

SKIN CANCERS: DATA AND FACTS

Source for cancer data

The most updated source for worldwide cancer data is represented by the **GLOBOCAN 2020** report of the International Agency of Cancer Research (IARC) (<https://gco.iarc.fr/today>), belonging to WHO; it was issued in December 2020.

The GLOBOCAN 2020, part of IARC's Global Cancer Observatory (GCO), is an online database providing global cancer statistics and estimates of incidence, mortality and prevalence in 185 countries for 36 types of cancer.

Data of GLOBOCAN 2020 is based on incidence and mortality trends from past years; therefore, the effect of COVID 19 is not considered. We can assume that because of the lockdown there have been possible delays in cancer diagnoses. Unfortunately, the quality and coverage of cancer data are unsatisfactory particularly for low - and middle-income countries; to overcome this issue IARC launched the [Global Initiative for Cancer Registry Development \(GICR\)](#).

For Europe – in addition to Globocan 2020 - the main source of information is represented by the **European Cancer Information System (ECIS)** (<https://ecis.jrc.ec.europa.eu>). It was launched in 2018 and considers the data submitted by population-based European cancer registries (PCR). Unfortunately, ECIS does not consider “non-melanoma skin cancers”; its analysis is limited to melanoma.

On the contrary the Globocan report includes both melanoma (MM) and non-melanoma skin cancers (NMSC) even if the data related to NMSC lacks in reliability since in several countries it is not common to report NMSC cases in a systematic and reliable way. In addition, data of incidence excludes basal cell carcinomas (BCC) that on the contrary are included in mortality data.

Other sources – specifically devoted to skin cancers - are:

- Cancer Council Australia - Skin cancer incidence and mortality - Skin Cancer Statistics and Issues. https://wiki.cancer.org.au/skincancerstats/Skin_cancer_incidence_and_mortality
- Cancer Australia. Melanoma of the skin statistics. Cancer Australia. [Online] 23 May 2019. <https://melanoma.canceraustralia.gov.au/statistics>
- 2020 Melanoma Skin Cancer Report – issued by the Global Coalition for melanoma patient advocacy (www.melanoma.org) and by Euromelanoma (www.euromelanoma.org).

Main outcomes

At a worldwide level with 1,5 million new cases a year skin cancer (melanoma and non-melanoma) represents the 4th most common types of cancer after breast (2,3 million new cases), lung (2,2 million) and colorectum (1,9 million) cancers. By considering that many countries do not officially record cases of NMSC, the real incidence is much larger (several millions) and it makes skin cancer the world's most common cancer.

Fortunately, melanoma and non-melanoma skin cancers remain two of the most treatable cancers; in absolute value mortality is low in comparison with other types of cancer (in 2020 63.731 deaths for NMSC and 57.043 for MM representing the 22nd and 23rd causes of death among all types of cancer).

5 years prevalence (people alive diagnosed with skin cancer within the past five years) is equal to 6,5 million persons for NMSC and 1,1 million for MM. It means that in total more than 7,5 million persons need checks and treatments for skin-related cancer problems. In terms of 5 years prevalence skin cancers represent the 2nd most common type of cancer, after breast cancer (7,8 million).

The diagram of fig. 1 reports the incidence, mortality, 5 years prevalence and mortality-incidence rate (MIR)¹ of non-melanoma skin cancers and melanoma.

For incidence and mortality, the figure reports absolute values and the ASR (age standardized rate i.e., the number of cases per 100.000 inhabitants by assuming a standard age structure for all countries / regions).

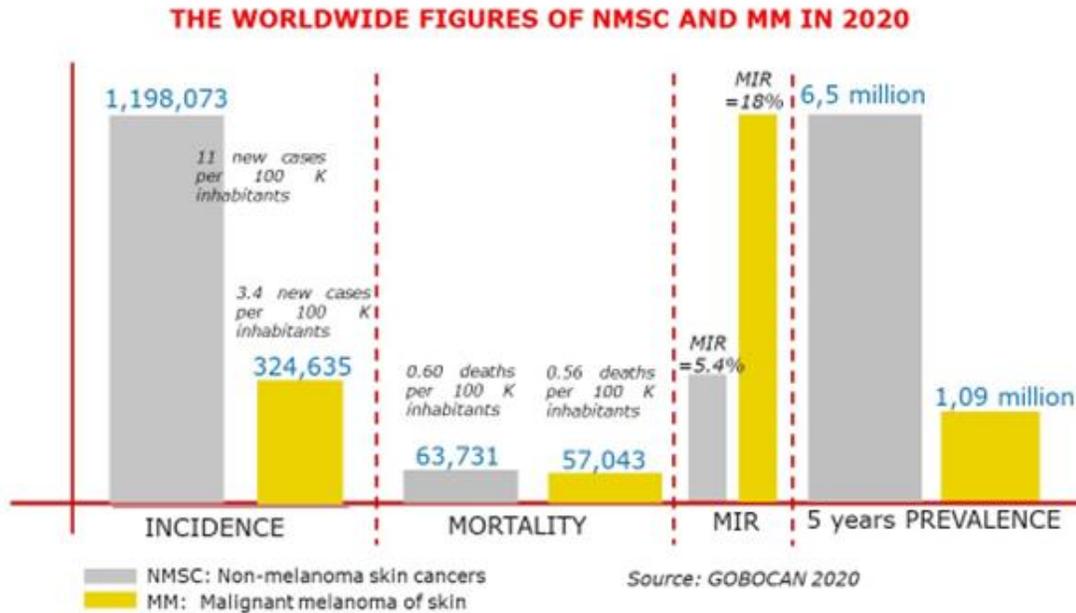


Fig. 1: Worldwide data for non-melanoma skin cancers and melanoma (source: Globocan 2020).

Skin cancers by sex and by age

Skin cancer by sex

For both, melanoma and non-melanoma skin-related cancers, male citizens are the most affected ones in terms of incidence, mortality, and prevalence.

An exception is represented by the mortality to incidence rate (MIR) for NMSC.

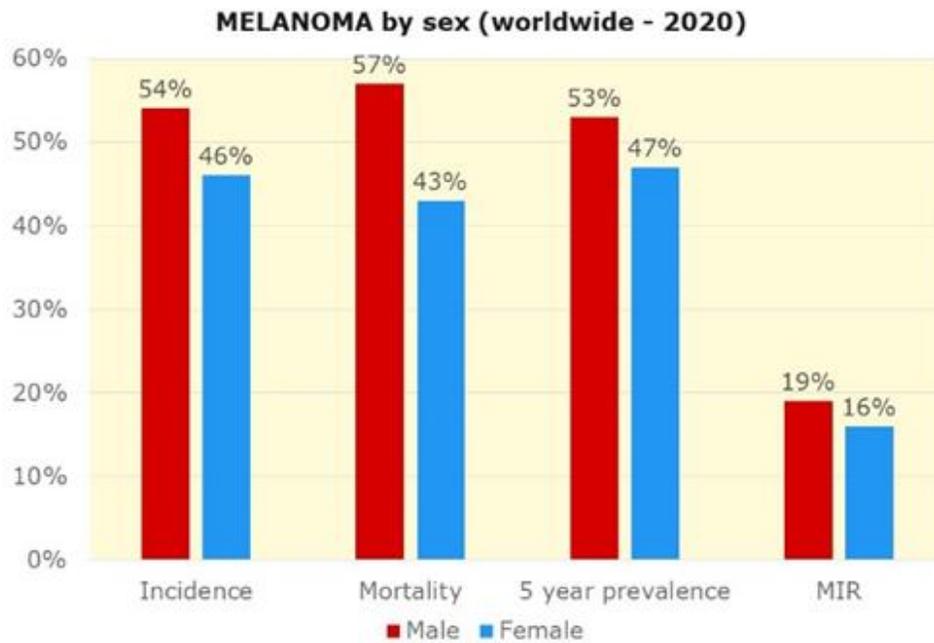


Fig. 2a: Melanoma by sex (worldwide – 2020; source: Globocan 2020).

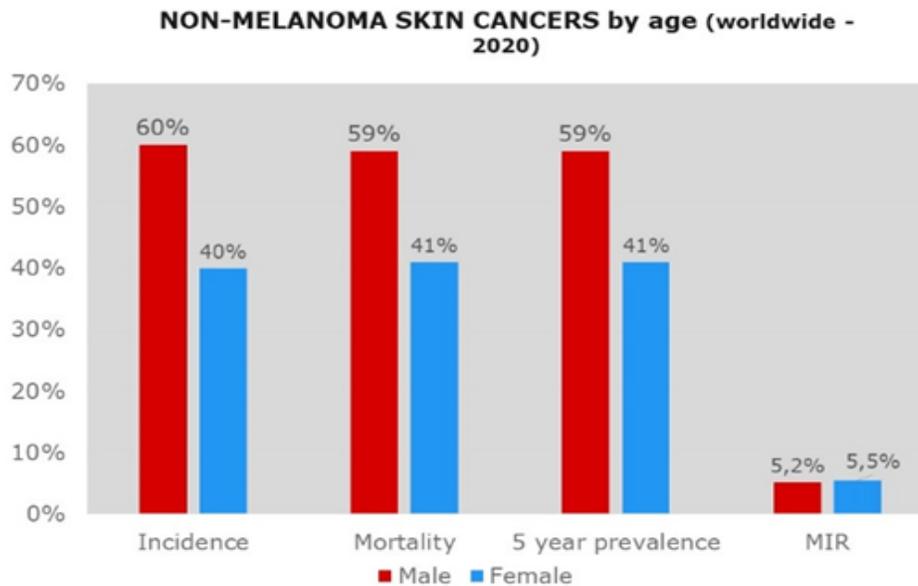


Fig. 2b: Non-melanoma skin cancers by sex (worldwide – 2020; source: Globocan 2020).

Skin cancers by age

Regarding age range, the citizens older than 65 years are those most affected by skin-related diseases and mainly by NMSC (in the range of 70 to 81% of the whole population).

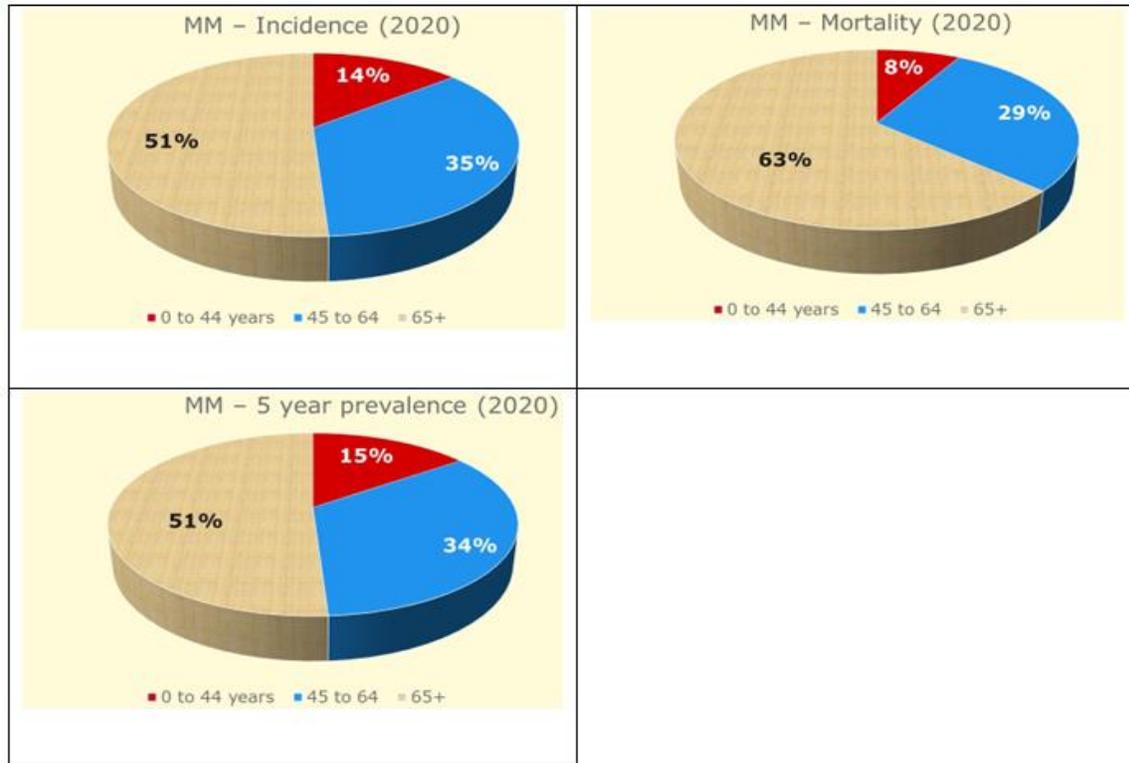


Fig. 3a: Melanoma by age (worldwide – 2020; source: Globocan 2020)

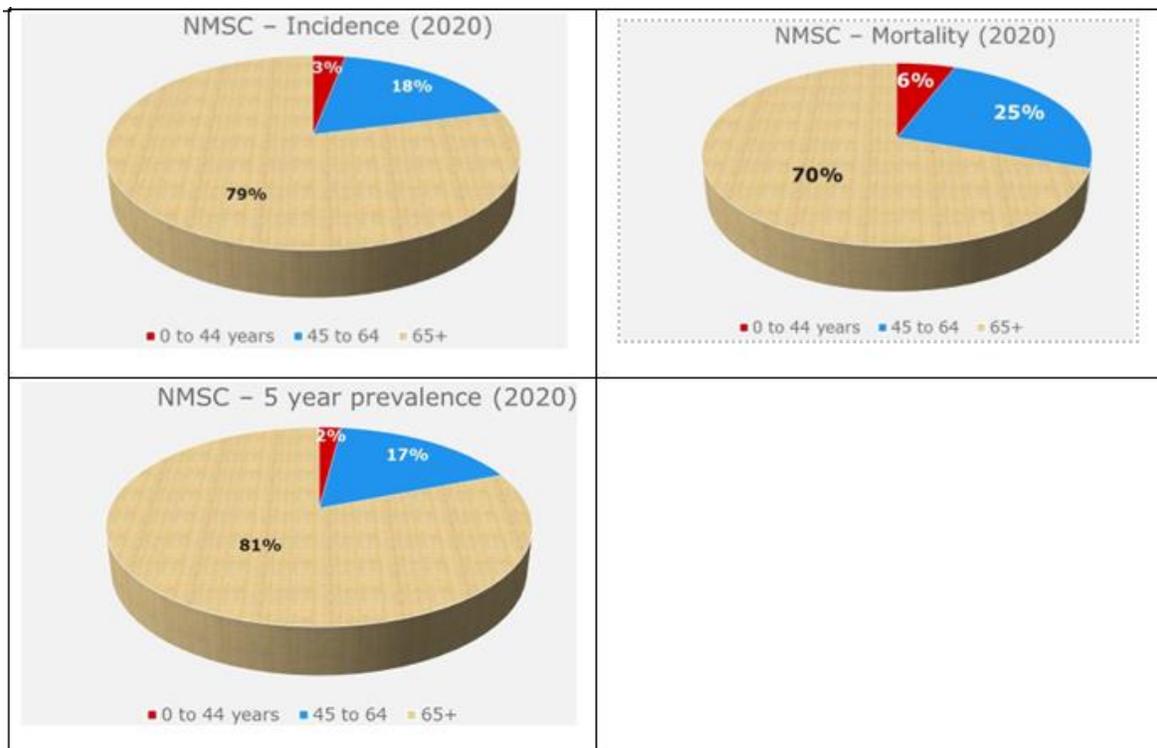


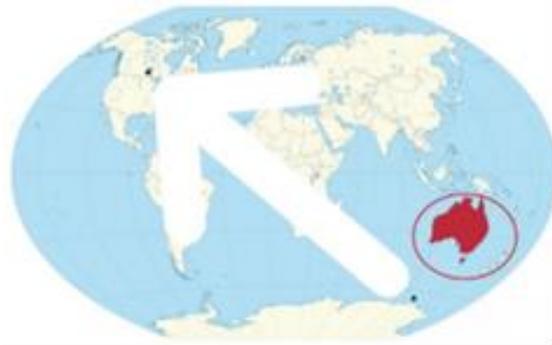
Fig. 3b: Non-melanoma skin cancers by age (worldwide – 2020; source: Globocan 2020)

Worldwide distribution of skin cancers

Incidence of skin cancers is highly influenced by environmental factors such as:

- Exposure to UV radiation from sunlight.
- Lifestyles and socio-economic determinants (occupation and occupational exposures, smoking, recreational sun exposure).
- Economic situation.
- Ethnicity.
- Personal/genetic factors.

Consequently, a characterization of melanoma by geographical areas is a too simplistic approach since in the same area we could have countries or territories with different characteristics.



Nevertheless – with few exceptions (e.g., Australia and New Zealand) – the burden of skin cancers is increasing moving from south to north and from east to west.

Australia and New Zealand are the countries with the highest rates of incidence and mortality (cases per 100.000 inhabitants) both for melanoma and non-melanoma skin cancers. For melanoma they represent the only exception since all the geographical areas with incidence and mortality above the world's average are in the western part of the northern hemisphere.

For non-melanoma the exception includes Southern Africa also.

North America - even if behind Australia and New Zealand - has a high incidence rate for non-melanoma skin cancers (ASR of 64 against an ASR of 16 in Europe).

Mortality for skin cancers has a distribution like incidence both for melanoma and NMSC.

In the **EU 27** skin melanoma is the fifth most diagnosed cancer in both men (after prostate, lung, colorectal and bladder cancers) and women (after breast, colorectal, lung and corpus uteri cancers). It is one of 15 most frequent causes of cancer death, in both sexes.

There are national and regional exceptions and large variability among EU-27 countries:

- Estimated skin melanoma incidence rates in 2020 vary six-fold across EU-27.
- Mortality rates vary three-fold.

- The overall skin melanoma trends are increasing for both incidence and mortality, but with a large variability among EU-27 countries; this in part reflects variations in cancer management and treatment.

MELANOMA

Region	Incidence		Mortality		Prevalence Units
	Units	ASR	Units	ASR	
AFRICA	6,963	0.9	2,679	0.37	15,643
LATAN & CARIBBEAN	18,881	2.3	5,657	0.68	55,663
NORTHERN AMERICA	105,172	16.1	8,412	1.1	368,049
ASIA	87,040	1.5	11,986	0.21	68,197
EUROPE	150,627	11.4	26,360	1.6	517,196
OCEANIA	19,239	30.1	1,949	2.5	68,070
WORLDWIDE	324,635	3.4	57,043	0.56	1,092,818

Table 1a: Melanoma across the world - source: Globocan 2020)

NON-MELANOMA SKIN CANCERS

Region	Incidence		Mortality		Prevalence Units
	Units	ASR	Units	ASR	
AFRICA	27,037	3.4	8,602	1.2	66,369
LATAN & CARIBBEAN	71,319	8.1	8,065	0.85	228,685
NORTHERN AMERICA	586,575	64	5,385	0.59	3,507,749
ASIA	23,753	0.42	27,765	0.47	275,716
EUROPE	356,180	16	12,679	0.51	1,953,260
OCEANIA	69,922	115	1,235	1.5	427,106
WORLDWIDE	1,198,073	11	63,731	0.6	6,458,885

Table 1b: Non-melanoma skin cancers across the world - source: Globocan 2020

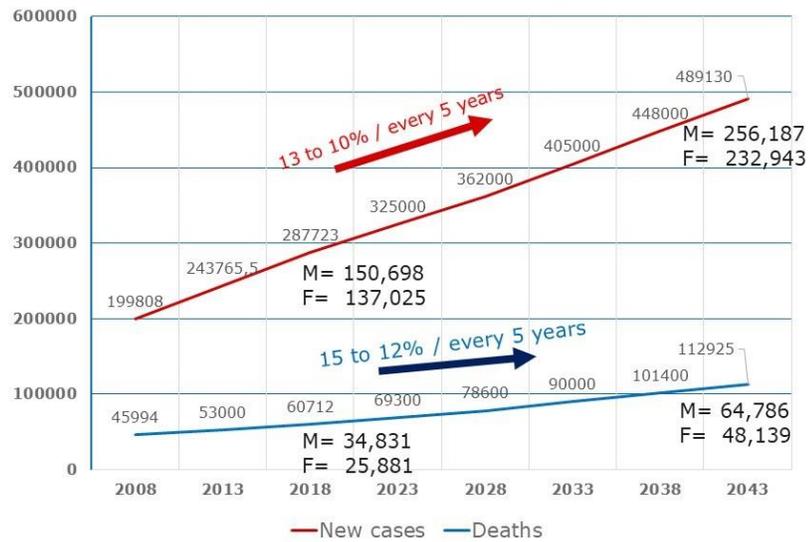
Expected growth of melanoma and non-melanoma skin cancers

Incidence and mortality for melanoma and non-melanoma skin cancers are rising with an estimated average rate of about 15 % every 5 years.

Melanoma – Trend of incidence and mortality (worldwide)

"The world has a melanoma problem... and it's getting worse"

from "2020 Melanoma Skin Cancer Report" issued by Global Coalition for melanoma patient advocacy, 2010



Source: Global Cancer Observatory (Globocan 2018) - WHO

Fig. 5a: Trend in the melanoma incidence and mortality.

Non-melanoma skin cancers – Trend of incidence and mortality (worldwide)



Source: Global Cancer Observatory (Globocan 2018) - WHO

Fig. 5b: Trend in the non-melanoma skin cancers incidence and mortality.

This evolution is related to:

- The ageing of the population associated with a higher risk of NMSC.
- An inadequate awareness by the citizens and a lack of confidence on the success of preventative policies.

- An increased occupational and recreational UV light exposure. For example, studies have shown that indoor tanning is associated with a significantly increased risk of NMSC (basal cell carcinomas, BCC, and squamous cell carcinomas, SCC) with a higher risk when indoor tanning is practiced in early life (< 25 years)).