



WHAT ARE THE AIMS OF THIS LEAFLET?

This leaflet has been written to help you reduce the risk of developing skin cancer after receiving an organ transplant and understanding more about what these risks are. It explains the importance of early detection and treatment of skin cancers. It describes the main types of precancerous skin growths and skin cancers, how you can reduce the risk of getting skin cancer, and how skin cancer can be treated.

WHY SHOULD I READ THIS LEAFLET?

If you are going to have, or have had an organ transplant, it is important that you take care to protect your skin from the sun. This is because people who have had a transplant are more at risk of developing skin cancer than other people because of the strong medications they must take to prevent rejection of the transplant.

This leaflet gives you some advice on looking after your skin and provides information on:

- The importance of early detection of skin cancers
- The importance of early treatment of skin cancers
- The way to decrease the risk of skin cancers

WHY AM I MORE AT RISK FROM SKIN CANCER?

If you have a transplant, you will be given immunosuppressive drugs to prevent you rejecting the transplanted organ. These work by dampening down your immune (defence) system. However, these treatments also increase the risk of developing skin cancers, some benign (harmless) skin growths such as warts and infections. Certain immunosuppressive drugs carry a higher risk than others when it comes to the risk of developing skin cancers.

HOW LIKELY AM I TO GET SKIN CANCER?

All transplant patients are at risk of developing skin cancer, and the risk increases with time (and taking immunosuppressive drugs for longer). In a UK study, one in three people with a transplant for more than 10 years had developed a skin cancer. Around twenty years after transplantation, about half of all transplant patients will have had a skin cancer.

Whilst all transplant patients are at risk, some are more likely than others to develop skin cancer. We know that transplant patients with any of the following characteristics are at a higher risk of developing skin cancers compared with others:

- Fair skin that burns easily (multiple sunburns before the transplant increases the risk)
- Blue, green, grey or hazel eyes
- Red or blonde hair
- High levels of sun exposure in the past (outdoor work or hobbies, history of multiple sunburns)
- Previous skin cancer (risk of developing another skin cancer increased within the first year by nearly a third)
- Family history of skin cancer
- Smoking history
- Male sex (risk of squamous cell carcinoma [SCC] higher in males than females)
- Age at transplant – individuals transplanted over the age of 55 years old are at higher risk of developing skin cancers
- Type of organ transplanted (lung and cardiac transplant are higher risk)
- People of Asian and African or Caribbean descent are much less likely to develop skin cancer than fair-skinned transplant patients. However,



development of rare skin cancers can still occur, and therefore monitoring and protecting your skin is still important.

Two in three people who are transplanted and have had a skin cancer are likely to have multiple skin cancers over their lifetime.

The number and type of transplant immunosuppression (anti-rejection) drugs you are taking (which is related to which organ you are transplanted with) also affects skin cancer risk. The risk is further increased the longer that you are taking these medications. Drugs such as [azathioprine](#) and [ciclosporin](#) are considered higher risk as they interact directly with ultraviolet (UV) light which leads to skin cancers developing. If you take a combination of more than one immunosuppressant drug, this will also increase the risk. Speak with your dermatologist or transplant physician if you want to discuss these risks and what you can do to protect your skin.

SKIN CANCER DETECTION

How can I spot signs of skin cancer?

Most skin cancers, if detected and treated early, can be cured. Check your skin for changes once a month. You may need to use a mirror or take photographs of your skin and compare to them. A friend or family member can help you with this, particularly for awkward areas like your back.

You should see your doctor if you have any marks on your skin which are:

- New or growing
- Painful or tingling
- Bleeding or scabbing
- Changing in appearance in any way
- Not healing completely

Below, we describe what skin cancers and related lesions look like.

- ***Actinic keratoses (also known as solar keratoses)***

Skin cancers may be preceded by a pre-cancerous condition known as actinic keratoses. These are usually pink or red, but can sometimes be brown, with a rough or scaling surface, which appear on skin that is

exposed to the sun. The head, face, V of neck, backs of the hands and forearms are most often affected. Actinic keratoses might be easier to feel than they are to see, as they are often rough to the touch. People who have had a transplant are more likely to have multiple actinic keratoses or large areas where there is a sun damaged skin called 'field change'. These areas of field change lead to a greater risk of developing skin cancers, so early identification and treatment are recommended, as this could prevent the development of a skin cancer.

- ***Basal cell carcinoma (rodent ulcer)***

Most basal cell carcinomas (BCC) are painless. People often first become aware of them when they develop a scab that bleeds occasionally but does not heal completely. Some basal cell carcinomas are superficial patches on the surface layer of the skin and look like a scaly flat red or brown mark. Others are deeper and/or appear bumpy, with some having a shiny/pearly rim around a central indented area. If left untreated, the latter type can break down, eventually causing an ulcer – hence the name "rodent ulcer". BCCs are up to 10 times more common in organ transplant recipients compared with the general population.

- ***Squamous cell carcinoma***

A squamous cell carcinoma (SCC) usually appears as a rapidly growing scaly or crusted lump on the skin. These are often painful or tender when touched. They can look like an irritated wart, or the skin can break down to form a bleeding ulcer. In organ transplant recipients one sign which is particularly suspicious for a squamous cell carcinoma is pain in a growing skin lump. SCC occur most often on the head, neck, ears, lips, back of the hands and forearms. SCC is 150 times more common in transplant recipients than in the general population and is the most frequent type of skin cancer in organ transplant patients.

- ***Melanoma***

Melanomas are rarer but are potentially a serious type of skin cancer which are also more common in organ transplant recipients. They are usually irregular brown, black or pink skin lesions. Melanomas can arise from an already existing mole but might also develop on previously normal skin. Any change in a mole,



or any new moles or areas of brown pigmentation occurring for the first time after the age of 30 years old, should be shown to your doctor. Some melanomas are skin coloured or red, so similarly any new or rapidly growing skin lumps should be shown to your doctor.

- **Other skin cancers**

Other, less common, skin cancers also occur at increased frequency in organ transplant patients. These can include skin cancers such as Merkel cell cancer, sebaceous gland tumours and [Kaposi sarcoma](#).

If you see **any changes** in your skin, such as a slow healing spot, new bleeding from a mole or lesion, or an unusual growing lump you must tell your GP, nurse, dermatologist or transplant doctor. Any skin lump that becomes tender or painful should alert you to seek the opinion of a skin specialist.

HOW IS SKIN CANCER DIAGNOSED?

If your doctor thinks that the lesion on your skin needs further investigation, a small piece of the abnormal skin (a biopsy), or the whole area (called an excision), will be removed and examined in a laboratory under the microscope by a pathologist.

HOW CAN I REDUCE THE RISK OF GETTING SKIN CANCERS?

There are many ways in which you can help to reduce your chance of getting skin cancers which include:

- Learn how to recognise early signs of a skin cancer as detailed earlier in the leaflet.
 - Examine your skin regularly for these signs.
 - Check with your doctor or nurse the frequency and setting of your in-clinic skin checks; this will vary depending on your individual risk factors and according to your hospital protocol.
 - Protect yourself from the sun and prevent your skin from burning.
 - Do not use sunlamps or sunbeds.
- Exposure to the sun (a natural source of UV light) is the main cause of skin cancer. This does not just mean sunbathing; you expose yourself to UV light each time you do any outdoor activities, including gardening, walking, sports, and UV light can penetrate through the windows of your home, office or car. The sun and its UV light can cause problems all year round, not just in the summer and can be a problem even on a cloudy day. Transplant patients who are at increased risk of developing skin cancers and sun damage should remember this year-round.
 - You can take some simple precautions to protect your skin by following these sun protection measures:
 - Wear protective, tightly woven clothing, including long-sleeved shirts and trousers, sunglasses (with a high UV protection) and a broad-brimmed hat that shades your face, neck and ears (we recommend brims that are at least 4 inches). Consider purchasing UV protective swim and beach wear which can particularly assist in protecting the trunk when swimming on holiday.
 - Apply a high sun protection factor (SPF) sunscreen of at least 30. However, if you have an organ transplant, it is recommended to use SPF 50, which has both UVB and UVA protection all year round. Look for the UVA circle logo and choose a sunscreen with 5 UVA stars as well as a high SPF, like this:



- Use this sunscreen every day to all exposed areas of skin, especially your head (including balding scalp and ears) and neck, central chest, backs of hands, forearms and legs if exposed.
- Apply plenty of sunscreen 15-30 minutes before going out in the sun (ideally apply it twice) and reapply every two hours when outdoors. You should

especially re-apply straight after swimming and towel-drying, even if the sunscreen states it is waterproof.

- Make a habit of sunscreen application, applying sunscreen as part of your morning bathroom routine. If you have an oily complexion, you may prefer an oil-free, alcohol-based or gel sunscreen.
- Plan outdoor activities to avoid sun exposure between 11 a.m. and 3 p.m. when the sun's rays are strongest. Step into the shade before your skin has a chance to redden or burn. It is important to avoid sunburn, which is a sign of damage to your skin and increases your risk of developing a skin cancer in the future. Developing a tan is a sign of skin damage and should be avoided.
- No sunscreen will provide 100% protection so they should be used to provide additional protection from the sun, alongside clothing, shade-seeking, hats and avoiding sun between 11am and 3pm. Sunscreen is not an alternative to using all of the recommendations listed.
- Remember that winter sun, such as on a skiing holiday, can contain just as much of the damaging UV light as summer sun.
- Avoid sunbathing and never use sunbeds or sunlamps.
- Routine sun protection is rarely necessary in the UK for people of colour, particularly those with black or dark brown skin tones. However, there are important exceptions to this which include those taking immunosuppressive treatments (such as organ transplant recipients. Others for whom sun protection is important are those with a skin condition, such as photosensitivity, vitiligo or lupus, or if you are genetically pre-disposed to skin cancer. Outside of the UK in places with more extreme climates, you may need to follow our standard sun protection advice.

- It may be worth taking Vitamin D supplement tablets (available from health food stores) as strictly avoiding sunlight can reduce Vitamin D levels especially over winter months. If you have had a kidney transplant, discuss this first with your kidney specialist.
- The British Association of Dermatologists recommends that you tell your doctor about any changes to a mole or patch of skin. If your GP is concerned about your skin, you should be referred to see a consultant dermatologist or a member of their team at no cost to yourself through the NHS.

Vitamin D advice

The evidence relating to the health effects of serum vitamin D levels, sunlight exposure and Vitamin D intake remains inconclusive. People who are avoiding (or need to avoid) sun exposure may be at risk of vitamin D deficiency and should consider having their serum vitamin D levels checked. If the levels are low, they may consider:

- taking supplementary vitamin D3, 10 micrograms (400 IU) per day, and
- increasing intake of food rich in vitamin D such as oily fish, eggs, meat, fortified margarine and cereals.

SKIN CANCER TREATMENT

Can skin cancer be cured?

Most skin cancers, if treated early, can be cured. That is why it is important to report any new or changing skin lesion to your doctor. Basal cell carcinomas can be cured in almost all cases and very rarely spread to other parts of the body. Treatment may be more complicated if a skin cancer has been allowed to grow for a very long time, or if it appears in an awkward place – such as near the eye, nose or ear. These can be more difficult to treat and have a potentially higher chance of returning in the same place months or even years after they have been first removed. In a few cases, squamous cell carcinoma and melanoma may spread (metastasise) to the lymph glands and other organs in the body which might require



further surgery and/or treatment under the care of the oncology team.

How can skin cancer be treated?

- **Surgery:** most skin cancers are excised (cut out) under a local anaesthetic. After an injection to numb the skin, the tumour is cut away along with some normal skin around it and fat or deeper tissue from below it. Sometimes, a skin graft is needed if the defect is large. A special type of surgery called **Mohs micrographic surgery** is sometimes needed to assure complete removal of a skin cancer, such as BCC, while sparing normal skin.
- **Curettage and cautery:** this is another type of surgery, performed under local anaesthetic, where the skin lesions are scraped away (curettage) and then the skin surface is sealed (cautery).
- **Cryotherapy:** freezing skin lesions with a spray of a very cold substance (liquid nitrogen). This is more often used for pre-cancerous skin lesions or viral warts.
- **Topical treatments:** these include creams and ointments. The two most commonly used creams contain **5-fluorouracil** and **imiquimod**. Other topical treatments include diclofenac sodium gel (for example, Solaraze® gel) and combination creams, e.g. salicylic acid and 5-fluorouracil (e.g. Actikerall® cutaneous solution) and calcipotriol ointment (vitamin D) combined with 5-fluorouracil cream. Most of these topical treatments are used for pre-cancerous skin lesions such as **Bowen disease** or actinic field change. Some can be considered to treat thin skin cancers such as superficial BCC.
- **Photodynamic therapy:** this involves applying a cream to the skin cancer or lesion under a dressing for 4-6 hours. A special light is then shone on to the area which destroys the lesion. There are two types of photodynamic therapy. One uses a visible light source (Conventional PDT), whereas the other uses daylight (Daylight PDT).
- **Radiotherapy:** radiation can be used, under the supervision of a specialist oncology doctor, either on its own or in combination with surgery to some skin cancers which are either difficult to remove with surgery or have a high risk of returning following surgery.
- In some patients with multiple cancers or more serious types of skin cancer, your dermatologist may discuss with your transplant physicians about reducing or changing your immunosuppressant medication as this might help to reduce the number of skin cancers that you go on to develop over your lifetime.
- In specific circumstances where patients have had multiple skin cancers, certain medicines may be added for skin cancer prevention to minimise the risk of developing further skin cancers. Two such medications include a vitamin A derivative, **acitretin**, and vitamin B3, **nicotinamide**.

Remember:

Most skin cancers can be avoided if you follow these basic principles:

- Check your skin for changes regularly.
- Report any skin changes to your doctor or nurse promptly.
- Always protect yourself from the sun (UV light) and avoid burning.
- Never use sunlamps or sunbeds.

WHERE CAN I FIND OUT MORE ABOUT SKIN CANCER?

Patient support groups providing information:

Macmillan Cancer Support

Web: www.macmillan.org.uk Macmillan Support

Line: 0808 808 2000

Several other leaflets produced by the British Association of Dermatologists on related topics are also available on this website: '[Actinic keratoses](#)', '[Basal cell carcinoma](#)',



'Bowen disease', 'Keratoacanthoma' and 'Squamous cell carcinoma'.

Further information is available below:

Early detection and prevention of skin cancer
<https://www.skinhealthinfo.org.uk/symptoms-treatments/skin-cancer/>

Sun safety

<https://www.skinhealthinfo.org.uk/sun-awareness/the-sunscreen-fact-sheet/>

<https://www.skinhealthinfo.org.uk/sun-awareness/sun-advice-for-skin-of-colour/>

<https://www.skinhealthinfo.org.uk/sun-awareness/sun-protection-advice-for-children-and-babies/>

Vitamin D

<https://www.skinhealthinfo.org.uk/sun-awareness/vitamin-d-information/>

Jargon Buster:

<https://www.skinhealthinfo.org.uk/support-resources/jargon-buster/>

Please note that the British Association of Dermatologists (BAD) provides web links to additional resources to help people access a range of information about their treatment or skin condition. The views expressed in these external resources may not be shared by the BAD or its members. The BAD has no control of and does not endorse the content of external links.



This leaflet aims to provide accurate information about the subject and is a consensus of the views held by representatives of the British Association of Dermatologists: individual patient circumstances may differ, which might alter both the advice and course of therapy given to you by your doctor.

This leaflet has been assessed for readability by the British Association of Dermatologists' Patient Information Lay Review Panel

BRITISH ASSOCIATION OF DERMATOLOGISTS

PATIENT INFORMATION LEAFLET

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