

Do Nonsteroidal Anti-Inflammatory Drugs Prevent Melanoma?

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Melanoma is the deadliest of the common skin cancers. Unfortunately, the incidence of this type of malignancy continues to rise, and treatment options for advanced melanoma remain limited (Federman *et al.*, 2009). Therefore, prevention remains the best way to avoid the morbidity and mortality associated with melanoma. Recently, follow-up data from a trial evaluating daily sunscreen use indicated that such use reduced the incidence of melanoma (Green *et al.*, 2011); interestingly, however, it was also found that individuals regularly ask what else they can do to reduce their risk of melanoma.

Experimental and clinical data suggest the potential of inhibiting cyclooxygenase (COX), the rate-limiting enzyme for the production of prostaglandins from arachidonic acid. Specifically, the inducible enzyme COX-2 is markedly overexpressed at sites of inflammation and neoplasia, including melanoma (Minami *et al.*, 2011). Over the past several years, observational studies have suggested that regular use of nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce melanoma development and progression (Ramirez *et al.*, 2005).

To further evaluate chemoprevention for melanoma, Curiel-Lewandrowski and colleagues (2011, this issue) used a case-control design to evaluate the effects of NSAIDs and lipid-lowering statins on the incidence of cutaneous melanoma in a population of 400 patients recently diagnosed with melanoma as well as 600 case-matched controls. Although the investigators reported no benefit in cutaneous melanoma risk with statin use, they determined that long-term use of NSAIDs decreased the likelihood of developing melanoma by nearly 50%. A similar reduction in risk was found for the use of aspirin. This work offers insight into other strategies that patients can use to reduce their chances of developing melanoma. A better understanding of this association is critical to direct patient care. Through the following questions, we examine this paper in greater detail. For brief answers, please refer to the supplementary information online <<http://www.nature.com/jid/journal/v131/n7/supinfo/jid2011154s1.html>>.



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QUESTIONS

1. How might nonsteroidal anti-inflammatory drugs inhibit the development of skin cancer?
2. How did the investigators carry out their study?
3. What were the results and conclusions?
4. What are the clinical implications?

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