

Does sunlight act as a prophylactic against diabetes?



Abstract

Today, several studies show a relationship between type-2 diabetes mellitus (DM) and sun exposure or UVB exposure. Blood-sugar levels were lower during the summer¹ or exposure to UVB sun lamps demonstrated increased insulin secretion.² A direct and significant association between low vitamin D levels (a surrogate measure for low sun exposure) and increased risk of type-2 diabetes has also been found.^{3,4} A meta-analysis produced moderate evidence that recreational sun exposure is associated with a reduced risk of type-2 diabetes.⁵ Researchers observed that although higher 25(OH)D levels were consistently associated with a lower risk of diabetes, supplementing 25(OH)D had shown no such effects. They hypothesized that sun exposure could have influences not related to vitamin D, and such seems to have been the case. Another of the more important investigations showed that women who had frequent sun exposure habits had a 30% reduced risk of type-2 diabetes.⁶ A number of results to date generally satisfy Hill's criteria for causality regarding vitamin D and incidence of pancreatic diseases like diabetes or cancer.^{7,8}

In a study about ultraviolet light effects, scientists found that overfed mice ate less when ultraviolet (UV) light was shone on them.⁹ The UV treatment also resulted in the mice displaying fewer warning signs of type-2 diabetes, such as abnormal insulin resistance and glucose levels. Nitric Oxide (NO), which is released by the skin after exposure to sunlight, was linked to the UV treatment, which can help people control their metabolism and slow weight gain. The same effect of the UV light was found when a cream containing nitric oxide was applied to the skin of the mice.⁹ Vitamin D, produced by the body in response to sunlight, and did not appear to play a role in the results. A similar study has further confirmed these findings.¹⁰ Both studies suggest that ultraviolet radiation (UVR) may be an effective means of suppressing the development of obesity and metabolic syndrome, through mechanisms that are independent of vitamin D but dependent on other UVR-induced mediators such as NO.^{9,10}

All these findings can be met with optimism in regard to the prevention of overweight, metabolic syndrome and type-2 diabetes, with moderate exposure to the sun's rays is seen as more as only greatly beneficial. Spending more time outdoors in the sun contributes to a healthier lifestyle in other ways, such as through exercise or dietary restriction. Diabetes is increasing very rapidly all over the world and may someday overwhelm the health-care system. In the opinion of leading experts in this field it is the most easily reversed of all degenerative diseases, so this is a tragedy.^{11,12,13} Proper nutrition, regular exercise, sufficient sleep, and sufficient safe sun exposure in the first place, may prevent or even reverse almost all type-2 diabetes and avoid cost-effective therapies. Diabetes is a totally unnecessary disease.

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Biography

Karl J. Neeser, born 1947, is one of Switzerland's leading anti-aging research scientist, author of several books, worldwide appreciated health consultant, key speaker, board member and senior lecturer American Academy of Preventive, Regenerative and Anti-Aging Medicine A4M. He lives in Switzerland and Bangkok/Thailand where he is currently a professor at Chulalongkorn University, College of Public Health Science and works with scientists in North and South America as well as in Asia in the field of molecular resonance effect technology and its influence on human physiology.

