

Living in a sunnier climate as a child and young adult may reduce risk of multiple sclerosis

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People who live in areas where they are exposed to more of the sun's rays, specifically UV-B rays, may be less likely to develop multiple sclerosis (MS) later in life, according to a study published in the March 7, 2018, online issue of *Neurology*, the medical journal of the American Academy of Neurology. Exposure in childhood and young adulthood may also reduce risk.

While UV-B rays can cause sunburn and play a role in the development of skin cancer, they also help the body produce vitamin D. Lower levels of vitamin D have been linked to an increased risk of MS.

"While previous studies have shown that more [sun exposure](#) may contribute to a lower risk of MS, our study went further, looking at exposure over a person's life span," said study author Helen Tremlett, Ph.D., of the University of British Columbia in Vancouver, Canada.

"We found that where a person lives and the ages at which they are exposed to the sun's UV-B rays may play important roles in reducing the risk of MS."

For the study, researchers identified participants from the larger Nurses' Health Study, including 151 women with MS and 235 women of similar age without MS. Nearly all of the women, 98 percent, were white and 94 percent said they had fair to medium skin. Participants lived across the United States in a variety of climates and locations. Of those with MS,

the average age at onset was 40. All of the women had completed questionnaires about summer, winter and lifetime sun exposure.

Researchers divided the women into three groups representing low, moderate and high UV-B ray exposure based on where they lived, specifically looking at latitude, altitude and average cloud cover for each location. In addition, seasonal sun exposure was explored, with high summer sun exposure defined as more than 10 hours per week and more than four hours per week in the winter.

They found that women who lived in sunnier climates with the highest exposure to UV-B rays had 45 percent reduced risk of developing MS across all pre-MS onset age groups when compared to those living in areas with the lowest UV-B ray exposure. When looking at specific age groups, those who lived in areas with the highest levels of UV-B rays between ages 5 to 15 had a 51 percent reduced risk of MS compared to the lowest group. A total of 33 of 147 people with MS, or 22 percent, had high exposure at ages 5 to 15, while 61 people, or 41 percent, had low exposure. In addition, those who spent more time outdoors in the summer at ages 5 to 15 in locations where exposure to UV-B rays was the highest had a 55 percent reduced risk of developing the disease compared to those in the lowest-exposure group.

"Our findings suggest that a higher exposure to the sun's UV-B rays, higher summer outdoor exposure and lower risk of MS can occur not just in childhood, but into early adulthood as well," said Tremlett. "The methods we applied to measure sun exposure could also be used in future studies."

Tremlett continued, "In addition, our research showed that those who did develop MS also had reduced sun or outdoor exposure later in life, in both summer and winter which may have health consequences."

A limitation of the study is that sun exposure was self-reported and memories of how much time was spent in the sun, particularly in youth, may differ from actual exposure time. However, the information related to UV-B [exposure](#) was captured using place of residence, which is less likely to be influenced by such factors. Another limitation was that almost all of the study participants were female and white, meaning the results may not apply to other populations.

Provided by American Academy of Neurology

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