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Indoor Tanning and Risk of Melanoma: a Case-Control Study in a Highly Exposed Population – Letter

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A recent article by Lazovich et al. (1) reported a multivariate odds ratio (OR) for melanoma for ever use of indoor tanning of 1.74 (95% CI, 1.42-2.14). Another recent article reported slightly lower relative risk (RR) results for indoor tanning in Scandinavia (2). The OR reported by Lazovich et al. (1) is much higher than the IARC meta-analysis of 19 studies [overall RR, 1.15 (1.00-1.31); ref. 3]. Furthermore, when the five studies from the United Kingdom, where many have a genetically related high melanoma risk, are omitted, the RR drops to 1.04 (0.91-1.14; ref. 4). Why the OR found by Lazovich et al. (1) was very high compared with the other studies is puzzling.

There are a number of well-known risk factors for melanoma, including skin pigmentation, hair color, moles, and painful sunburns (1, 2, 5). Currently, industry standards, recommendations, and training warn very fair-skinned persons (skin type I) against indoor tanning. Having very fair skin [OR, 5.50 (2.70-11.18); ref. 1] seemed to contribute 30% of the increased melanoma risk associated with indoor tanning, assuming equal distribution among categories. Likewise, red hair contributed 38% of the risk, and many moles, 27%. These categories seem to be largely independent (5); thus, when combined, they may explain nearly all of the increased risk found. In addition, the study failed to explicitly categorize sun sensitivity.

Lazovich et al. (1) found for more than five sunburns lasting more than 1 day an OR for melanoma of 2.56 (1.67-3.93). Any significant overlap between the 734 melanoma cases who reported indoor tanning use and the 739 melanoma cases with such a history of sunburns may cause conclusions in the report linking indoor tanning with melanoma to be invalidated, as a history of severe sunburns is one of the strongest risk factors for melanoma (1, 2).

Whereas the multivariate analyses should, in principle, account for the risk factors, a way that seems guaranteed to do so is to remove cases and controls associated with each high-risk factor and repeat the analysis, as well as study each factor separately with respect to indoor tanning. We would like to see these analyses as well as the distribution of high-risk factors with respect to use of indoor tanning.

The lesson seems to be that those with preexisting high-risk factors for melanoma should be careful in using indoor tanning facilities and sun exposure.

Disclosure of Potential Conflicts of Interest

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