Skin cancer - melanoma

What is melanoma?

The term skin cancer combines various cancerous diseases of the skin, which occur in a wide variety of forms. A distinction is made between “white” skin cancer (non-melanoma) and “black” skin cancer (malignant melanoma).

Skin cancer has become increasingly common over the past decades: between two and three million new cases of non-melanoma skin cancer are diagnosed worldwide every year, as well as more than 130,000 new cases of malignant melanoma. Pale-skinned population groups that often expose themselves to the sun are particularly affected.

When it tans, the skin is attempting to protect itself against the strength of the sun’s radiation. It is not always successful and the result may be painful sunburn. The long-term consequences are worse. In purely superficial terms, the skin recovers very quickly from sunburn. Yet the excessive sunbathing will have been burned irrevocably deeply into the skin: in a similar fashion to radioactive radiation, UV-radiation also causes damage to genetic material (DNA). This damage may form the starting point for uncontrolled proliferation of incorrectly programmed cells in the body. These incorrectly programmed cells may lead to cancer.

Malignant melanoma is a malignant tumour that can develop as a result of a change (known as a mutation) in the pigment-forming cells. The initial stage is increased cell division, in which the cells are differentiated to an ever decreasing extent. A malignant tumour develops from this type of cell proliferation and spreads rapidly.

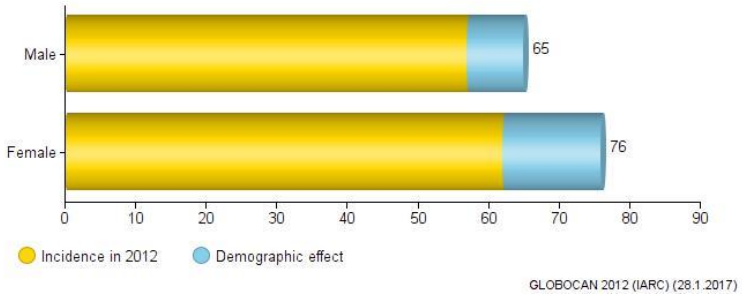
If the melanoma is recognised early, the chances of recovery are high in principle for all forms. In the event of metastasis, the recovery rates are very low.

Egypt- Melanoma of skin

Year	Estimated number of new cancers (all ages)	Male	Female	Both sexes
2012		57	62	119
	ages < 65	41	23	64
	ages >= 65	16	39	55
2020		65	76	141
	ages < 65	46	25	71
	ages >= 65	19	51	70
Demographic change		8	14	22
	ages < 65	5	2	7
	ages >= 65	3	12	15

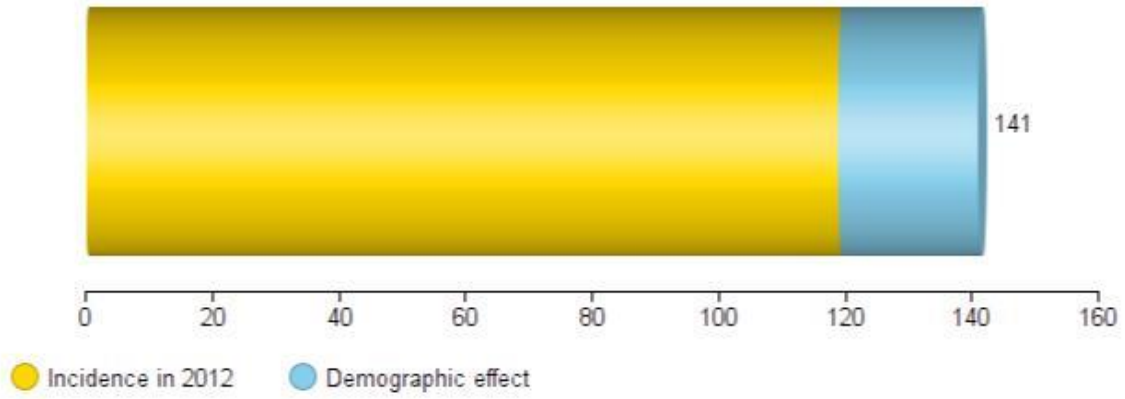
GLOBOCAN 2012 (IARC) - 28.1.2017
Population forecasts were extracted from the *United Nations, World Population prospects, the 2012 revision*.
Numbers are computed using age-specific rates and corresponding populations for 10 age-groups.

Egypt
Melanoma of skin
Number of new cancers in 2020 (all ages)



GLOBOCAN 2012 (IARC) (28.1.2017)

Egypt
Melanoma of skin
Number of new cancers in 2020 (all ages) - Both sexes



GLOBOCAN 2012 (IARC) (28.1.2017)

What are the causes and risks for the development of melanoma?

Skin cancer has been increasing sharply for years. People expose the skin to too much UV radiation. Nonetheless, given our background knowledge of the sun's radiation, sun protection and how to deal correctly with UV light, it is still possible to enjoy the sun safely.

- **The following groups of people have a naturally increased risk:**
- Those with a lot of moles
- Those with blonde or red hair, blue eyes and freckles
- Those with a hereditary predisposition (a high incidence of melanoma in the family)

Additional external risks are:

- Intensive, repeated sunbathing
- Five or more painful sunburns before 15 years of age
- The use of tanning studios (solariums)

What role does lifestyle play in melanoma?

A sun protection factor appropriate for the strength of the sun should be used to avoid skin cancer. Sunbathing without UV protection should be avoided.

Children's skin, in particular, is so sensitive that doctors recommend the additional use of UV-protective clothing.

How is melanoma diagnosed?

A doctor can examine the skin and all moles every two years as part of the statutory skin cancer screening programme for people aged 35 and over.

Regular self-examination of your own skin can reveal at an early stage where new skin changes have occurred and existing moles have grown.

The ABCDE rule is useful for early visual detection:

- Asymmetrical structure
- Borders irregular
- Colour not standard
- Diameter greater than 5 mm
- Elevation, raised towards the edges

Additional changes should be investigated by a doctor:

- Increase in size
- Change in shape of existing moles
- Itching
- Bleeding from a mole

How is melanoma treated?

Prompt removal of a melanoma is decisive for recovery. Various factors determine the form of treatment that is most suitable for each individual case and a decision must be made jointly by doctor and patient.

Different forms of treatment are available for melanoma:

Surgery
A malignant melanoma must be completely removed in an operation. The extent of the surgery required depends on the thickness of the tumour as determined histologically.

If the tumour is more than one millimetre deep, the closest lymph nodes in the lymphatic drainage system for the region of skin affected should also be surgically removed and examined. This examination allows a better prediction of the course of the disease. If lymph nodes have already been affected by cancer cells, the lymph nodes close to the melanoma should be removed completely.

Adjuvant treatment
immunotherapy is recommended in addition to surgery in the case of melanomas with a penetration depth of more than 2 mm. The active substance stimulates the body's own defence system to fight any remaining, invisible tumour cells.

Treatment in the event of metastasis
If secondary cancers have already developed in the internal organs (e.g. lungs, bones, liver, brain), radiotherapy, chemotherapy, immunotherapy and combined immunochemotherapy may be given in addition to surgery, as well as what is known as "targeted therapy".

Various products are available for chemotherapy. It is possible to induce regression of the metastasis so that the symptoms resulting from the tumour are alleviated.

Additional information: skin cancer – melanoma – classification of tumour type and tumour stage

The clinical classification, which always takes place in everyday practice before the histological data are available, involves three stages, with Stage I being the presence of a primary tumour alone; Stage II involves regional lymph node metastasis; Stage III is characterised by the dissemination of cancer cells via the blood with distant metastasis and, in particular, organ metastasis.

Staging according to the TNM system

The International Union against Cancer (UICC) has presented a revised version of a T (Tumour), N (Node, lymph nodes), M (Metastasis) classification system from 1987, which distinguishes between Stages I to IV as following Table .

The abbreviation pTis is used (is: in situ) if the tumour present has not yet actually penetrated into the deeper tissue, but melanocyte proliferation in the epidermis with atypical cells has already commenced; this is referred to as a melanoma in situ. This stage is also known as Clark Level I.

pT0 is used if the primary tumour cannot be detected.

The individual categories of the TNM classification describe the primary tumour (pT) and its local spread

Staging according to the TNM system and its metastasis into lymph nodes and distant regions according to the following criteria:

	Primary tumour	Lymph node involvement	Distant metastasis
Stage I	pT1	N0	M0
	pT2	N0	M0
Stage II	pT3	N0	M0
Stage III	pT4	N0	M0
	any pT	N1, N2	M0
Stage IV	any pT	any N	M1

1. Primary tumour (pT)

pT1 Tumour not thicker than 0.75 mm and penetration into the papillary layer of the dermis (Clark level [tumour spread] II)

pT2 Tumour thickness > 0.75 mm but not > 1.5 mm and/or penetration up to the border between the papillary layer and reticular layer (Clark level III)

pT3a Tumour thickness > 1.5 mm but not > 3.0 mm

b Tumour thickness > 3.0 mm but not > 4.0 mm.
Penetration of the tumour into the reticular layer (Clark level IV)

pT4a Tumour thickness > 4.0 mm and/or penetration into the subcutis (Clark level V)

b Tumour thickness > 4.0 mm and/or tumour metastasis (satellites) at a distance of up to 2 cm from the primary tumour

In the event of discrepancies between tumour thickness and level, the pT category is oriented to the least favourable finding in each case.

2. Lymph nodes (Node, N)

N0 No regional lymph node metastasis

N1 Maximum extent of lymph node metastasis < 3 cm in any regional lymph node; N2 maximum extent of regional lymph node metastasis > 3 cm and/or metastasis between primary tumour and nearest lymph node site > 3 cm

3. Distant metastasis (Metastasis, M) (into internal organs, brain, bones, soft tissue)

M0 No distant metastasis

M1 Distant metastasis present

When making a classification into pT categories, it is assumed that what are known as the “critical tumour levels” (0.75, 1.5, 3 and 4 mm) mark biological regions for different prognoses and survival rates. However, large-scale statistical studies have shown that the relationship between survival rate and tumour thickness is linearly proportional and does not make any “jumps”, so that the TNM classification given above should be revised in the future. The version given here will continue to be used until a generally accepted new version is available.