BAPRAS

British Association of Plastic
Reconstructive and Aesthetic Surgeons

The Voice of Plastic Surgery

Your Guide to skin cancer

Contents

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Foreword

The evidence suggests that 70% of those of us who are over 55 will develop some form of skin cancer. This BAPRAS booklet will help you understand what to look out for and, if you are given the diagnosis, it will help you understand the terms the team looking after you may use. Being given the diagnosis of having a skin cancer can be daunting and the information enclosed should help you understand the disease you have and the treatments that you are being recommended. BAPRAS Members are key members of Skin Cancer Multi-Disciplinary Teams and they will look after you to the best of their ability.

If, after reading the booklet, there is something you don't understand or if you have questions, no matter how small, please ask the team looking after you.

Nigel Mercer
President, BAPRAS
2015–2016

Introduction

Who is this guide for?

This booklet is designed for patients and their families interested in understanding skin cancer treatment.

What is skin cancer?

All cells in the body, including skin cells, repair and are replaced all the time to ensure the health of the tissue they form. When these processes go wrong in skin cells, their growth can become uncontrolled and a collection of abnormal cells (tumour) can develop in a part of the skin. This can range from an abnormal, but non-cancerous (benign) tumour through pre-cancerous sun damage, to skin cancer (malignant).

What causes skin cancer?

The commonest cause of skin cancer is sun and sunbed damage to skin cells. Some skin types, which may run in families, can be more prone to skin cancer. Some chemicals and irritants are also linked with skin cancers.

What is the treatment for skin cancer?

Skin cancer needs to be treated, as it does not 'heal' by itself. Frequently this involves confirming that the suspicious area is a skin cancer, often by taking a small (biopsy) sample to test, and subsequently taking it away surgically or treating by other means such as creams, lasers or radiotherapy where suitable.

How will this booklet help me?

With more and more sources of information available through the internet and other media, knowing where to find straightforward, up to date information becomes increasingly difficult. We hope this guide solves that problem, helping you understand the different skin cancer types, what treatments are available, why some might be selected over others and what to expect from each. A list of links and contacts you might also find interesting is included at the end of this guide.

Skin anatomy and skin cancers

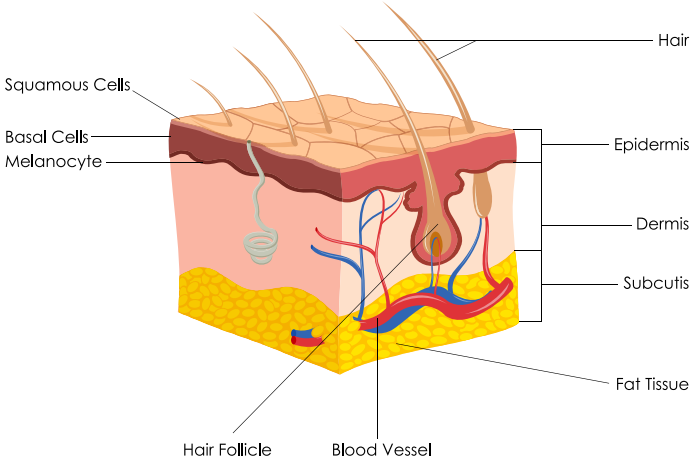
The skin is the largest organ of the body and made up of three main layers:

- The **Epidermis** – very thin upper layer, protects the deeper layers from sunlight, temperature changes and infections.
- The **Dermis** – much thicker middle layer that contains hair follicles and nerves as well as many blood and lymph vessels embedded in a collagen-rich framework.
- The **Subcutis** – deepest fat and collagen rich insulating layer that also contains abundant blood and lymph vessels.

Most skin cancers develop from cells found in the epidermis layer of the skin.

Keratinocytes are the main cells in this layer. Deep in the epidermis, closest to the dermis, these cells are plump and are actively generating new skin cells. This is the layer of basal cells. As these cells age they move upwards towards the surface and thin, becoming the squamous cells. In amongst the basal cells are brown tan pigment (melanin) making melanocyte cells. Close by are other cells (Langerhans cells) that pick up and carry foreign material (eg bacteria or cancer cells) from the skin to the lymph nodes via the lymph vessels.

Lymph vessels from the skin drain into the local lymph nodes of the groin, armpits and neck. These vessels carry lymph fluid, representing one of the methods of fluid circulation in the body and a route for the immune system. It is also the route that skin cancer cells can use to spread around the body. The lymph nodes act as filters and catch these cells. They can then multiply in the node making it big enough for doctors to feel through the skin.



Types of skin cancer

Skin cancers are divided into two main groups – non melanoma skin cancers (NMSC) and melanoma.

Non-melanoma skin cancer

- BCC (basal cell carcinoma) – this is the commonest (80%) skin cancer, sometimes called a 'rodent ulcer'. They tend to be slow growing, just causing a local problem. It is extremely uncommon for them to spread to other parts of the body (metastasis).

- SCC (squamous cell carcinoma) – this is the second most common skin cancer type. They can often appear warty and crusted. These can metastasise elsewhere and must be treated early.

- Other rare skin cancers – there are 22 recognised rare skin cancer types which combined make up about 500 cases a year (compared with over 13,000 melanoma cases per year and 130,000 NMSC cases per year). No further mention will be made of these tumours in this booklet.

Melanoma

- Melanoma is less common than basal cell carcinoma or squamous cell carcinoma but can be far more serious. More than 95% are shades of brown (melanin skin pigment) and develop in previously 'normal' moles that change (30%) or begin as completely new moles (70%). Catching these early is vital.

If you have a growth on the skin that regularly forms a crust or bleeds and does not heal over a 6–8 week period, you should have it checked by your doctor.

Causes

Environmental risks

The major risk is from ultraviolet (UV) radiation/light from the sun and sunbeds. The UV damages the genetic material in skin cells (DNA) leading to abnormal cell growth. These abnormalities can increase over time meaning that sun damage as a child or in early adulthood becomes apparent in later life. This is especially true for people with paler skin which, when exposed, tends to go red rather than tan. Non-melanoma skin cancer also seems to be associated with overall sun exposure through life, eg outdoor work, sports and hobbies. Darker skinned people have lower skin cancer rates because the pigment in their skin, (melanin) protects the cells from UV to some extent, but they do still sometimes get skin cancers.

Certain skin cancers, particularly squamous cell carcinoma, can be caused by long term irritation from sources other than sunshine such as chemicals or oils, long-standing ulcers, burn and scar tissue, and radiotherapy sites.

The effectiveness of the body's own defence system can be reduced (immunosuppression) by some drugs, such as those taken after transplant surgery, or by other illnesses. This can increase the risk of developing a skin cancer. The importance of taking immunosuppressants far outweighs the potential risk of skin cancer, but transplant patients should see a skin specialist every year for a skin check.

Having had one skin cancer identifies a person as being more at risk of developing another later in life.

Genetic risks

Most non-melanoma skin cancer does not run in families. In some very rare cases melanoma may have a genetic family link. However, any familial risk of developing a skin cancer may be related to sharing the same skin type (pale, freckly or having lots of moles) or having had similar sun exposure (lived abroad, holidays).

Melanoma

Some families have skin types with very many moles with different colour, shape and size. Most of these will not turn into skin cancers but people with this sort of skin type are at an increased risk especially where they have more than 50 moles and a close family member has had melanoma. This is known as FAMMM (familial atypical multiple mole melanoma syndrome).

Non-melanoma skin cancers (NMSC)

There are some very rare inherited conditions that increase the risk of NMSCs.

Xeroderma Pigmentosum (XP)

This condition causes problems in skin cell DNA repair after damage so that UV exposed skin becomes more prone to NMSC.

Gorlin syndrome

This inherited condition, present from birth, increases the risk of BCC so they occur in greater numbers and at an earlier age than would otherwise be the case.

Basal cell carcinoma

Treatment

These superficial skin cancers can be treated in a number of different ways, and your doctor will advise you on the most suitable treatment. Surgical removal enables the lesion to be assessed by a pathologist to see if it has been adequately treated. Other treatments may require a sample (biopsy) to confirm the type of skin cancer before starting treatment.

Surgery

Your surgeon will most often do this under a local anaesthetic (stay awake) as a daycase procedure. The aim of surgery is to completely remove the affected area with a margin of safety. Once removed, the wound will often be simply stitched together, but sometimes a skin graft or skin flap is needed to mend the wound. (See Surgery and Reconstruction section).

Mohs surgery

There are times when it is very difficult for your surgeon to see the edge of the affected area to reliably remove it first time. Mohs Surgery allows the surgeon to check the edges of the tissue down a microscope in the next room whilst you remain in the day surgery unit and take a further sample if abnormal cells are still present in your skin. This process can be repeated until all tumour cells are removed. The wound can be closed at the same time, or commonly the following day.

Curettage

With very early sun damage your doctor can scrape away the damaged cells in the top layers of the skin (curettage) and leave things to heal naturally with a simple dressing.

Topical therapy

Your doctors may suggest you use an ointment (Efudix or Aldara) to treat areas of sun damage or basal cell carcinoma, particularly superficial BCC. These ointments are designed to make the affected area inflamed (hot and red) so that your body's own defence cells (immune system) can enter and destroy any abnormal tumour cells. Treatment is normally applied for 3–6 weeks and can take up to 12 weeks to fully settle down. Your doctor will then check if this has been successful.

Basal cell carcinoma

Photodynamic therapy

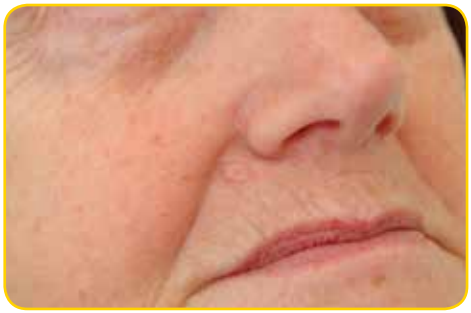
Occasionally your doctor will recommend a combination of ointment to the affected area before you sit beneath a specially designed light that activates the treatment to destroy abnormal cells in the skin. The treatment is carried out as a single outpatient visit and can take a number of weeks to settle down. Your doctor will assess its effects and can repeat it if necessary.

Radiotherapy

Some patients are not suitable for surgery because they have numerous medical problems, or have a large area of tumour that cannot be easily removed and rebuilt (reconstructed). Also, radiotherapy can be used after surgery to 'mop up' any remaining tiny tumour cells around the treated area. This involves a number of visits to your local radiotherapy unit often over a short period of time. Radiotherapy does not result in scars in the short term but can lead to scarring and tissue damage in the future.

Chemotherapy

In some special circumstances patients are offered a new chemotherapy medicine (vismodegib) to treat advanced basal cell carcinomas. This treatment is usually only used for very aggressive disease that cannot be treated by an operation.



BCC on the upper lip

BCC on the cheek

Squamous cell carcinoma (SCC)

Treatment

Surgery is the most common treatment for SCC and is used for removing the main lump (the tumour) on the skin. Surgeons will remove the lesion and then suture the wound, or if needed use a skin graft or skin flap (see Surgery and Reconstruction section).

Surgery is also sometimes needed if cancer cells have broken away from the original tumour and travelled to the lymph glands. In this case, your surgeons will remove all of the lymph glands in an affected area (lymphadenectomy). The main areas are in the neck, under the arms and the groin. This is a bigger operation and patients often stay in hospital for a number of days following surgery to recover. Tubes, called drains, are used to remove excess fluid from the surgical area afterwards and often need to stay in place for a few weeks until the fluid discharge settles. Some patients can go home with their drain if they have been taught how to look after these. This arrangement will be dependent on what service is available locally.

Radiotherapy

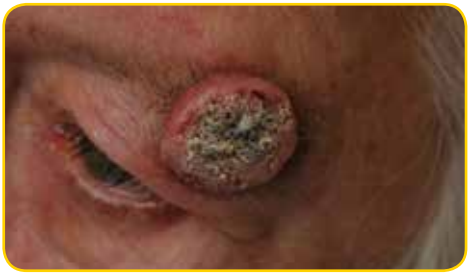
Radiotherapy can be used after surgery to treat any remaining tiny tumour cells around the surgical area. This involves a number of visits to your local radiotherapy unit often over a short period of time. Radiotherapy does not leave any scars, but can cause some inflammation.

Chemotherapy

Tumour cells can move beyond the lymph glands, into parts of the body that are difficult to reach surgically, or to multiple areas such that medicine to treat the whole body is needed in the form of chemotherapy. Occasionally this can be used to shrink tumours before surgery, or to reduce the risk of it coming back following surgery.

Topical therapies

Your doctors may suggest you use an ointment (Efudix or Aldara) to treat areas of superficial squamous cell carcinoma (Bowen's disease). These ointments are designed to make the affected area inflamed (hot and red) so that the bodies own defence cells (immune system) can enter and destroy any abnormal tumour cells. Treatment is normally applied for 3–6 weeks and can take up to 12 weeks to fully settle down. Your doctor will then check if it has been successful.



SCC above the eye

Malignant melanoma

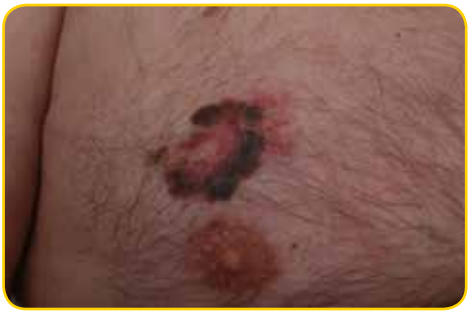
Signs and symptoms

If a melanoma develops, patients usually notice a new brown or black lesion on their skin, or changes occur within an existing mole. About 70% of melanomas start from new, whilst 30% come from an existing mole. Although most are pigmented (brown) some 5% stay pink (called amelanotic melanomas). Melanomas can start anywhere on the skin but are most common on sun exposed areas. Men have a higher chance of developing melanoma on the head, neck and trunk whereas women have a higher risk on the legs. Other sites melanoma can occur include the soles of the feet, in between toes or fingers, and under the nails. Rare sites include areas that have not been exposed to the sun such as within the mouth, the eye, around the anus and vagina.

The ABCDE check

Diagnosing melanoma can be difficult even for your doctor. The ABCDE system helps to identify changes that would make you suspicious that a melanoma could be developing.

A	Asymmetry	One half does not match the other
B	Border	Irregular, crusted or notched
C	Colour	A change in colour, darker, lighter, varied
D	Diameter	6 mm or more, but can be smaller
E	Evolving	Changes in the mole over time



If any of these signs are present, or you have other concerns, it is best to seek the advice from your GP or dermatologist.
Skin lesions that are changing need to be checked

Abnormal nails

Brown colouration that occurs under a nail or at the base of a nail may represent a subungual melanoma. These melanomas are often picked up later because people mistakenly think that they have inadvertently trapped a finger or stubbed a toe, and it is only when things do not improve that they visit the doctor. Typically there is a colour change or pigmentation at the base of the nail or nail fold, with coloured streaking down the length of the nail. Sometimes the nail itself may become thickened and irregular ridged surface and even ulcerate.
A bruise on, or under a nail that is NOT growing out along with the nail needs to be investigated

Diagnosis

If you are concerned about a mole, either one that is new or has changed, you should visit your GP. If your doctor is concerned they will refer you to a skin cancer specialist urgently (within two weeks). The diagnosis of a melanoma is made by removing the abnormal mole (excision biopsy), which is easily done under a local anaesthetic.

Excision biopsy

The excision biopsy will consist of removal of the mole with a rim of normal skin (2mm around the mole) to ensure it has been completely removed. This will be sent off for testing. Your consultant will explain the results and, if the mole was a melanoma, what further surgery is needed. This surgery will involve a wider excision of skin, from where your melanoma was, to try and ensure there are no roots left behind. In addition a further procedure, known as a sentinel node biopsy, may be recommended at the same time as your wider excision to see if the melanoma has spread.

Staging

Staging is an overall assessment of the patient with melanoma and is based on an internationally agreed classification. It describes the size of the melanoma and whether it has spread to other parts of the body. This assessment will help guide your doctor to offer the best treatment. Thinner melanomas generally behave more favourably than thicker melanomas, which is why it is important to seek advice as soon as possible. Remember, that even though staging is a statistical analysis of the available data, your melanoma is unique.

Staging and treatment is generally carried out at your regional skin cancer centre. Here your plastic surgeon or other consultant with an interest in skin cancer surgery will be able to discuss in detail what the options are for treating your skin and cancer and then reconstruction of the area.

Malignant melanoma

Stage		Explanation
0	Melanoma in situ	This means that the melanoma cells have not invaded into the deeper tissues of the skin (the dermis) and is confined in the outer most layer of the skin (the epidermis)
1A	Melanoma is less than 1mm thick, not ulcerated (the surface of the skin is intact) and no signs of actively dividing (mitoses)	The uppermost layer of the skin has been replaced with melanoma cells and no signs of further spread, such as to the lymph nodes or other parts of the body
1B	Melanoma is less than 1mm thick but has ulceration (the surface of the skin is broken) or mitoses; Melanoma is 1–2 mm thick without ulceration or mitoses	The uppermost layer of the skin has been replaced with melanoma cells and no signs of further spread, such as to the lymph nodes or other parts of the body
2A	Melanoma is 1–2 mm thick and has ulceration; Melanoma is 2-4 mm thick without ulceration	The melanoma is only into the skin and no signs of further spread, such as to the lymph nodes or other parts of the body
2B	Melanoma is 2–4 mm thick without ulceration; Melanoma is 4mm thick or more but without ulceration	The melanoma is only into the skin and no signs of further spread, such as to the lymph nodes or other parts of the body
2C	Melanoma is 4mm thick or more, with ulceration	The melanoma is only into the skin and no signs of further spread, such as to the lymph nodes or other parts of the body
3A	Melanoma is not ulcerated but has spread to the local lymph nodes (up to three nodes)	Melanoma cells are seen in a lymph node using a microscope (microscopic deposit), but they have not increased sufficiently in number for the lymph node to be felt through the skin (macroscopic deposit). There is no evidence it has spread to other parts of the body

Stage		Explanation
3B	Melanoma is ulcerated and microscopic deposits of melanoma have been found in no more than three lymph nodes; or Melanoma is not ulcerated and macroscopic deposits of melanoma have been found in no more than three lymph nodes; or Melanoma is not ulcerated and has not been found in the lymph nodes. Melanoma deposits have been found within the tissues in transit to the lymph nodes.	Cells have spread from the primary site of the melanoma to the local lymph nodes but only microscopically, as would only be determined by SLNB as the nodes would not be palpable to touch. There is no evidence it has spread to other parts of the body. Cells have spread from the primary site of the melanoma to the local lymph nodes and are now palpable. There is no evidence it has spread to other parts of the body. Cells have spread from the primary site of the melanoma along the lymphatic channels but have not reached the local lymph nodes. There is no evidence it has spread to other parts of the body.
3C	Melanoma is ulcerated and macroscopic deposits of melanoma have been found in the lymph nodes; or Melanoma is not ulcerated and macroscopic deposits have been found in at least four lymph nodes; or Melanoma has been found as in transit disease and in the lymph nodes.	Cells have spread to the local lymph nodes and are also in the lymphatics (in transits). There is no evidence it has spread to other parts of the body. In addition to being ulcerated at the primary site, cells have spread to the local lymph nodes and are now palpable. There is no evidence it has spread to other parts of the body. Cells have spread to the local lymph nodes which are now palpable and matted together. There is no evidence it has spread to other parts of the body.
4	Melanoma has spread to other parts of the body	There is evidence that the melanoma has spread from the primary site and gone beyond the local lymph node; these sites can occur in the skin well away from the primary melanoma, the liver, the lungs, and the brain. These latter sites can be picked up by radiological investigations such as CT scans, MRI and PET scans.

Malignant melanoma

X-rays, CT scans and blood tests

Once melanoma has been diagnosed, your specialist will guide you about whether any scans or blood tests are needed. Historically, chest x-rays have been used to assess whether disease has spread but we now use CT scans as they are more detailed. A CT scan is usually requested if there is a risk that melanoma may have spread to other parts of the body.

An additional test that may be requested is a blood test to examine the function of the liver. Patients needing a general anaesthetic for surgery may have blood tests and x-rays as part of checking their overall health and fitness.

Sentinel lymph node biopsy (SLNB)

Your doctor may offer this additional procedure to see if melanoma cells have travelled to the lymph nodes in the armpits, neck or groin region. Sentinel lymph node biopsy allows your doctor to locate the nearest lymph node to your melanoma and 'map' this with radioactive dye (in the x-ray department) before you come to the operating theatre. When your plastic surgeon completes the wider excision of the melanoma scar, this lymph node or nodes are also removed through a small scar and sent away for careful examination to look for tumour cells. It takes three or four weeks to complete this work whilst you recover from surgery.

Around 20% of patients will have a few melanoma cells in the sentinel node that has been removed. Currently it is recommended for these patients that the remaining lymph nodes at the same site are removed in case they too have microscopic deposits.

We are not yet certain whether this test and subsequent surgery to remove the remaining lymph nodes, if the SLNB is positive, extends a person's overall life expectancy. However, it gives the best information about the risks of your melanoma causing further problems

Treatment

Surgery is the main treatment to reduce the risk of melanoma coming back in the scar and surrounding area. The amount of skin your doctor removes will depend on the thickness of the melanoma (Breslow thickness) – the thicker the melanoma, the greater the amount of skin removed.

UK guidelines give the recommended excision margins:

In Situ	5mm margin/ all removed
Melanoma less than 1mm thick	1cm margin
Melanoma 1mm to 2mm thick	1 to 2cm margin
Melanoma 2mm to 4mm thick	2 to 3cm margin
Melanoma greater than 4mm thick	3cm margin

Sometimes it is not possible to obtain the recommended margins if the melanoma is in a difficult site (eg the face or fingers) but your surgeon will try to obtain the maximum margin possible, and rebuild the defect with a variety of methods (see Surgery and Reconstruction section of this handbook).

Topical therapies

There are currently no approved topical therapies to treat melanoma

Radiotherapy

The use of radiotherapy or "x-ray treatment" is usually a second line therapy after surgery to the lymph glands if a tumour was very big, or to try and control disease in parts of the body where surgery may not be possible (such as the brain).

The use of radiotherapy is occasionally required after surgery to lymph glands in the neck, but less so if the glands have been removed from the axilla or groin.

Chemotherapy

Chemotherapy for melanoma is a rapidly developing area for the treatment of melanoma, as better drugs are being developed. At present, chemotherapy is used for those patients who have advanced disease that cannot be treated by surgery, although there are some trials using new medicines early on for patients with high risk disease. Your specialist will guide you as to whether this applies to you.

Surgery and reconstruction for skin cancers

Your surgeon will have two main objectives in managing your skin cancer: firstly to remove the tumour with an appropriate margin of safety and secondarily to 'fill the hole' with a good aesthetic reconstruction.

The complexity and the ease with which this can be achieved depends upon the size and site of the defect and and other medical conditions the patient may have.

Your surgeon will guide you about the choices to rebuild a wound following tumour removal. They will explain the risks and complications of surgery, what to expect and the recovery time. Surgeons choose from a variety of different techniques to give the best reconstruction – one that works well and looks good.

Reconstructive options

1. Healing by secondary intention

This is the simplest approach following excision of a skin tumour. Dressings are used if the wound created is small and/or relatively superficial. Other factors include how well the patient is – they may not be well enough for anything more complex. The main advantage of this approach is its simplicity but does require extended time for dressings. Some sites of the body heal very well by this approach, eg the forehead and inner aspect of the eye.

2. Direct closure

Suturing the wound is the next easiest approach providing there is enough skin to allow the wound to be pulled together with stitches. Your surgeon will try, if possible, to blend your resulting scar into your skin folds to make it look as natural as possible. The main advantage of a direct closure is that the wound will heal quickly whilst keeping the scar length as short as possible.

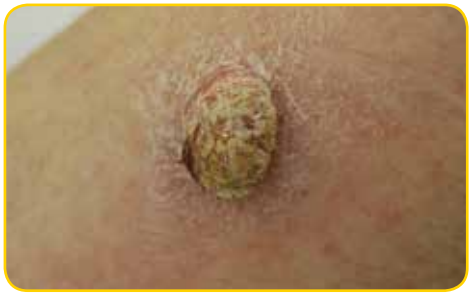
3. Skin grafting (SG)

Skin grafts can be used if the wound cannot be sutured and involves 'borrowing' or harvesting skin from one part of the body to rebuild a wound in another. Skin grafts are either thin 'split thickness' (STSG) or thicker 'full thickness' (FTSG). Skin grafts need to pick up a new blood supply at the site of reconstruction and will only work if there is a good blood supply at the base of the wound.

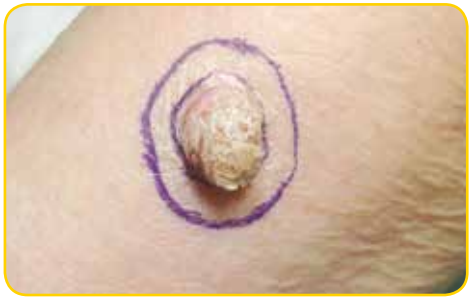
Therefore, some sites are not appropriate for a skin graft, such as bare bone, or foreign materials.

Split thickness skin grafts (STSGs)

Split thickness skin grafts consist of shaving a thin layer of skin, usually tissue-paper thick, from a site which will usually heal well, such as the thigh, buttocks or calf. This 'donor site' will require a dressing and is usually healed by two to three weeks (much like a graze). The area will remain pink for some months afterwards but usually fades eventually to a barely perceptible scar.

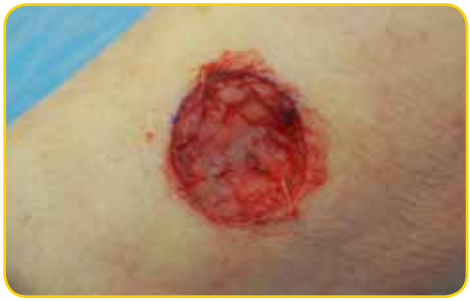


SCC on a leg

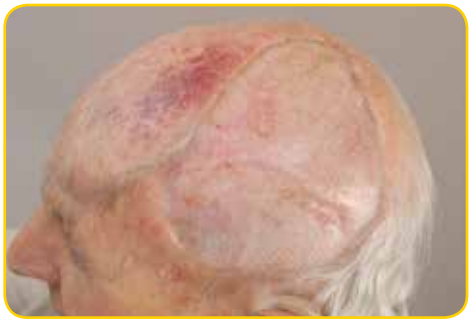


Area to be removed is measured and marked

Your surgeon may put small holes into the graft to help the skin graft to survive. After the graft is secured to the wound, a dressing is applied to hold the graft in place to help healing. The donor site where the graft has been taken is also dressed. After five to seven days, the skin graft will be checked to see if it is healing. The donor site is left for longer, usually two to three weeks, to fully heal.



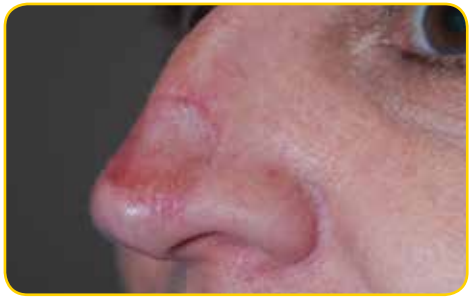
Following removal of the tumour, a split skin graft has been sutured into place



A mature skin graft on the scalp

Full thickness skin grafts (FTSG)

Full thickness skin grafts differ from split thickness skin grafts in that the full thickness of the skin is removed rather than a shaving. The donor site is directly closed and not left as a surgical graze as in the split thickness skin graft approach. Typical sites of the body used for harvesting a full thickness skin graft include the neck, behind the ear, the upper arm, and the groin. A FTSG finds it harder to pick up a new blood supply, because it is thicker and so it is even more important to leave the dressing intact until it is removed by the surgical team, five to seven days later.



A mature full thickness skin graft on the nose

Composite grafts

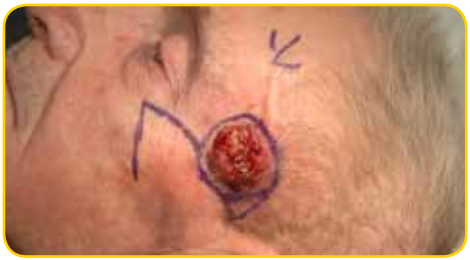
Composite grafts are more complicated grafts that contain more than one tissue type and are often used to reconstruct difficult areas around the nose or eyelid. These types of grafts can take longer to heal.

Local flap reconstruction

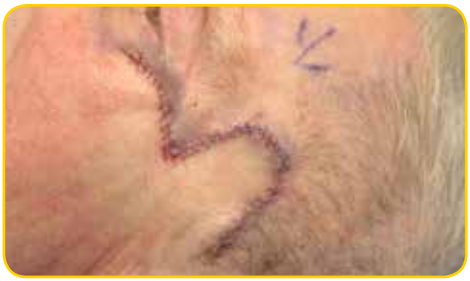
A 'flap' brings with it its own blood supply and so does not rely on the wound bed for a blood supply to heal like a skin graft does. Flaps give a good colour match and fill a wound well. Local flaps use skin from next to the wound, and move it into place. There are lots of types of local flaps named after their shape or type of blood supply. The vast array of flaps that have been developed over the years of plastic surgery is exhaustive and beyond the scope of this handbook, so only some of the more common flaps are described here. Many of these flaps can be performed under a local anaesthetic. Your surgeon will guide you about what will work best for you.

The transposition flap

This flap is often used on the head and neck region and its name is based on the fact that the flap of skin used to rebuild the wound approximates a rhomboid shape. Your surgeon will design the flap, to make use of adjacent spare tissue to fill the defect, whilst trying to arrange the scars to blend into the normal creases and lines of the face.



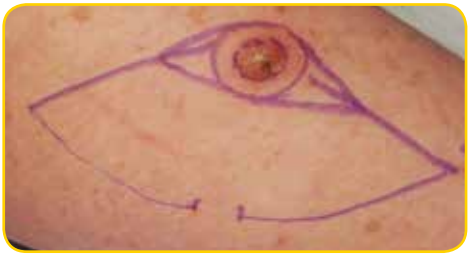
The lesion is marked out and the flap designed ready to rebuild the wound



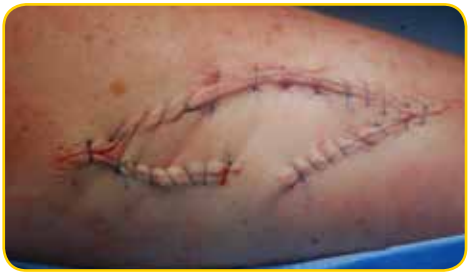
Immediate postoperative appearance

The keystone flap

This flap is useful for closing wounds on the arms and legs.



The lesion is marked out and the flap designed ready to rebuild the wound

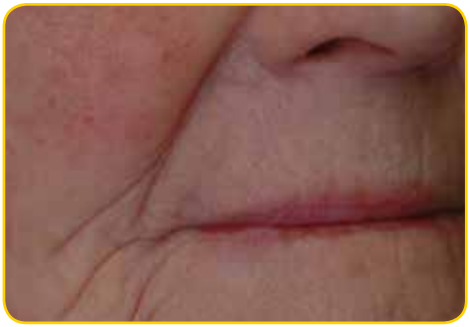


Immediate postoperative appearance

The V-Y advancement flap

This flap is also used for closing a wound on the face, but can also be used on other parts of the body. It is called a V-Y flap because the flap is developed as a 'V' shape and after it is advanced forward to close the wound by the surgeon it takes on a 'Y' shape. It is particularly useful for defects along the side of the nose.

This flap has been moved to rebuild a wound on the upper lip – immediate postoperative appearance



V-Y advancement – flap after three months

Flaps from further away – regional flap, free flap

Occasionally, it is necessary for the surgeon to perform a more complicated reconstruction operation, owing to the size of the wound following tumour removal or a lack of other simpler options. Regional flaps come from further away from the wound and can bring with them other tissues such as muscle if needed.

Occasionally your surgeon will advise you that a 'free flap' is needed to rebuild a wound. This is a more complex operation and involves raising a large area of tissue with its own blood vessels, before completely freeing it to move it to the wound. The isolated blood vessels are then reconnected to the nearby blood vessels to carry blood into and out of the flap. This operation can take a number of hours to complete and patients are watched very closely for the first few days to ensure all goes smoothly.

Lymphnode surgery

Disease from certain tumours such as melanoma or SCC can sometimes spread to nearby lymph nodes. This can be found as a lump you and your doctor can feel, or maybe found as tiny deposits of tumour as is found in sentinel lymph node biopsy. The main areas for nodes are in the neck, the armpit and the groin. There are also lymph nodes inside the body. If a lump can be felt, diagnosis is made by sampling cells with a needle test (fine needle aspiration – FNA) or by removing one of the nodes to check it in detail. If tumour cells are found in the lymph nodes you will have a scan to look at the whole body, and plans will be made to remove all the remaining glands in the area.

This is a significant operation with consequences your surgeon will explain. You will need to stay in hospital for a number of days following surgery to make sure you are recovering well. There will be a tube (drain) under the skin to draw off the excess fluid that builds up in the area. This can be needed for up to two weeks. In some hospitals patients can go home with a drain in place having been taught how to look after it. Almost half of patients will get swelling of the limbs following this surgery, and for some it is long lasting (lymphoedema). Whilst lymphodema cannot currently be cured, it can be managed. There are many options for help and support available.

Post surgery care

Your surgeons and nurses will explain how to care for your wound after surgery, what rest you need, and when to have stitches removed if necessary.

You can improve your outcome by following some simple advice:

- Follow all the instructions carefully, and ask if you are not sure.
- Avoid smoking as it can stop wounds healing properly.
- Listen to your body – you will know if you are doing too much and things become painful or swell.
- If in doubt seek advice early.

Follow-up

Patients are followed up depending on what type of skin cancer they have, and how extensive the tumour has been.

Basal cell carcinoma

Once a basal cell carcinoma has been completely removed, patients can usually be discharged with advice about sun safety, and what to look out for in the future. Sometimes, if the margin of safety has been reported to your doctor as being narrow, they will discuss with you about either taking some more skin away, or following you for a longer period of time to monitor the area for signs of the tumour coming back.

Squamous cell carcinoma

Your doctor will tell you what type of squamous cell carcinoma you have had removed. Patients who have had a 'well differentiated' SCC only need to be followed up for a short period of time as there is a low risk of these returning if they have been removed with a suitable margin of safety.

If it is 'moderately' or 'poorly differentiated', you will be followed for a few years. At each visit your doctor will check the area of your body where the tumour was removed from, as well as examining the nearest lymph glands to check for any sign of tumour cells having spread and formed a lump that can be felt in clinic. If a lump is found, cells can be sampled in the clinic and checked to see if they relate to your skin cancer.

Melanoma

Following removal of a melanoma, patients are followed up for a suitable period depending on the thickness of their tumour. There are three main reasons you should come back to clinic for your appointments. Firstly to see if your original melanoma has come back, scondly to check for any new lesions or lumps, and thirdly to answer your questions and concerns.

Stage / melanoma type	Follow up
Melanoma in situ	One visit to specialist doctor
Stage IA	2–4 visits for 1 year
Stage IB - IIC	3-monthly visits for 3 years then 6-monthly visits for another 2 years
Stage IIIA–IV	As above, and yearly visits from 5 to 10 years

Sun safety

It is important that, following the diagnosis of any skin cancer, patients think about their attitude to sunshine. It is essential to avoid sun damage, but this does not mean avoiding the sun altogether. Sunshine is important to make the vitamin D to prevent weak bones.

Sun damage can happen even if it is not a very sunny day, and can occur when you are not lying in the sun, but doing other things such as gardening or other outdoor leisure activities. Remember, the sun in other parts of the world, especially closer to the equator, can be even stronger and extra care is needed on holiday or when travelling.

Sun Safety Advice

- Use at least factor 30 (SPF30) on sun exposed areas, and factor 50 (SPF50) if you have a scar exposed. Make sure it has good UVA protection.
- Re-apply sun cream regularly following the guidance on the bottle.
- Seek shade during the hottest part of the day (11am until 3pm).
- Wear a t-shirt, hat and sunglasses.

Supplements

We are not entirely sure how much vitamin D we all need. Most of our vitamin D comes from the sunshine we see in the summer and we make enough to last us through the winter. There are some groups of people who may have lower than normal levels. Pregnant or breastfeeding women, children aged six months to five years, older people and those at risk of not seeing enough sunshine, such as our skin cancer patients. The government recommends a vitamin D supplement for these groups and your local pharmacist can advise you about which supplement is right for you. Remember, sunbeds are NOT a good way to top up your vitamin D levels!

Self-examination

Following treatment for skin cancer, it can be an anxious time returning for follow-up visits in case your doctor finds something abnormal. It is important that you are part of your follow up by self-examining once a month for any new lumps or swellings, and in the case of squamous cell carcinoma or melanoma, for any lumps in the nearest lymph glands. Your doctor and/or skin cancer nurse will explain how to look after yourself following your surgery and what to look out for should your skin cancer recur. If you are concerned that your skin cancer may have come back you should contact your skin cancer team soon rather than waiting for your next outpatient review.

Cancer trials

Your doctors and cancer scientists continue to find ways to better treat people with skin cancer. Whenever a new discovery is made, it needs to be carefully tested to understand if it is better than the current treatments. There are trials of new medicine opening all the time and your doctors and nurses will advise you if there is a trial that may be suitable for you.

You will be guided through what the trial is about, whether you need any extra tests and how much time you will need to commit. It is entirely up to you if you want to take part, and importantly, saying 'no thank you' does not change your treatment in any way.

Support for patients

A diagnosis of skin cancer can be very worrying for you and your familybut there is lots of support out there for patients and their families. There can be anxiety around visits to the doctor, looking different following surgery, managing financial pressures and talking about how you feel. Talk to your doctors, nurses or GP and they can guide you.

Specialist nurses, counselors and clinical psychologists are affiliated to our skin cancer multi-disciplinary teams and many patients find support from these groups very helpful in dealing with new diagnoses, treatment and future plans and support of dependent family.

Helpful links

- Cancer Research UK
  www.cancerresearchuk.org/cancer-help/#

- Macmillan
  www.macmillan.org.uk/Cancerinformation/Cancertypes/Skin/Skincancer.aspx

- British Association of Dermatologists
  www.bad.org.uk/desktopDefault.aspx?TabId=574

- Melanoma Focus
  http://melanomafocus.com/information-portal/what-is-melanoma/

- Public Health England, Skin Cancer Hub
  www.swpho.nhs.uk/skincancerhub/

- Lymphoedema Support Network
  www.lymphoedema.org

- Veterans UK
  If you have served with the armed forces (including the Merchant Navy) and developed skin cancer as a result of your time in service, you may be eligible for compensation. www.veterans-uk.info/

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