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<tr>
<th>Journal:</th>
<th>American Journal of Epidemiology</th>
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<td>Manuscript ID</td>
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Ghiasvand et al. Respond to «Indoor tanning: a melanoma accelerator?»

Reza Ghiasvand¹, Corina S. Rueegg¹, Elisabete Weiderpass²,³,⁴,⁵, Adele C. Green⁶,⁷, Eiliv Lund², Marit B. Veierød¹

¹Oslo Centre for Biostatistics and Epidemiology, Institute of Basic Medical Sciences, University of Oslo, Oslo, Norway
²Department of Community Medicine, Faculty of Health Sciences, University of Tromsø, The Arctic University of Norway, Tromsø, Norway
³Department of Research, Cancer Registry of Norway, Oslo, Norway
⁴Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden
⁵Genetic Epidemiology Group, Folkhälsan Research Center, Helsinki, Finland
⁶Cancer and Population Studies Group, QIMR Berghofer Medical Research Institute, Brisbane, Australia
⁷CRUK Manchester Institute, University of Manchester, Manchester, United Kingdom

Correspondence to Reza Ghiasvand, Oslo Centre for Biostatistics and Epidemiology, Institute of Basic Medical Sciences, University of Oslo, P.O. Box 1122 Blindern, N-0317 Oslo, Norway (e-mail: reza.ghiasvand@medisin.uio.no)
Phone: +47 22859029
Fax: +47 22851313
We appreciate the commentary by Berwick and Doré (1) on our study of the association between indoor tanning and melanoma (2). The commentary highlights our finding that indoor tanning is associated with younger age at diagnosis. We would point out however that our finding regarding the 2.2 years (95% CI: 0.9, 3.4 years) younger age at melanoma diagnosis on average among women with age of indoor tanning initiation <30 years compared with nonusers was statistically significant and not as it is stated in the commentary.

In reaction to the increasing evidence on harmful effects of indoor tanning, the tanning industry has defended the practice on several grounds including questioning the causal association between indoor tanning and development of melanoma, recommending indoor tanning as a source of vitamin D, and claiming that indoor tanning is safer than the sun (3). The preliminary opinion of the European Commission Scientific Committee on Emerging and Newly Identified Health Risks was mentioned by Berwick and Doré. Our findings strongly support the Committee’s conclusion that sunbed exposure causes melanoma (4). We agree on the importance of large differences in the composition of ultraviolet (UV) wavelengths from indoor tanning devices and from the sun: erythema-weighted UV from indoor tanning devices is generally higher and the UVA irradiance is much higher. UVA has no role in vitamin D synthesis, which makes sunbeds an inefficient source to induce vitamin D compared to vitamin D supplements, which are widely available, cheaper, cause no skin damage, and more reliably raise vitamin D blood levels (5). However, we would question the suggested benefits of UV exposure raised in the commentary. So far, international regulations have focused on minimizing erythema, with little emphasis on the alarmingly high levels of UVA (6). UVA exposure does not increase melanin production and confers little or no protection against subsequent UV exposure. In general, UV exposure provides no protection against further UV exposure for many people who are not able to tan and offers far less protection than clothing
and sunscreen for white skin. The evidence regarding the other possible benefits of UV exposure mentioned in the commentary is far from conclusive.

We further agree with Berwick and Doré on the important role of Public Health authorities to strongly discourage use of indoor tanning, particularly by younger individuals. We would stress that the most effective way to do this is through legislation that restricts and ultimately bans carcinogenic exposure to UV for cosmetic purposes through use of sunbeds. The number of countries with nationwide indoor tanning legislations restricting use under 18 years is increasing, however, the compliance to legislations and their effectiveness are not evident (7).

Some studies found age restriction effective in reducing indoor tanning prevalence among young women (8), while others found limited effectiveness (9, 10). The effectiveness of laws that prohibit tanning for minors cannot be fully realized without proper enforcement, and unsupervised indoor tanning devices are one potential challenge (11). In the US, there is a limited regulation at the federal level and an overall lack of consistency in regulations and enforcement in states resulted in a generally low compliance by indoor tanning facilities (12).

Importantly, indoor tanning is common among young adults aged 18-25 years and therefore unaffected by age restrictions. Commercial indoor tanning was completely banned in Brazil in 2009 and in Australia in 2015 (13). With the high rates of indoor tanning in Europe and North America beyond the teen years, it is time for the policymakers in these countries to take similar action and prohibit indoor tanning, thereby saving money and lives (14).
References


