

ULTRAVIOLET RADIATION

Skin cancers are caused by ultraviolet radiation and can be prevented by sun protection and banning sunbeds.

A majority of skin cancers are caused by ultraviolet (UV) radiation. Keratinocyte skin cancers (basal cell and cutaneous squamous cell carcinomas) are the most common human cancers with over 13 million cases estimated each year worldwide. While rarely fatal, keratinocyte cancers cause substantial burdens of morbidity and cosmetic concern (most occur on the face). Melanoma is a more fatal form of skin cancer with about 69,000 deaths and 350,000 cases annually worldwide. In many countries skin cancers pose a significant economic burden due to their sheer numbers and the high cost of treatment for metastatic melanoma. **FIGURE 6.1**

UV radiation comes from the sun, filtered by stratospheric ozone. The UV Index measures the intensity of sunburn-causing UV reaching the Earth’s surface on a scale of 1 (low) to 11+ (extreme) and varies with latitude, altitude, time of day and year, cloud cover, and air pollution. In summer, the UV Index averages around 12 in Bangkok, Thailand (14°N); 9 in Sydney, Australia (34°S); 8 in New York, USA (41°N); 7 in Berlin, Germany (52°N) and 5 in St Petersburg, Russia (60° N). Cosmetic tanning devices also emit UV radiation, often stronger than summer sun, and are classified as human carcinogens; however, their use remains high, particularly in Europe and North America. **FIGURE 6.2** Banning these devices brings potentially high savings of lives and costs.

Inherited risk factors for skin cancer, such as light skin and red hair, and having freckles and moles, influence the effects of ambient UV and occupational and recreational sun exposure. Skin cancer is rare in people with innately dark skin. Risk is higher with high UV exposure in childhood.

When the UV Index is 3+, skin can be protected by avoiding outdoor activities in the middle of the day; providing effective shade outdoors; wearing hats, clothing cover and sunglasses; and applying sunscreen of Sun Protection Factor 15+ or higher. In contrast to many European countries, Australia began implementing UV protection campaigns in the 1980s, and rates of melanoma are now decreasing in younger generations. **FIGURE 6.3**

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There is no such thing as a healthy tan.
— World Health Organization

FIGURE 6.3
Age-standardized incidence rates (world) per 100,000, invasive melanoma, persons aged <25 years by sex in Australia and England, 1990–2010



ACCESS CREATES PROGRESS

Rates of melanoma are decreasing in young people in Australia.

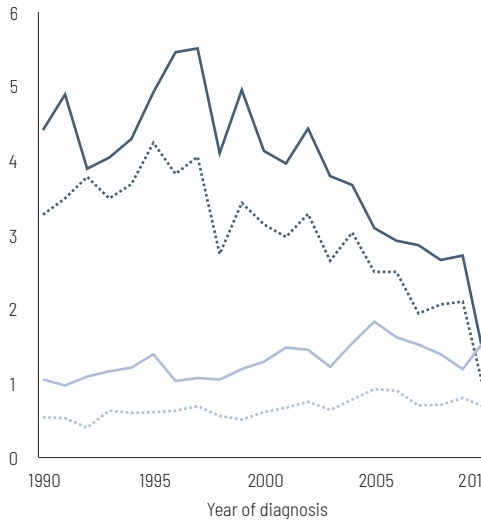
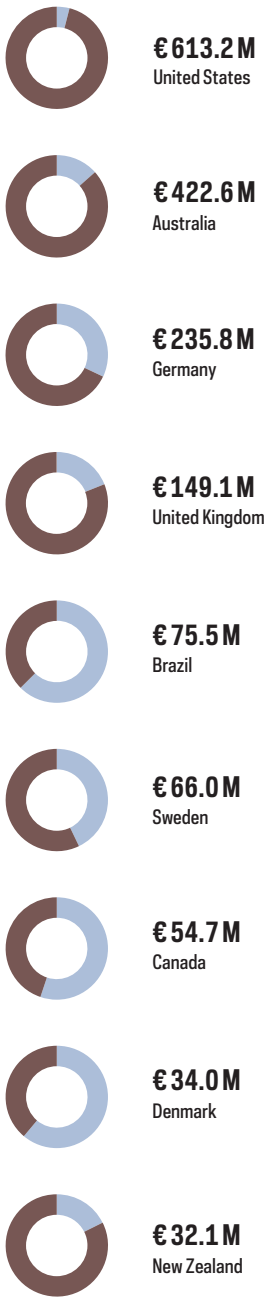
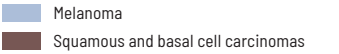


FIGURE 6.1
Direct costs of melanoma skin cancers and squamous cell carcinomas and basal cell carcinomas combined, 2013 Euros (millions)



Skin cancers create a substantial economic burden in many countries.

MAP 6.1

Melanoma skin cancer incidence, age-standardized rate (world) per 100,000, both sexes, 2018

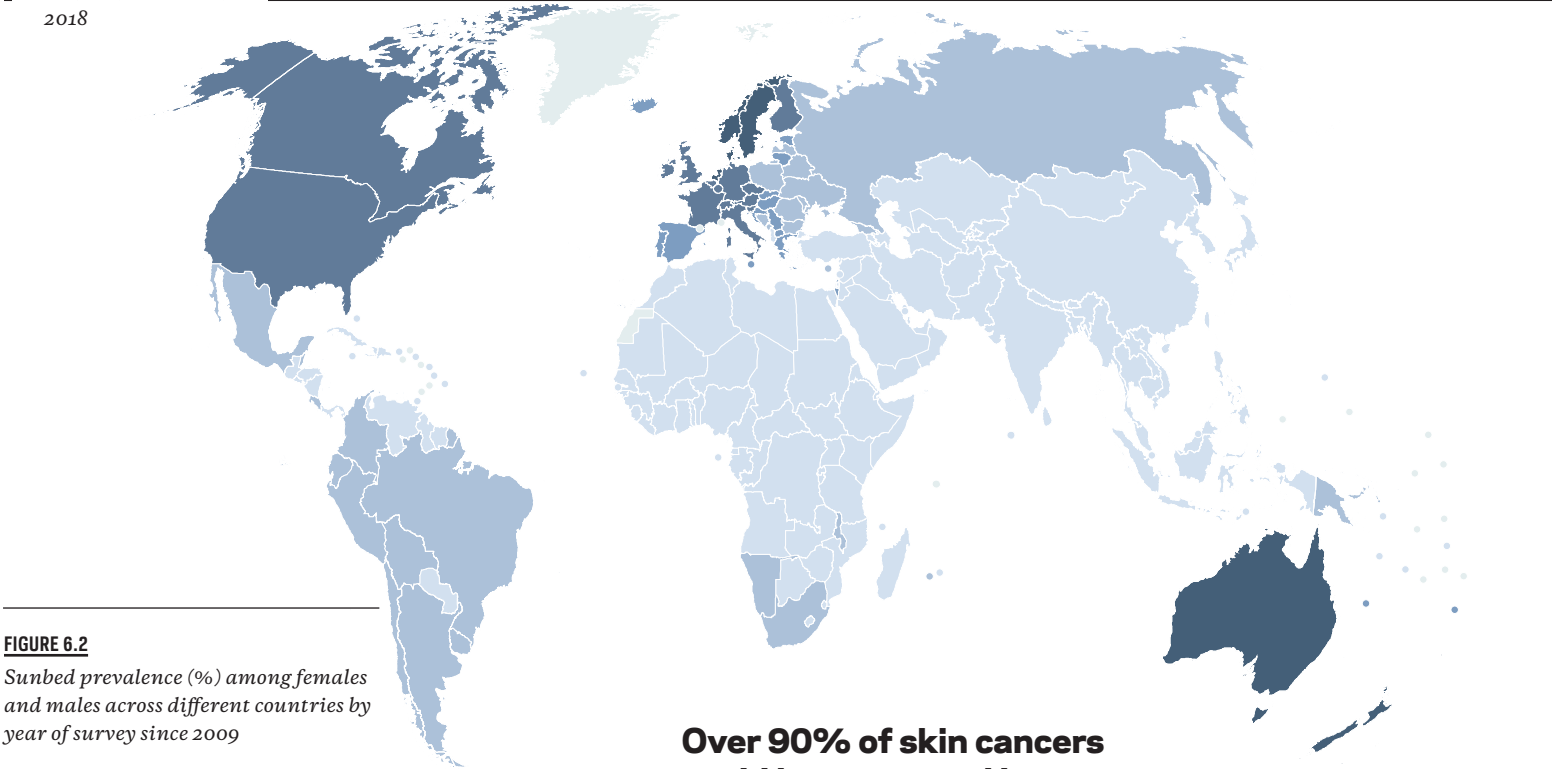
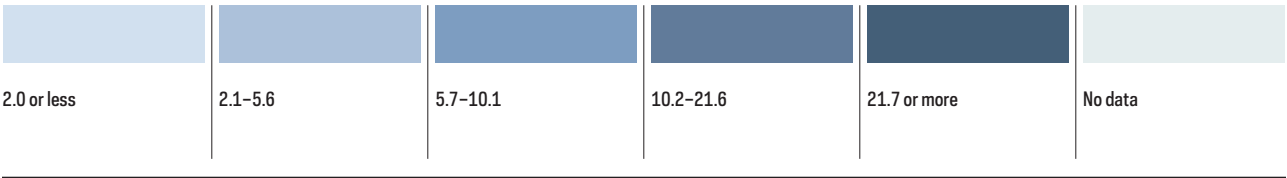


FIGURE 6.2
Sunbed prevalence (%) among females and males across different countries by year of survey since 2009

