INCIDENCE OF MELANOMA IN PEOPLE AGED UNDER 55 YEARS

FACT SHEET 4.2 ● December 2009 ● CODE: RPG4_UVrd_E1

Incidence of melanoma as defined by ICD-10 codes C43, D03 in the population aged under 55 years

KEY MESSAGE

☹ The incidence of melanoma skin cancer in people under the age of 55 years in Europe varies considerably among countries. The highest incidence is found in northern and western and the lowest in southern European countries, with rates from three to eight times lower for men and women, respectively. In eastern European countries, incidence is low to intermediate. These variations are likely to be linked to specific behaviour (winter holidays, sun seeking) as well as to improved rates of diagnosis resulting from better detection of melanoma.

RATIONALE

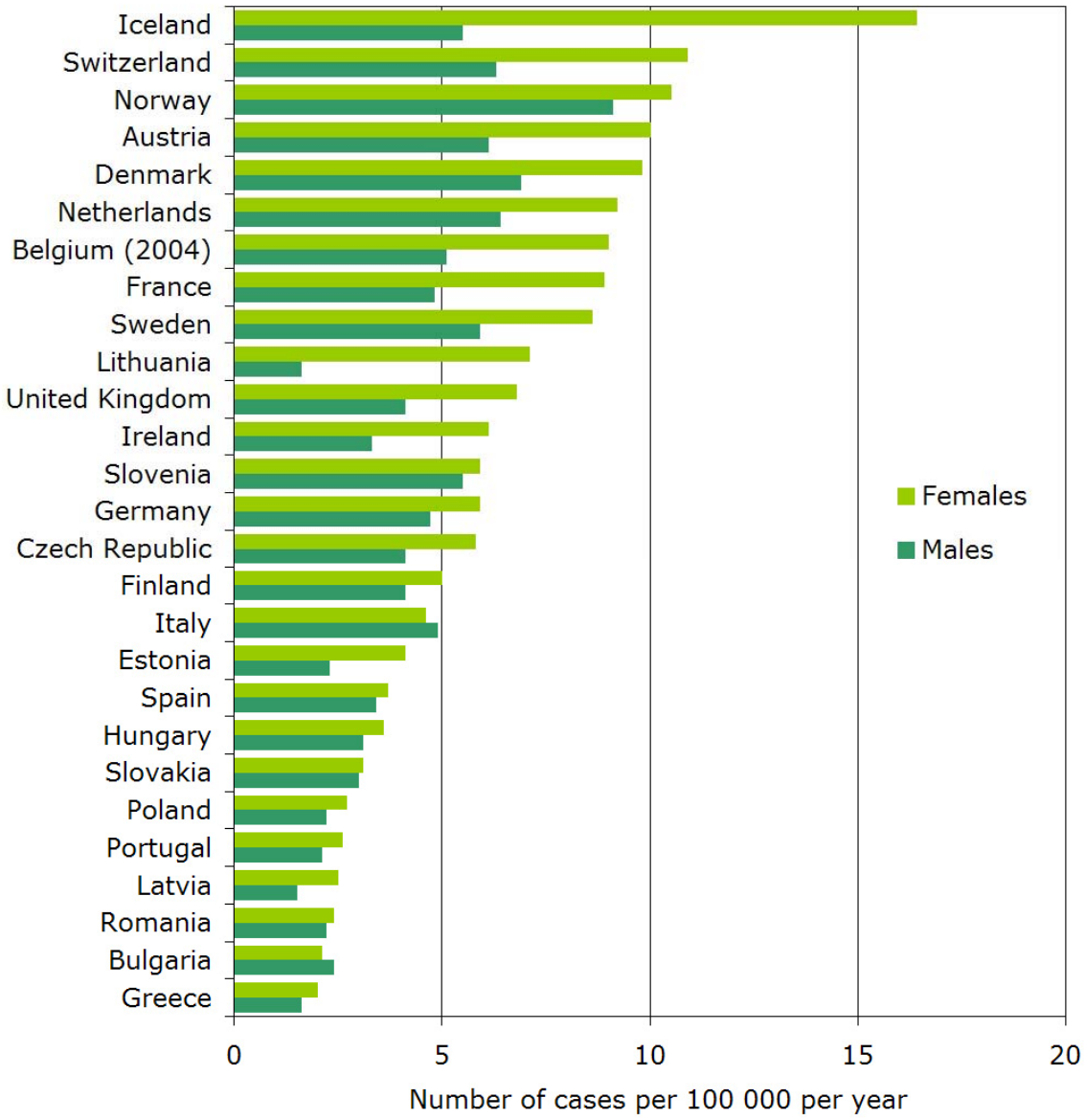
Acute, irregular and excessive exposure to the sun, mainly during childhood, by people with fair skins is a major risk factor for melanoma, a malignant cancer of pigment cells in the skin. Considering the 20–40-year time-lag between exposure to the sun and onset of the cancer, the incidence of melanoma among people aged under 55 years and the respective time trends will be a good indicator of the final success of action against excessive exposure to ultraviolet (UV) radiation during childhood.

PRESENTATION OF DATA

Fig. 1 presents the variations among countries in the age-standardized incidence of melanoma in Europe. Rates generally refer to the year 2000 or earlier, as published by the International Agency for Research on Cancer (IARC) (1).

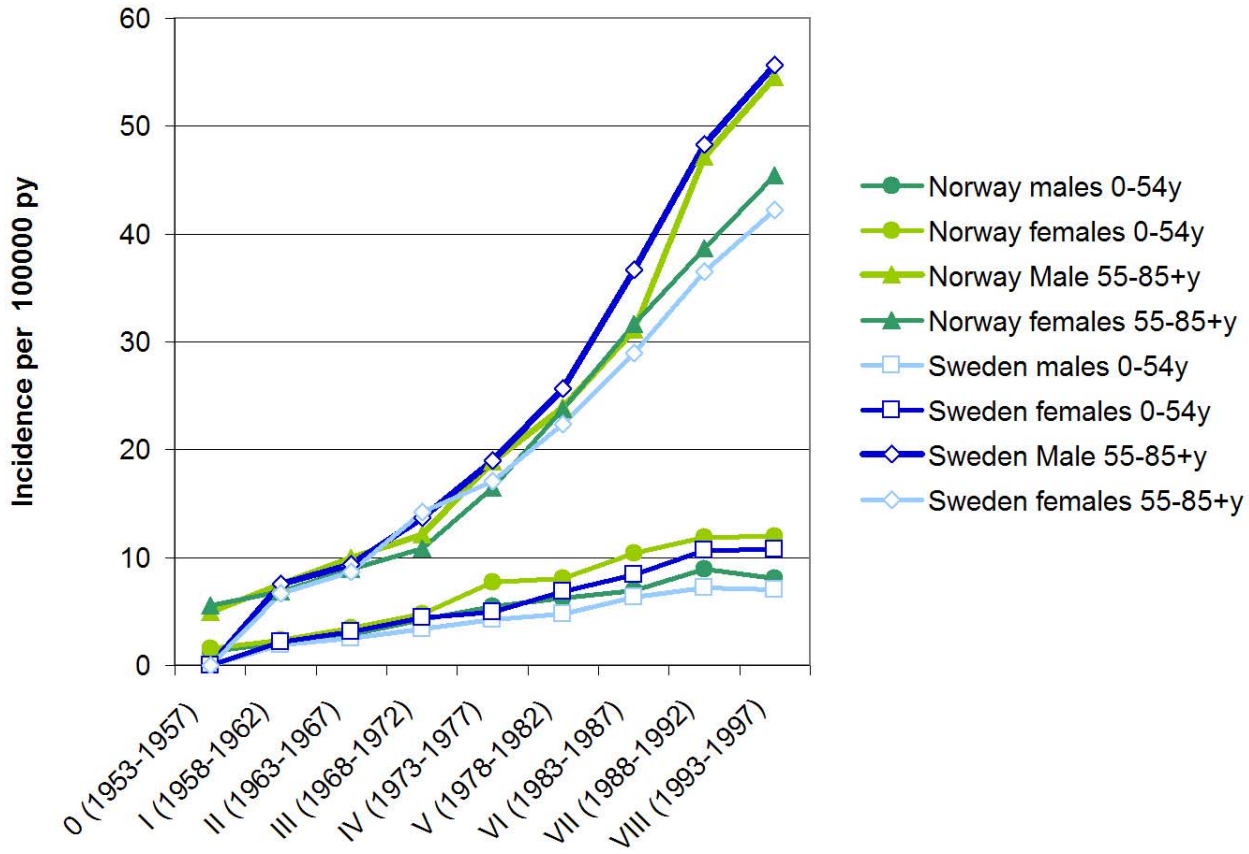
The data in Fig. 2 are derived from the IARC registries database (2). They show trends over time in the incidence of melanoma for two Scandinavian countries, Norway and Sweden, illustrating the recent levelling off or falling trend in incidence among those under 55 years of age compared with older people.

Fig. 1. Age-standardized incidence of melanoma in people aged under 55 years, selected European countries, around 2000



Source: GLOBOCAN (1).

Fig. 2. Time trends of melanoma incidence in Norway and Sweden, 1953–1997



Source: IARC (2).

HEALTH AND ENVIRONMENT CONTEXT

It is estimated that in 2002, 9219 males and 12 303 females under the age of 55 years were diagnosed with melanoma in the European Union and the accession countries (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia). Melanoma is a malignant transformation of the pigmentation cell (melanocyte) of the skin (3). Most cases of melanoma seem to be caused by acute, intermittent and excessive exposure to the sun, mainly during childhood, although exposure in adulthood also contributes to the risk. Fitzpatrick skin types I and II (pale white or fair skin), large numbers of naevi or atypical naevi, and a family history of skin cancer are the most important predictors of melanoma risk (4).

Melanoma occurring in those aged under 55 years seems to be strongly linked to exposure to UV radiation in childhood (11). This type of melanoma is often localized on the trunk of the body in males and on the legs in females. The fact that melanoma in the elderly occurs on the most chronically exposed parts of the body indicates that chronic exposure is more important for melanoma occurring among elderly people. The use of sun beds is an additional risk factor for melanoma (12). Melanoma is more frequent among people in the higher socioeconomic groups and among northern European populations. This is probably due to their higher excessive intermittent exposure to UV radiation combined with a light skin type.

The main way to prevent melanoma is to advise people to limit their exposure to the sun by avoiding such exposure during the time of day when UV radiation is most intense (approximately two hours each side of the solar noon) and to wear appropriate clothes, headwear and sunglasses. Special attention needs to be paid to children. The use of sun-screen preparations may help to prevent sunburn and skin cancer but may also lead to increased exposure to the sun. Survival is strongly linked to the stage of the disease at diagnosis, which provides a rationale for considering organized screening programmes for melanoma. However, evidence for the reduction of melanoma mortality through organized screening programmes is not yet available. Since the incidence of melanoma is expected to increase further in the future, early detection remains an important means of combating the disease. Prevention campaigns carried out in north-western European countries since the 1980s have probably

resulted in a decrease in the average thickness of melanomas and a stabilization of melanoma mortality in young people (5). Further, there is evidence that sun protection effectively lowers the number of melanocytic naevi in children (13).

POLICY RELEVANCE AND CONTEXT

Melanoma is strongly linked with exposure to UV radiation during childhood and is therefore largely preventable. WHO has launched the INTERSUN Global UV Project to stress the importance of increasing awareness and knowledge about the potential negative health effects of exposure to UV radiation, especially during childhood (6). This information should be readily available through various channels such as television, radio, campaigns and meteorological web sites and in schools. Representatives of the tourism industry can also play a crucial role in minimizing the risks associated with exposure to the sun by disseminating information to their customers and by taking essential measures in tourism facilities and services. A UV radiation index can help to identify appropriate action based on the measured UV radiation levels. Further, the use of sun beds by children should be strongly discouraged, if not forbidden. The INTERSUN Project recommendations can serve as a framework for a European action plan to reduce exposure to UV radiation. The beneficial effects of UV on health, such as Vitamin D production, are not jeopardized through comprehensive actions to decrease excessive UV radiation exposure. Short daily UV exposures, well below the levels that induce sunburn, stimulate Vitamin D production during sunny seasons. During other times, and for specific population groups, Vitamin D supplementation rather than extensive UV exposure is recommended by many professional societies.

There are at present few official regulations in most European countries (see ENHIS-2 fact sheet No. 4.8 of April 2007 on policies to reduce excessive exposure of children to UV radiation (7)). There are thus major opportunities for developing policy as well as for harmonizing and strengthening efforts to reduce such exposure. National policies to reduce exposure to artificial UV radiation – including regulations for the use of sun beds by children and teenagers – should be implemented in more countries in the WHO European Region. Excessive exposure to solar UV radiation can best be prevented by regional and local awareness-raising and information campaigns, especially in educational institutions. The aim is to encourage schoolchildren to take measures to protect themselves against the sun.

ASSESSMENT

Melanoma is one of the cancers with the fastest rates of increase among Caucasian people in Europe. Trends in rates differ between regions: in northern Europe, where the rates are high, they appear to have levelled off since the 1990s, particularly among people aged under 55 years (Fig. 2). This seems to be the result of a change in sun-seeking and protective behaviour against UV radiation among the younger generations. In contrast, in southern and eastern Europe, the rates are generally still increasing steeply in all age groups (8,9).

Currently, in almost all European countries, the incidence is higher in women than in men. Estimates of the age-standardized (world standard population) rate for women vary from under 2 to over 16 per 100 000. There is a strong geographical correlation between the European subregions and the incidence of melanoma in people aged under 55 years. The highest rates are found in northern (Denmark, Norway and Sweden) and western European countries (France, the Netherlands and the United Kingdom), with an incidence of 6–9 per 100 000 for males and 8–16 per 100 000 for females. Austria and Switzerland have among the highest rates for both sexes: around 6 per 100 000 for men and around 10 per 100 000 for women. The lowest incidence is found in southern Europe (Greece, Italy, Portugal and Spain) with rates of 2–4 per 100 000 for both men and women. In eastern Europe, the rates vary from low (under 2 per 100 000 in Bulgaria, Latvia and Romania) to intermediate (up to 6 per 100 000 in Lithuania and Slovenia).

The main way to prevent melanoma is to advise people to limit their exposure to the sun. National and European policies should, therefore, pay more attention to preventing excess exposure to UV radiation during childhood (following the INTERSUN Project recommendations). The levelling off since the 1990s of the previously rising trends in northern Europe among people aged under 55 years supports the notion that specific UV protection activities are being effective in these countries.

DATA UNDERLYING THE INDICATOR

Data source

The main source of data used for this report is the European Globocan 2002 web site (1), augmented by newer data from individual cancer registries. The IARC data from Cancer incidence in five continents (CI5) (10) are used to illustrate time trends in incidence in Scandinavia, with estimates based on the registers.

Description of data
The methodology sheet proposed the reporting of incidence as the number of cases per 100 000 person-years in people aged between 0 and 49 years. The Globocan data allow only estimations between 0 and 54 years of age. Data for this age group have been used, since they allow more countries to be included in the comparisons. Most of the registries in Europe have data available from the beginning of the 1980s and allow the investigation of time trends. Cancer registration is a continuous procedure and summary reports are usually produced annually. However, owing to the time required for data management and production of reports, there is often a time lag of 1–2 years until the data are publicly available.

The IARC C15 data allow world-standardized estimates to be made of the incidence of melanoma by age for six periods between 1953–1957 and 1993–1997.

Method of calculating the indicator
Incidence in people aged under 55 years is the number of cases during the period of consideration divided by the number of person-years in the population targeted. It is given in the number of new cases per 100 000 person-years. The incidence is given by calculating the number of cases on the mean population size during the period considered. The age-standardized rate (world standard) is calculated using the age groups. The age group considered here are those aged 0–54 years.

Geographical coverage
Melanoma national incidence estimates of 27 European countries.

Period of coverage
The disease rates are not those for 2002 but are taken from the most recent data available, generally 2–5 years earlier, derived from IARC data. For Belgium, data from 2004 are used.

Frequency of update
Every five years.

Data quality
Globocan data have been chosen because they give the best estimates of national incidence in the European countries. At the time of writing, Bulgaria, Greece, Hungary and Romania did not have good-quality population-based cancer registries and the incidence rates are, therefore, based on those of neighbouring countries combined with information from mortality statistics. Some other countries do not have nationwide cancer registries, so the information is based on regional incidence information (the figures in brackets are the number of registries, none of which covers the whole country): Austria (2), France (10), Germany (1), Italy (16), Poland (4), Portugal (1), Spain (11) and Switzerland (9). Because the sources of data are continually improving in quality and extent, estimates may not be truly comparable over time and care should be taken when comparing these estimates with those published earlier. The differences observed may be the result of a change to the methodology and should not be interpreted completely as a time-trend effect. The IARC C15 data appear to be more reliable since they rely on registers. They are, however, subject to the possibility of error concerning classification and data collection. Unfortunately, most of the registers are local rather than national, which impedes the use of these data for European comparisons.

SUGGESTIONS FOR FURTHER MONITORING

Comparable methods of collection, classification, description and registration of information are important to allow comparisons of melanoma incidence and mortality. The increasing quality and population coverage of European cancer registries are a good basis for future monitoring efforts. Comprehensive national data registries for melanoma are of crucial importance. Estimates of mortality from melanoma are an important co-indicator, since melanoma prognosis is strongly correlated with the thickness of the tumour at diagnosis.

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13. *English DR, Milne E, Simpson JA. Sun protection and the development of melanocytic nevi in children.* Cancer Epidemiology, Biomarkers & Prevention, *2005, 14:2873–2876.*

FURTHER INFORMATION

WHO-IARC mortality database [online database]. Lyon, International Agency for Research on Cancer, 2007 (http://www-dep.iarc.fr/, accessed 11 August 2009).

Further information on the control and use of sun beds

UV-radiation of sun beds. Common public health advice from Nordic radiation protection and health authorities. Danish National Board of Health, Finnish Radiation and Nuclear Safety Authority, Icelandic Radiation Protection Institute, Norwegian Radiation Protection Authority, Swedish Radiation Protection Authority (http://www.euroskin.eu/downloads/sunbedsnordic.pdf, accessed 11 August 2009).

Sunbeds, tanning and UV exposure. Geneva, World Health Organization, 2005 (Fact sheet No. 287) (http://www.who.int/mediacentre/factsheets/fs287/en/index.html, accessed 11 August 2009).

Further information on recommendations on exposure of children to UV radiation

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