Welcome to this NDRS training module on Skin tumours, which is designed to help Cancer Administration staff gain a better understanding of the disease, the terminology used by the clinical teams and the codes to use.

Agenda

- Skin tumours
- Summary
- Acknowledgements

This module may be paused at any time

We're going to give you a brief introduction to Skin tumours, taking a look at anatomy and physiology before moving on to other aspects including… signs & symptoms.. Diagnosis.. and treatment options. This module can be paused at any time.

Skin

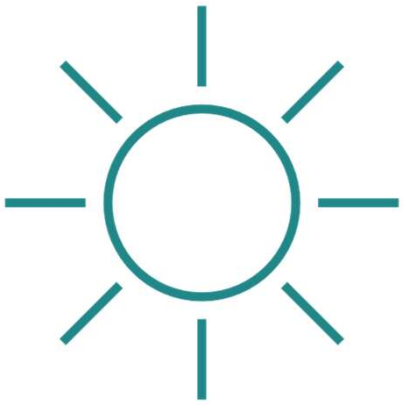
In this section we will cover:

- Causes and Risk Factors
- Signs and Symptoms
- Anatomy & Physiology
- Regional Lymph Nodes
- Diagnosis
- Morphology
- ICD10 coding
- Depth
- Mitotic rate
- Grade
- Stage
- Treatment

We're going to start with Causes & Risk factors…

Skin – Causes & Risk Factors

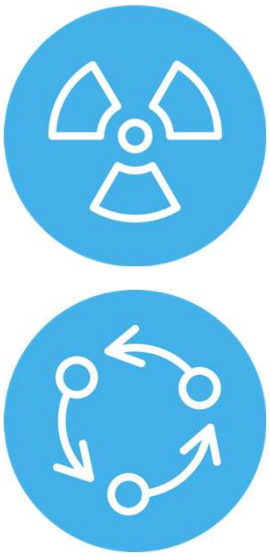
- Exposure to ultraviolet radiation: sun or sunbeds
- A family history of skin cancer or a personal history of blistering sunburn.
- A large number of moles, or moles of unusual size or shape
- Fair skin / skin that freckles easily
- Naturally red or blond hair and blue or light-coloured eyes
- Previous ultraviolet light treatments for conditions including psoriasis and eczema



The greatest risk factor for skin tumours is ultraviolet light, usually in the form of sun exposure or sunbeds although prior medical UV treatment also increases the risk. People with fair skin and a tendency to freckle are also at greater risk of skin cancer…

Skin – Causes & Risk Factors

- Have had an organ transplant requiring immunosuppressant drugs
- Previous therapeutic radiation treatments for adolescent acne
- Previous ultraviolet light treatments for conditions including psoriasis and eczema
- Occupational exposure to certain chemicals including creosote and motor oil
- Rare inherited conditions including Xeroderma pigmentosum and Gorlin syndrome

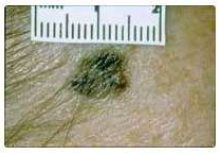


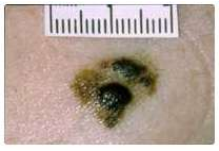
… as are those who are using immunosuppressant drugs, have had exposure to certain chemicals or have certain rare genetic conditions

Skin – Sign & Symptoms

Patients with a suspected melanoma may present with a lesion that:

- A – Is Asymmetrical
- B – Has a Border that is irregular
- C – Has uneven Colouring
- D – Has a Diameter of 6mm or more
- E – Is Evolving, changing it's appearance





Skin cancers present in a variety of ways and malignancy is not always obvious….

Skin – Sign & Symptoms

Patients with a suspected non-melanoma may present with:

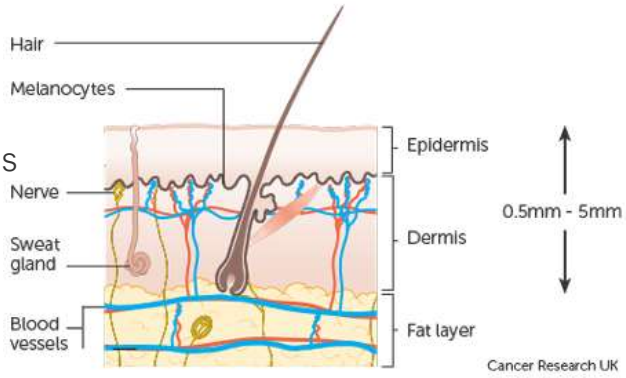
- An ulcer (an area where the skin has broken down) that doesn't heal for 4 weeks
- A spot or sore that is painful, itchy or bleeds for more than 4 weeks
- A spot or sore that hasn't healed in 4 weeks

…. But any changes to the skin should always be checked by a GP

Skin – Anatomy & Physiology

- The skin is the body's largest organ covering the outside of the body. It is about 2mm thick and usually weighs between 3 and 5kg

- The skin is made up of two layers, the epidermis (outer layer) and the dermis (middle layer). Underneath the dermis is a deeper fatty layer called the subcutaneous layer (also known as the subcutis or hypodermis)



The outermost layer of the skin is the epidermis, with the dermis below it. The subcutaneous or fatty layer sits underneath the dermis.

Skin – Regional Lymph Nodes

Regional lymph nodes are those appropriate to the site of the primary tumour

Head & Neck	ipsilateral, preauricular, submandibular, cervical and supraclavicular lymph nodes
Thorax	ipsilateral axillary lymph nodes
Upper Limb	ipsilateral epitrochlear and axillary lymph nodes
Abdomen, Loins and Buttocks	ipsilateral inguinal lymph nodes
Lower Limb	ipsilateral popliteal and inguinal lymph nodes
Anal margin and Perianal skin	ipsilateral inguinal lymph nodes

- Ipsilateral – meaning on the same side of the body as the primary tumour
- Contralateral – meaning on the opposite side to the primary tumour
- All nodes other than those listed by body region would be considered distant

If an invasive tumour is diagnosed, the location of the regional lymph nodes will depend on the location of the primary tumour. It's worth noting that only lymph nodes in the defined area on the same side of the body as the primary tumour are considered to be regional. During an MDT, clinical teams could reference these groups of regional lymph nodes, which may indicate that the stage of the cancer has been determined.

Skin - Diagnosis

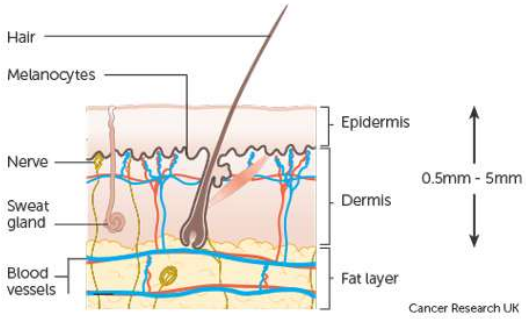
- Dermatoscopy - The dermatologist looks at the lesion with a dermatoscope, which can magnify up to ten times, to help distinguish between a benign lesion and a malignant one like a melanoma
- Biopsy – The dermatologist will remove all or part of the affected area and send it to the laboratory where it will be examined under a microscope by a pathologist. The different types of biopsies include
  - Incisional
  - Excisional
  - Punch
  - Shave

Initial investigation of a skin lesion is usually visual using a magnifying tool called a dermatoscope. If necessary, a biopsy may be taken from a larger lesion, or the entire lesion may be excised for analysis under a microscope

Skin – Morphology – Melanoma

Melanoma

- Arise in melanocytes which are part of the basement layer. The basement layer is situated at the bottom of the epidermis
- Invasive (malignant) Melanoma invades through the epidermis, breaking through the basement layer into the dermis below
- Melanoma in-situ has Horizontal Growth Phase behaviour and spreads across the epidermis without breaking through the basement layer into the dermis



Melanomas arise in cells called melanocytes which are pigment-producing cells that form part of the skin's basement layer. Melanomas may be invasive or in-situ.

Skin – Morphology – Invasive Melanoma

Where a skin lesion is determined to have any ICD-O-3 morphology code in the range M8720 to M8790 with a behaviour code of /3 (indicating an invasive tumour) this would be classified as an invasive skin melanoma in ICD10

Morphology coding is normally included in the pathology report

There are a number of ICD-O-3 morphology codes which are classified as melanomas. Any morphology code in the range M8720 to M8790 that has a behaviour code (final digit) of 3 is classified as an invasive melanoma. Morphology codes are normally found on the path report, but for ease…

Skin – Morphology – Invasive Melanoma

- M8720/3 Malignant melanoma
- M8721/3 Nodular melanoma
- M8722/3 Balloon cell melanoma
- M8723/3 Malignant melanoma, regressing
- M8730/3 Amelanotic melanoma
- M8740/3 Malignant melanoma in junctional naevus
- M8741/3 Malignant melanoma in precancerous melanosis
- M8742/3 Lentigo maligna melanoma
- M8743/3 Superficial spreading melanoma
- M8744/3 Acral lentiginous melanoma
- M8745/3 Desmoplastic melanoma
- M8761/3 Malignant melanoma in giant pigmented naevus
- M8770/3 Mixed epithelioid & spindle cell melanoma
- M8771/3 Epithelioid cell melanoma
- M8772/3 Spindle cell melanoma, NOS
- M8780/3 Blue naevus, malignant

Melanoma of other sites not listed here

… we've listed the invasive melanoma ICD-O-3 codes - that apply to skin - here.

Skin – Morphology – In-situ Melanoma

Where a skin lesion is determined to have any ICD-O-3 morphology code in the range M8720 to M8790 with a behaviour code of /2 (indicating an in-situ tumour) would be classified as an in-situ melanoma in ICD10. This would include:

- M8720/2 Melanoma in-situ
- M8741/2 Precancerous melanosis, NOS
- M8742/2 Lentigo maligna

Morphology coding is normally included in the pathology report

Similarly, the ICD-O-3 morphology codes for in-situ melanomas - which have a behaviour code of /2 - have been listed here.

Skin – Morphology – Basal Cell Carcinoma (BCC)

Basal Cell Carcinomas (BCCs) are the most common type of skin cancer developing from the basal cells they are found in the deepest layer of the epidermis and around the hair follicle:

Basal cell carcinoma, NOS – M8090/3

Sub-types include:

- Nodular BCCs – M8097/3
- Sclerosing/morphoeic BCCs – M8092/3
- Multifocal superficial BCCs– M8091/3
- Fibroepithelial BCCs – M8093/3
- Basosquamous carcinoma – M8094/3

The most common type of non-melanoma skin cancer is basal cell carcinoma often referred to as BCC. Although they can be locally quite destructive, it's extremely rare for a BCC to metastasize.

Skin – Morphology – Basal Cell Carcinoma (BCC)

- It is very rare for basal cell carcinoma to spread to other parts of the body
- While your clinical team may request that BCCs are recorded, most BCCs of the skin do not require a COSD record in your cancer data management system. Only BCCs of the skin requiring full MDT discussion need be recorded in your cancer data management system for the purposes of COSD
- NDRS obtains information on other BCCs of the skin direct from the pathology laboratories
- It should be notes that for all other cancer sites, BCCs must be recorded in your cancer data management system

For the purposes of COSD, it's only necessary to record those skin BCCs that require a full MDT discussion. NDRS collects records for all other BCCs of the skin direct from the path labs meaning a full COSD record isn't needed…

Skin – Morphology – Squamous Cell Carcinoma (SCC)

Squamous cell carcinoma (SCC)

- This is a faster growing skin cancer that begin in the cells called keratinocytes which are in the epidermis layer of the skin
- Squamous cell carcinomas are usually invasive and can spread to other parts of the body

- Squamous cell carcinoma, NOS – M8070/3, other invasive subtypes include:
  - Verrucous SCC – M8051/3
  - Acantholytic SCC – M8075/3
  - Clear cell SCC – M8084/3
  - Spindle cell SCC – M8074/3

… whereas a COSD record is needed for other forms of invasive non-melanoma skin cancer, including Squamous cell carcinoma…

Skin – Morphology – Other types of Non-Melanoma

- Other types of non-melanoma skin tumour may include:
  - Merkel cell carcinoma – M8247/3 (this is a very rare form of neuroendocrine tumour – see the training module Neuroendocrine Key Points: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials)
  - Kaposi's sarcoma – M9140/3
  - T cell lymphoma of the skin – M9709/3

… and other, rarer morphologies - such as Merkel cell carcinoma & Kaposi's sarcoma. Please be aware that if the path report details a lymphoma of the skin, this would need to be recorded under the relevant lymphoma ICD10 code, not under C44

Skin – ICD10 coding – Melanoma vs Non-melanoma

- In ICD10, invasive (malignant) melanomas are classified as C43
- Melanoma in-situ are classified as D03
- Invasive non-melanomas are classified as C44
- In each case, an additional digit is used to classify the specific part of the body in which the tumour has arisen

ICD 10 coding for most cancer sites relates only to the part of the body in which the cancer has arisen, leaving the classification of the type of tumour solely to the morphology code. However, for skin, there are separate code groups for melanomas and non-melanomas. In each case, the final digit of the ICD10 code describes the location of the tumour

Skin – ICD10 coding – Melanoma, Invasive

Melanoma

- C43.0 Malignant melanoma of the lip
- C43.1 Malignant melanoma of the eyelid
- C43.2 Malignant melanoma of the ear and external auricular canal
- C43.3 Malignant melanoma of other and unspecified parts of the face
- C43.4 Malignant melanoma of scalp and neck
- C43.5 Malignant melanoma of trunk
- C43.6 Malignant melanoma of upper limb, including shoulder
- C43.7 Malignant melanoma of lower limb, including hip
- C43.8 Overlapping melanoma of skin
- C43.2 Malignant melanoma of skin, unspecified

- All invasive melanomas must be recorded
- Melanomas arising in different regions of the body (within a different 4th digit ICD10 site code) or in the same region but with different laterality for paired organs, must be recorded on separate pathways

Invasive melanoma ICD10 codes are listed here. Please ensure that you also record the laterality where applicable. If the patient has tumours in both lateralities of a paired body site or has the same type of tumour in different body sites, please record these on separate pathways.

Skin – ICD10 coding – Melanoma In-situ

In-situ

- D03.0 Melanoma in-situ of lip
- D03.1 Melanoma in-situ of eyelid
- D03.2 Melanoma in-situ of ear and external auricular canal
- D03.3 Melanoma in-situ of other and unspecified parts of the face
- D03.4 Melanoma in-situ of scalp and neck
- D03.5 Melanoma in-situ of trunk
- D03.6 Melanoma in-situ of upper limb, including shoulder
- D03.7 Melanoma in-situ of lower limb, including hip
- D03.8 Melanoma in-situ of other sites
- D03.9 Melanoma in-situ, unspecified

- All codes shown (except D03.8 which applies to non-skin tumours and is collected via path reports) must be recorded
- Melanoma in-situ arising in different regions of the body (within a different 4th digit ICD10 site code) or in the same region but with different laterality for paired organs, must be recorded on separate pathways

The same applies to melanoma in-situ…

Skin – ICD10 coding – Non-melanoma

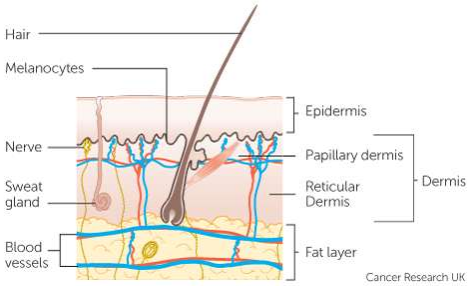
Non-melanoma

- C44.0 Skin of lip
- C44.1 Skin of eyelid
- C44.2 Skin of ear and external auricular canal
- C44.3 Skin of other and unspecified parts of the face
- C44.4 Skin of scalp and neck
- C44.5 Skin of trunk
- C44.6 Skin of upper limb, including shoulder
- C44.7 Skin of lower limb, including hip
- C44.8 Overlapping lesion of skin
- C44.9 Malignant neoplasm of skin, unspecified
- C46.0 Kaposi sarcoma of skin
- All invasive non-melanomas (except Basal Cell Carcinomas of the skin that do **not** require full MDT discussion) must be recorded
- Lesions arising in different regions of the body (within a different 4th digit ICD10 site code) or in the same region but with different laterality for paired organs, must be recorded on separate pathways

… and to invasive non-melanoma. As previously mentioned, most BCCs don't need to be recorded for the purposes of COSD

Skin – Depth – Clark level

- **Level 1** means the tumour is in situ – the cancer cells are only in the outer layer of the skin (the epidermis)
- **Level 2** means there are cancer cells in the layer directly under the epidermis this is known as the papillary dermis (superficial dermis)
- **Level 3** means the cancer cells are touching the next layer down known as the reticular dermis (deep dermis)
- **Level 4** means the cancer has spread into the reticular dermis
- **Level 5** means the tumour has grown into the layer of fat under the skin (subcutaneous fat)



You might hear the clinical team referring to the Clark level or Clark depth of a tumour. This is a description of how far the tumour cells have invaded

Skin – Depth – Breslow depth

- Breslow depth is the measurement of the depth of a melanoma from the top of the tumour down through to the deepest tumour cells
- Breslow depth measured in millimetres (mm)
- Used to help assess stage

Breslow depth is used to describe the penetration of the melanoma into the skin. It's also used to help determine the stage

Skin – Mitotic rate

- The mitotic rate describes the frequency of cell division within the melanoma
- Higher mitotic rates are associated with more rapidly growing tumours

Mitotic rate is an assessment of how many of the tumour cells are dividing within a given time frame. The greater the number of dividing cells, the faster the tumour will grow.

Skin – Grade – Squamous cell carcinoma only

Grade 1

Sometimes described as “Well differentiated”. Tumours look very similar to the normal tissue and have the best prognosis

Grade 2

Also described as “Moderately differentiated”. Tumours are formed of cells that somewhat resemble normal tissue but have more abnormal features than Grade 1

Grade 3

Also known as “Poorly differentiated”. Tumours have very abnormal cells and the worst prognosis

The grade of a tumour is determined by the similarity of its cells to normal tissue … and the extent of any abnormal features. Grade is applicable only to SCCs

Skin – Stage

- Invasive skin tumours are staged as follows:
  - For diagnosis dates up to 31st December 2025 use UICC TNM v8
  - For diagnosis dates from 1st January 2026 use UICC TNM v9
- For diagnosis dates from 1st January 2026, primary cutaneous lymphoma, mycosis fungoides & Sezary syndrome are also staged using TNM v9
- Please note that the TNM version must be accurately recorded – if you are unable to amend the version on your cancer data management system, please refer to your line manager
- If, after 1st January 2026, your cancer data management system has not been amended to include TNM v9 please record the TNM v9 stage and add the following statement to the Primary Diagnosis Subsidiary Comment field:
  - Patient staged using TNM9 not TNM8 as per CR2070

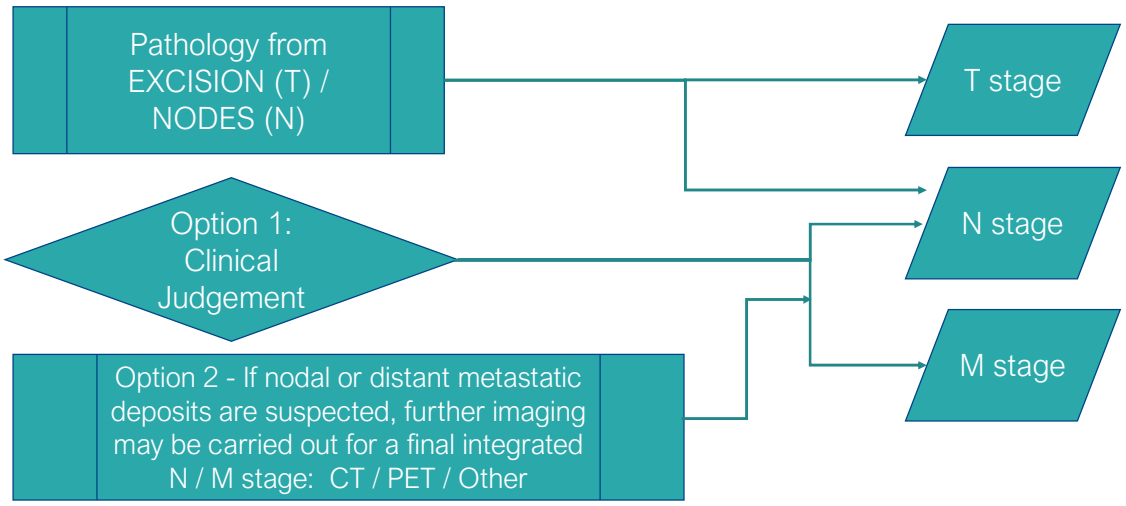
Recordable invasive skin tumours are staged using the appropriate UICC TNM version and all three elements of the TNM stage are needed. Please be aware that for diagnosis dates on or after 1st January 2026, primary cutaneous lymphomas, mycosis fungoides and Sezary syndrome are also stageable in TNM v9

Skin – Stage

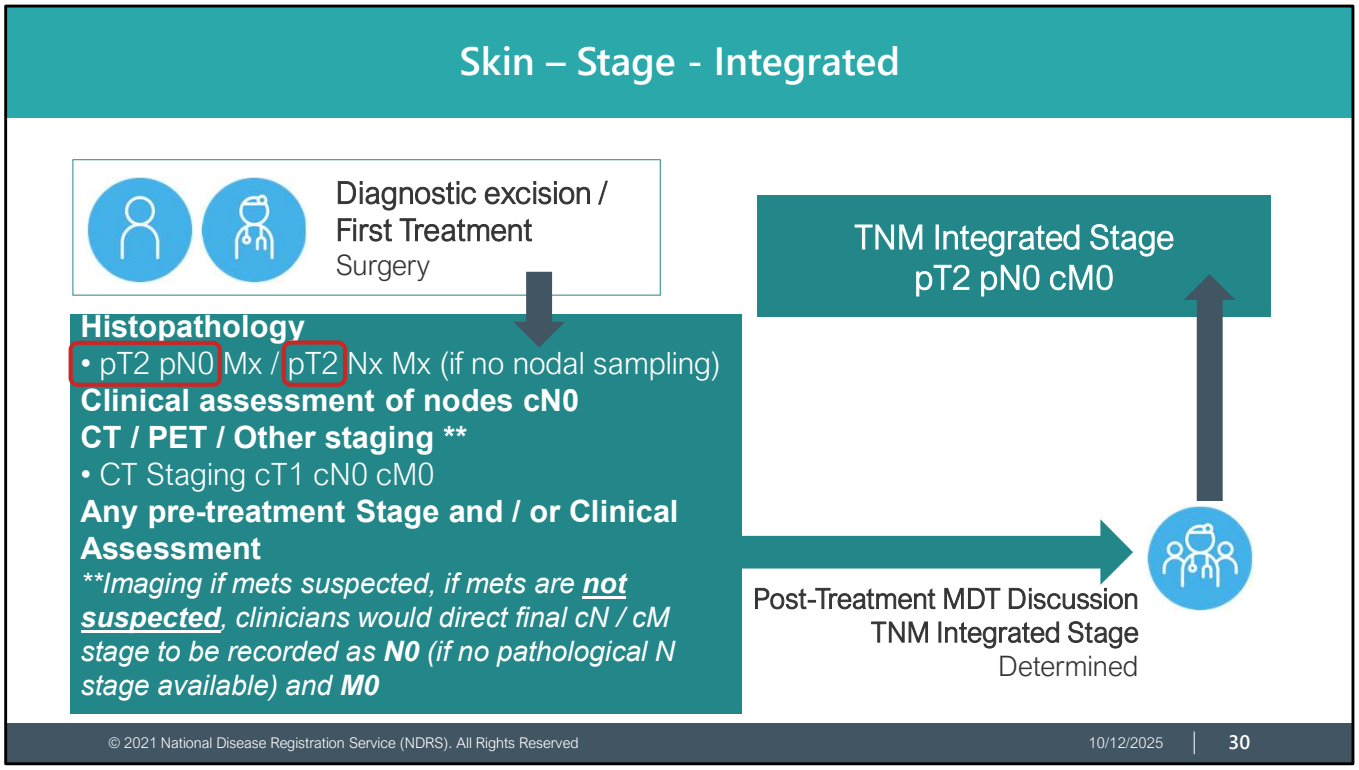
- For details on recording stage, including both pre-treatment and integrated stage, please see the NDRS training module KPI-TNM Staging 101, available on this link: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials
- All three elements of the TNM stage should be recorded for invasive tumours

Details on recording the TNM Stage - including the pre-treatment stage where the patient is not given primary surgery - are available in the NDRS training module: KPI-TNM Staging 101. However, skin is slightly unusual…

Skin – Stage - Integrated



… in that most skin cancer patients would be both diagnosed and treated by the surgical excision of the lesion if it's of a suitable size and location. Additionally, imaging is not routinely carried out for skin lesions meaning that the assessment of N **and** M stages may rely on clinical judgement alone



The full Integrated stage can however be determined by the clinical team: the pathological T stage is combined with any other information collected … such as either a pathological or clinical N stage and an assessment of metastasis which is usually arrived at by clinical means. Where there's no suspicion of mets, it's expected that the clinical team would direct administrators to record M0.

Skin – Treatment - Surgery

Surgery is the treatment of choice for most types of skin cancer and may be the only curative treatment available or required. Many skin tumours are diagnosed only after removal of the lesion.

Skin lesion removal employs a variety of techniques

- Shave excision / curetting
- Excision biopsy
- Wide excision
- Micrographic surgery (Mohs)
- Cryotherapy (cryosurgery)

Types of surgery include shave excision, wide excision and Mohs (where the tumour is removed in multiple procedures with microscopic examination between … this enables the surgeon to avoid unnecessary removal of healthy tissue).

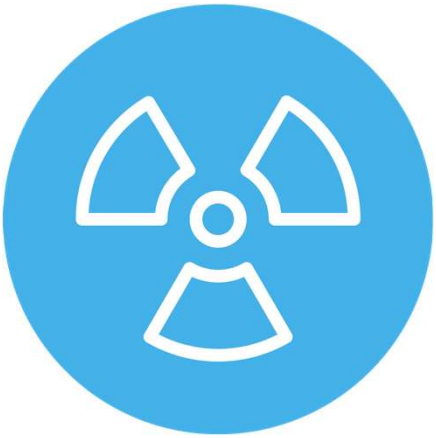
Skin – Treatment - Surgery

- Skin grafting: if a wide area of skin has to be removed then it needs to be replaced and reconstructive surgery may be required
- Skin flaps: this is where a flap of skin and subcutaneous tissue from very close to the tumour is cut and moved over the area that has been removed, but is left partly connected to its original blood supply
- Lymph node removal may be required if imaging shows lymphadenopathy (swollen lymph nodes)

Skin grafts or skin flaps may be needed for surgical removal of larger lesions. Lymph node removal may also be required

Skin – Treatment - Radiotherapy

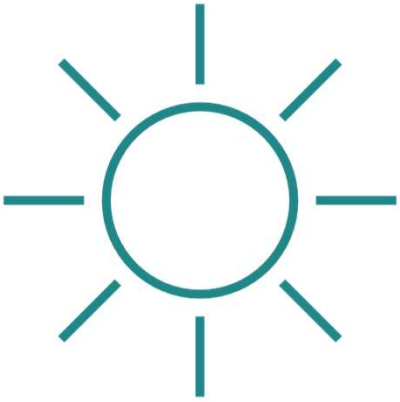
- Patients with advanced melanoma may be offered radiotherapy to shrink the tumour and control symptoms
- Patients with large or surgically inaccessible non-melanoma tumours may be offered radiotherapy instead of surgery
- Radiotherapy may be offered adjuvantly after surgery to kill any remaining cancer cells



More advanced cases - or those with lesions in surgically inaccessible locations - may be offered radiotherapy. This treatment may also be offered after surgical excision to kill any remaining cancer cells

Skin – Photodynamic Therapy (PDT)

- Some patients with non-melanoma tumours may be offered Photodynamic therapy in which a light-sensitising drug is administered before using very bright light at specified wavelengths to destroy cancer cells



A combination of light-sensitising drugs and very bright light might be used to destroy some non-melanoma tumours

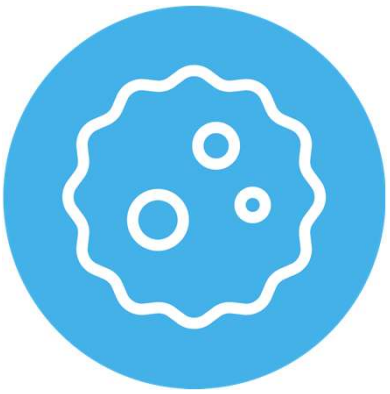
Skin – Treatment – Targeted treatments

- Other treatment options may be available depending on the type of cancer and certain genetic mutations in the tumour
- The patient may be tested for gene mutations including the BRAF gene. Up to 50% of melanomas are positive for the BRAF gene mutation which causes uncontrolled growth in the tumour
- If the patient is positive for the BRAF mutation drugs can be administered to inhibit the actions of the mutated gene, slowing the growth of tumour cells

Depending on the type of tumour and its genetic mutations, drugs might be offered to slow the tumour growth. Up to half of melanomas have mutations in the BRAF gene which can cause the uncontrolled growth

Skin – Treatment – Immunotherapy treatments

- If the tumour is negative for BRAF gene mutation, immunotherapy may be offered instead
- Immunotherapy drugs make the tumour cells more visible to the body's immune systems allowing them to be found and destroyed
- Some immunotherapy drugs can be administered in the form of a topical cream for certain superficial non-melanomas



Where the tumour doesn't have the BRAF mutation, immunotherapy drugs may be offered to highlight the tumour cells to the patient's own immune system

Skin – Treatment - Chemotherapy

- Chemotherapy can be used for some types of superficial non-melanoma skin cancer as a topical cream
- Intravenous chemotherapy can be used for more advanced cases of squamous cell carcinoma to slow the growth or spread and to relieve symptoms
- Chemotherapy can be used palliatively for advanced cases of melanoma

And chemotherapy may be offered depending on the type and stage of the tumour

Summary

In summary…

Summary

- The main risk factor for skin tumours is exposure to UV light

Sunlight or other forms of UV light constitute the main risk for skin cancers

Summary

- The main risk factor for skin tumours is exposure to UV light
- Signs of a skin tumour can include unusual looking moles or ulcers that won't heal

Any unusual looking moles - or ulcers that refuse to heal - may indicate a tumour

Summary

- The main risk factor for skin tumours is exposure to UV light
- Signs of a skin tumour can include unusual looking moles or ulcers that won't heal
- Investigations usually include examination using a dermatoscope and may include either an incision biopsy or total excision of the suspicious lesion

Initial investigation would be a visual examination under a dermatoscope but may include a biopsy or removal of the lesion

Summary

- The main risk factor for skin tumours is exposure to UV light
- Signs of a skin tumour can include unusual looking moles or ulcers that won't heal
- Investigations usually include examination using a dermatoscope and may include either an incision biopsy or total excision of the suspicious lesion
- If a tumour is diagnosed it may or may not be invasive. All invasive tumours, with the exception of Basal Cell Carcinomas of the skin where no MDT discussion is required, must be recorded. Certain in-situ melanomas must also be recorded. Other non-invasive tumours do not need to be recorded on a cancer data management system for the purposes of COSD - NDRS obtains these records directly from pathology laboratories

And if a tumour is diagnosed, it may or may not be invasive. Apart from most BCCs, all invasive tumours and most melanoma in-situ must be recorded in your cancer data management system. While the clinical team might request that other non-invasive tumours are also recorded, these do not need to be recorded for the purposes of COSD – NDRS obtains these records directly from the path labs

Summary

- Additional guidance on recording COSD data including morphology, topography, staging and recording a diagnosis can be found at: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials
- Staging data sheets can also be downloaded from the NDRS website for clinical use: https://digital.nhs.uk/ndrs/data/cancer-data-training-materials/staging-sheets

Additional training modules as well as Staging sheets for clinical use may be downloaded from the NDRS website.

Summary

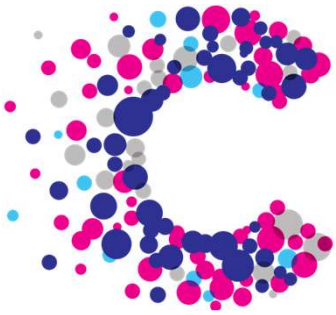
- If in any doubt as to whether you should be recording a diagnosis, please refer to the latest COSD User Guide, Appendices A, B & C
- For guidance on the required staging system, please refer to the latest COSD User Guide, Appendix E

- https://digital.nhs.uk/ndrs/data/data-sets/cosd#downloads

Do please remember, guidance **is** available on our website. You can download the COSD User Guide by clicking on this link and selecting the COSD version appropriate to your trust.

Acknowledgements

Many thanks to Cancer Research UK for the use of their images within this training module.



CANCER RESEARCH UK

We'd like to thank Cancer Research UK for the use of their images within this training module.

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If you have any questions on the information contained within this module or about COSD in general, do please feel free to email your regional Data Liaison Manager