

# **Epithelial skin cancers in Europe**

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Epithelial skin cancer, which includes squamous and basal cell carcinomas, is the most frequent cancer in humans. With over 10 millions estimated new cases of basal cell carcinomas (BCC) and nearly 3 millions squamous cell carcinomas (SCC) diagnosed each year worldwide, epithelial skin cancer is an important challenge of public health management.

Epithelial skin cancer affects predominantly fair-skinned populations. It is fortunately a highly treatable disease and over 99% of subjects diagnosed with BCC or SCC survive. Because of its high frequency, epithelial skin cancer kills nevertheless about 16'800 people per year in the world (BCC: 3250 / SCC: 13'530). It occurs at a relatively advanced age, on average, 70 years for BCC and 75 years for SCC. Both types of tumour are more commonly diagnosed in men than women and their frequencies increase proportionally with proximity to the equator.

Epithelial skin cancer induces substantial morbidity from disfigurement, as the lesion is predominantly found on the head and neck. It also represents a considerable economical burden to national health systems. This is for instance the single biggest contributor to cancer-related health costs in Australia, the country with the highest incidence of epithelial skin cancer in the world. In Europe, epithelial skin cancer bear an ever increasing economic impact. Hospitalisations due to skin cancer cost 281 millions USD (about 3.4 USD per capita) each year in Germany.

The incidence rate of epithelial skin cancer is rapidly increasing and has reached epidemic proportions. It is about 20 times greater than for melanoma, the most lethal form of skin

cancer. For a child born in the mid 1990s, the lifetime risk of developing a BCC is about 30% and for SCC around 10%.

The major culprit is UV radiation. There is persuasive evidence that a large fraction of SCC and BCC are caused by sun exposure. Once an individual has developed an epithelial skin cancer, he/she remains at increased risk of developing a new one within the next few years. Ionizing radiation, some hydrocarbons, arsenic, chronic immunosuppression and human papilloma virus infection are the main other known risk factors. However, the causes of skin cancer are today not yet fully elucidated.

Cultural and lifestyle changes during the 20<sup>th</sup> century have favoured and stimulated a substantial increase in sun exposure among fair-skinned populations. Outdoor leisure activities and holidays in sunny climate have become commoner, and changes in clothing style has led to progressively greater skin surfaces being sun-exposed. Tanning is largely regarded as being cosmetically desirable (“healthier look”) and use of readily accessible artificial sources of UV (sunbeds) for tanning purposes has hugely increased in Europe. Individuals with blue eyes, red or blond hair, a fair complexion which sunburns easily, suntans poorly and freckles with sun exposure are the most at-risk for skin cancer.

Prevention of epithelial skin cancer is important because the prognosis improves substantially with early detection. Fortunately, epithelial skin cancer is potentially one of the most avoidable cancer. Lesions are accessible to visual inspection, hence amenable to early detection, and the major risk factor, UV exposure, can largely be reduced by changes in sun behaviour. Wearing protective clothes, avoiding direct sunlight between 11am and 3pm during summer (when UV irradiance is at its peak), seeking shade and applying regularly broad spectrum sunscreens are the main recommended means of UV protection. Special care should be taken to protect children as, for BCC at least, overexposure to the sun during childhood appears to increase the lifelong risk of skin cancer. SCC rarely occurs before age

50 and is particularly common among outdoor workers which are chronically exposed to the sun. Education applies not only to patients but also to physicians who need to be sensitized how to detect skin cancers early.

It requires time to observe the impact of various preventive measures. Evidence supporting the efficiency of sun protection initiatives in several countries is growing. Common strategies of prevention, control and research into epithelial skin cancer in Europe are being developed to improve the understanding of this disease and the efficiency of prevention. This is an important battle against a cancer which will increase in numbers just because of Europe's ageing demographic.