types/skin/incidence/uk-skin-cancer-incidence-statistics>

# Science Q&A

## What is melanoma?

Melanoma is a very serious form of skin cancer. It most commonly affects adults and also sometimes children and teenagers. Melanoma can also affect body parts other than the skin: the eyes, mouth or bowel, for example.



*Melanoma can affect the eye*

The first signs of melanoma are usually a change in the size, shape, colour or feel of a mole on your body.

Men most often find melanoma around their midriff or on the head or neck. Women more often get it on their arms or legs.

As with other cancers, melanoma is best treated when it is diagnosed early as it can spread quickly to other parts of the body.

### *Sun protection and melanoma*

*To protect your eyes and skin from the sun's UV rays, and reduce your risk of developing melanoma, doctors normally recommend:*

- *spending time in the shade between 11am and 3pm when the sun is at its strongest;*
- *covering up with clothes, sunglasses and a hat;*
- *applying sunscreen to exposed skin;*
- *using sunscreen with a sun protection factor (SPF) of 35 or more, within its expiry date;*
- *using a sunscreen which protects against both UVA and UVB rays;*
- *applying liberally to clean, dry skin, and re-applying at least every two hours.*

### *Sunbeds and melanoma*

*Most doctors do not recommend the use of sunbeds or sunlamps. They can be more dangerous than natural sunlight because they use a concentrated source of UV radiation.*

*Your risk of developing melanoma is increased by 75% if you begin using these devices before the age of 30.*

*It is even more important to avoid using sunbeds and sunlamps if you are in one of the high-risk groups for developing melanoma.*

## What increases the risk of melanoma?

The following factors can increase the risk of melanoma:

**UV light exposure:** this weakens the skin's protective system in a number of ways. It causes mutations in the skin's DNA, stimulates cells to grow, reduces immunity and forms toxic molecules in the skin. A history of sunburn doubles your risk of melanoma.

Your risk is also increased if you use sunbeds and other tanning devices.

**Sensitivity to sunlight:** People with fair, freckly skin, blue eyes, red hair, or a high number of moles on the skin are at a significantly greater risk of developing melanoma.

**Genetic factors:** If you have a family history of melanoma you are at a higher risk of developing the disease. One in

ten of all melanoma patients have a first or second degree relative who has had the disease.

**A weakened immune system:** Patients who have been receiving an organ transplant or who are living with HIV may be at a greater risk, as their immune system is weakened.

## How is melanoma diagnosed?

A mole or mark on the skin might be a melanoma if it falls into one of the following categories:

- A. Asymmetry:** The two halves look different.
- B. Border:** The outline is jagged or irregular.
- C. Colour:** Shades of black, brown and other colours can be seen.
- D. Diameter:** Usually larger than a pencil eraser (6mm), but can also be smaller.
- E. Evolution:** Often changes in size, shape or colour over a short period of time.



If a mole shows one or more of these signs, doctors may decide to surgically remove the mole and send the sample to a pathologist to check if it is cancerous. The pathologist's job is to examine tissues, check the accuracy of lab tests and interpret the results, so patients can be diagnosed and treated.

## How do doctors treat melanoma?

This depends on the type of melanoma, and how long it has had to develop. But doctors can remove the tumour surgically, test to see if the cancer has spread to other parts of the body, and see whether more surgery is necessary, or whether to use chemotherapy (treatment with drugs), radiotherapy (treatment with radiation) or immunotherapy (ways to allow the body's immune system to fight the cancer).

## What happens to people diagnosed with melanoma?

If it is caught early, melanoma can be cured. But the deeper the tumour is, the more likely it is to come back after treatment. If melanoma is left untreated, the cancer usually spreads to other organs in the body.

78% of men and 91% of women diagnosed with melanoma survive at least five years after the diagnosis. If the melanoma is advanced, where the melanoma is thicker or has spread to other parts of the body, only 11% of individuals survive 5 years.

# Discussion Continuum

This activity is designed to facilitate dialogue about the ethical, legal and social aspects of research into melanoma. Groups of 4-12 students discuss the issues raised by each statement and choose where each card should go between 'agree' and 'disagree'.

## Contents:

- An AGREE and a DISAGREE card
- 8 Discussion Cards, which include a statement on some aspect of melanoma

## Gameplay:

1. Players form small groups, between 4 and 12 per group. Each group is given an AGREE and DISAGREE card and 8 discussion cards.
2. Within each group, the AGREE card and DISAGREE card are placed on the floor/table about one metre apart, to represent the two extremes of the continuum. The space in between is where the discussion cards will be placed.
3. The first player reads the first discussion card to the rest of the group. The player should check everyone understands the card, and use information from the introduction where necessary to ensure the group understands the statement.
4. The first player then decides to what extent they agree with the first card. They place the card face up, anywhere on the discussion continuum, closer to AGREE or DISAGREE as they choose. This is entirely the choice of the individual player, and is not discussed by the group. The player can give a reason, if they wish.
5. Each player in turn then reads a card, checks that everyone understands, and chooses individually where to place it on the continuum in a similar way.
6. When all the cards have been read, understood and placed on the continuum, the discussion begins. The aim is to place the cards between AGREE and DISAGREE in an order that most of the players agree on. Players should pick a card for discussion, and discuss whether to move it.
7. At the end of the discussion, each group should have a continuum which they mostly agree with.
8. If several groups are playing at the same time, the facilitator may wish to bring the different groups' results together. Are they similar? Can someone from each group explain their choices on particular cards?

## Adapting the game:

Time limitations? Don't hesitate to reduce the number of cards, or simply use the cards as starting points for discussion.

**Discussion continuum developed by Ecsite, in collaboration with Barcelona Science Park and Centre of the Cell, in the context of the Xplore Health project. Thanks to At-Bristol for the development of the discussion continuum format: [www.at-bristol.org.uk](http://www.at-bristol.org.uk)**

Agree

**Disagree**

### Discussion Card 1

“To prevent melanoma, public health campaigns should aim to **send a positive message** as people might ignore a campaign that focuses too much on the dangers of spending time in the sun.”

### Discussion Card 2

“Public health campaigns need to **emphasise that melanoma is easy to treat**, so people will not be put off seeing their doctor.”

### Discussion Card 3

“Companies who make sunscreen must provide clearer guidelines to consumers on **how to use sun protection properly.**”

### Discussion Card 4

“Tanning salons should be **banned from using sunbeds** and sunlamps, as excessive UV exposure is known to increase the risk of melanoma.”

### Discussion Card 5

“Health authorities should **have access to genetic records** to find out who has a history of melanoma in their families, so they can send information and guidance to people who are most at risk.”

### Discussion Card 6

“Researchers should **focus on developing a self-diagnosis kit** for melanoma, so people could do a simple test at home before making a doctor’s appointment.”

### Discussion Card 7

“Public health campaigns on melanoma should **aim to reach poorer people** specifically, as they have been shown to be the least willing to seek medical help.”

### Discussion Card 8

“Nursery and primary school staff should routinely **put factor 30-50 sunscreen on children** before they do outdoor activities.”