

Scientific Newsletter

5th edition

**An analysis of recently published research
in relevant fields
March 2019**



1st study:

Modelling first-year cost-of-illness of melanoma attributable to sunbed use in Europe

Krensel et al., 2019

published in "Journal of the European Academy of Dermatology and Venereology, March 2019

Objective

Melanoma is a life-threatening disease of the skin with an increasing incidence of approximately 87,000 new cases treated per year in the European Union and the European Free Trade Association states **resulting in considerable costs for the society**. Since the **use of sunbeds is known to be a risk factor**, which can be easily avoided, **costs** of malignant melanoma **attributable to sunbed use** are modeled in the present study.

Results

After adjusting **melanoma treatment costs** for the purchasing power parity, direct costs per patient vary between 1,056€ in Romania and 10,215€ in Luxembourg. Costs due to morbidity range from 102€ per patient in Sweden and 6,178€ in the UK resulting in total costs of 1,751-12,611€ per patient. In total, in 2012 approx. 4,450 new cases of melanoma have been induced by sunbed use in 31 included countries, which corresponds to 5.5% of all incident melanoma cases. National attributable melanoma costs range from 1,570€ in Malta to 11.1 million € in Germany and sum up to an **amount of 32.5-33.4 million € for all countries**.

Comment

This very detailed study on melanoma costs attributed to sunbed use in various European countries is taking many different factors into account, such as melanoma incidences per year, national GDP and national health expenditures, among others. The crucial point of this estimated costs is, however, that the information on the fraction of malignant melanoma caused by sunbed use was obtained from the **meta-analysis of Boniol et al., published in 2012**. As written in many statements before, this meta-analysis relies on **out-dated studies** that were obtained before the implementation of the 0.3 W/m² effective irradiance limit in Europe. Further, no differentiation was made between professional tanning salons and devices for home-use or medical purposes. **This leads to a false and overblown result** of 32.5-33.4 million € for all countries.

Please find the full version here: <https://onlinelibrary.wiley.com/doi/full/10.1111/jdv.15313>

2nd study:

Sunbeds and melanoma risk: time to close the debate

Suppa and Gandini, 2019

published in "Current Opinion in Oncology", January 2019

Objective

In spite of the established scientific evidence on the association of sunbed use with melanoma risk, some have recently expressed **scepticism about the carcinogenicity** of indoor tanning. This may have raised confusion among both physicians and patients. The purpose of this review is to make the point about the **real impact of sunbed use on melanoma risk in light of the most recently published evidence.**

Results

We were able to apply **all epidemiological criteria for causality** to the relationship between sunbed use and melanoma. Together with the new evidence on the strength, dose response, and temporality of the association of sunbeds with melanoma, this will hopefully **close the debate over whether indoor tanning contributes to melanoma.**

Comment

To directly point out: **Most, if not all, of the "recently published evidence" has major flaws.** The known, ever repeating flaws, mentioned in the analysis of the first study above, occurred in some of the studies, that are presented in this review, as well. Further, the study by Lazovich et al. from 2016 for example, was conducted through questionnaires of 681 patients, diagnosed as having melanoma between 2004 and 2007 in a hospital in Minnesota (USA), which has a rather fair-skinned population. A second mentioned study from Ghiasvand et al., showed that there is a significantly higher risk of superficial spreading melanoma but not a higher risk of nodular melanoma (the most dangerous form) attributed to sunbed use! Most of the other mentioned studies in this review have additional limitations such as **small sample size or a lack of confounding factors**, which **reduces the impact of the original statement significantly.**

3rd study:

Effect of genetically low 25-hydroxyvitamin D on mortality risk: mendelian randomization analysis in 3 large European cohorts

Aspelund et al., 2019

published in "Nutrients", January 2019

Objective

The aim of this study was to determine if **increased mortality associated with low levels of serum 25-hydroxyvitamin D (25(OH)D)** reflects a **causal relationship by using a Mendelian randomisation (MR)** approach with genetic variants in the vitamin D synthesis pathway. Individual participant data from three European cohorts were harmonized with standardization of 25(OH)D according to the Vitamin D Standardization Program.

Results

We included 10,501 participants (50.1% females, 67.1±10.1 years) of whom 4,003 died during a median follow-up of 10.4 years. The observed adjusted HR for all-cause mortality per decrease in 25(OH)D by 20 nmol/L was 1.20 (95% CI: 1.15–1.25). The HR per 20 nmol/L decrease in genetically determined 25(OH)D was 1.32 (95% CI: 0.80–2.24) and 1.35 (95% CI of 0.81 to 2.37) based on the two scores. In conclusion, the results of this MR study in a combined sample from three European cohort studies **provide further support for a causal relationship between vitamin D deficiency and increased all-cause mortality.**

Comment

Mendelian randomization represents a novel epidemiologic study design that incorporates genetic information into traditional epidemiologic methods. By examining and including the **genetic variants** of the vitamin D synthesis pathway, this study was able to show a **causal relationship between low serum levels of 25-hydroxyvitamin D (vitamin D) and an increased all-cause mortality.** This further **strengthens the current scientific knowledge on the importance of vitamin D** for human health and should lead to a change in the public health discussion, regarding the implementation of innovative approaches to improve the vitamin D status of the general population.

Please find the full version here: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6356674/>

4th study:

Prevalence and determinants of sunbed use in thirty European countries: data from the Euromelanoma skin cancer prevention campaign

Suppa et al., 2019

published in "Journal of the European Academy of Dermatology and Venereology", March 2019

Objective

To compare several European countries in terms of the **prevalence and determinants of sunbed use**. Participants in the Euromelanoma campaigns filled in **questionnaires containing demographics and risk factors**, including type/duration of sunbed use. Multivariate analyses adjusted for age, gender, education, skin type and year of survey were employed to assess factors independently associated with sunbed use in each country.

Results

In total, 227,888 individuals (67.4% females, median age 44, 63.4% highly educated, 71.9% skin types III–VI) from 30 countries participated. Overall, the prevalence of sunbed ever use was 10.6% (≤ 19 -year-olds: 5.9%; 20 to 35-year-olds: 17.0%; > 35 -year-olds: 8.3%). Sunbed use prevalence was **higher in northern, sun-deprived countries**, with the exception of Italy and Spain. The main determinants of sunbed use were **age (young adults) and gender (females), whereas education and skin type had a less relevant effect**. Geographic particularities were found in four regions: Iberian (prevalence ten times higher in Spain than Portugal), Balkan (prevalence disproportionately higher among women), Baltic (highest prevalence among young adults) and Scandinavian (highest prevalence among adolescents).

Comment

The aim of this study was to collect data on the prevalence and determinants of sunbed use in Europe. As the authors write in their conclusion: "**These data have public health relevance for future interventions aimed at reducing sunbed use in Europe.**" Even though the study was not population-based, but carried out within a skin cancer screening campaign (this also explains the very low number of 10.6% who have ever used a sunbed), the results allow **comparisons between countries**. This could be used to create tailor-made campaigns against our industry.

Please find the full version here: <https://onlinelibrary.wiley.com/doi/full/10.1111/jdv.15311>

Supplement Article:

Overview on vitamin D and sunbed use

Pierret et al., 2019

published in "Journal of the European Academy of Dermatology and Venereology", March 2019

Objective

Vitamin D seems to be associated with a protective effect in a vast range of diseases, including cardiovascular, autoimmune and oncologic conditions. Since ultraviolet (UV) B light is the most important prerequisite for the cutaneous synthesis of vitamin D, **sunbeds are able to increase serum vitamin D levels, although only transiently in most cases.** In this scenario, the artificial **tanning industry relentlessly tries to promote** the use of sunbeds as a "safe" therapeutic measure to achieve an adequate serum vitamin D status. The World Health Organisation classified UV-emitting tanning devices, as well as the whole UV spectrum, as group-1 carcinogens, as they significantly increase the risk of melanoma and non-melanoma skin cancer. In case of vitamin D deficiency or insufficiency, **the current risk-benefit ratio is therefore in favor of vitamin D supplementation instead of sunbed use.** Their supposedly beneficial effects, vastly publicised by the artificial tanning industry, are not worth the carcinogenic risk associated with sunbed use.

Comment

This study **acknowledges that sunbeds are able to raise serum vitamin D levels,** although the scientific findings remain somewhat inconclusive. Nevertheless, the authors urge the public to avoid sunbeds and refer to the **IARC and SCHEER report** in order to link sunbed use with an increased melanoma risk. The main concern and criticism regarding this short article is, that **it completely neglects other beneficial effects of UV** radiation, for example the release / synthesis of nitric oxide and serotonin, among others. Further, the authors suggest to use vitamin D supplements as it is supposed to be relatively risk-free. Although this can be an additional measure to overcome a vitamin D deficiency, usually pills don't provide the other above mentioned health benefits for human health.

Please find the full version here: <https://onlinelibrary.wiley.com/doi/full/10.1111/jdv.15316>