

# Sunlight may help ward off rheumatoid arthritis in women

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Regular exposure to sunlight—specifically ultraviolet B (UVB)—may reduce the risk of developing rheumatoid arthritis, indicates a large long term study published online in the *Annals of the Rheumatic Diseases*.

But the effect of UVB exposure was only evident among older women, possibly because younger women are more aware of the hazards of sunlight and so cover up with sun block, suggest the authors.

They base their findings on participants in two phases of the US Nurses' [Health Study](#) (NHS), the first of which has tracked the health of more than 120,000 nurses since 1976, when they were aged between 30 and 55, until 2008.

The second (NHSII) has tracked the health of a further 115,500 nurses since 1989, when they were aged between 25 and 42, until 2009.

Rather than simply relying on geography to quantify likely levels of UVB exposure, the researchers used a more sensitive assessment, known as UV-B flux, which is a composite measure of [UVB radiation](#), based on latitude, altitude, and [cloud cover](#).

It is measured in R-B units: a count of 440 R-B units over 30 minutes, for example, is sufficient to produce slight redness in untanned white skin.

Exposure was then estimated according to the US state of residence, and

ranged from an annual average of 93 in Alaska and Oregon to 196 in Hawaii and Arizona. Likely estimates of [UV exposure](#) at birth and by the age of 15 were also included.

Over the study period, 1314 women developed [rheumatoid arthritis](#). Among nurses in the first NHS cohort, higher cumulative exposure to UVB was associated with a reduced risk of developing the disease.

Those with the highest levels of exposure were 21% less likely to develop rheumatoid arthritis than those with the least, the analysis showed.

This backs up the findings of other studies, showing a link between geography and the risk of rheumatoid arthritis as well as other [autoimmune conditions](#), including [type 1 diabetes](#), [inflammatory bowel disease](#), and multiple sclerosis, say the authors.

But no such association for UV-B exposure was found among women in NHSII. These women were younger than those in the first NHS, and so might have been more savvy about the potential hazards of acquiring a tan, suggest the authors.

"Differences in sun protective behaviours (eg greater use of sun block in younger generations) may explain the disparate results," they explain.

They add that it is unclear at what stage of life the protective effect of UV-B occurs. Many of the study participants didn't move house between birth and their teens, and there was no difference in the results for these time points.

But they conclude: "Our study adds to the growing evidence that exposure to UV-B light is associated with decreased risk of rheumatoid arthritis. The mechanisms are not yet understood, but could be mediated

by the cutaneous production of vitamin D and attenuated by use of sunscreen or sun avoidant behaviour."

**More information:** Exposure to ultraviolet-B and risk of developing rheumatoid arthritis among women in the Nurses' Health Study Online First [doi 10.1136/annrheumdis-2012-202302](https://doi.org/10.1136/annrheumdis-2012-202302)

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