

Radiation in sunlight reduces weight gain, findings independent of vitamin D research

June 17 2015, by Anke Van Eekelen



The UV radiation dose used in the study was a low non-burning quantity of mostly UVB radiation, which someone with an average sensitivity to skin burn would receive if they stood in the sun at noon for up to ten minutes. Credit: Let Ideas Compete

Recent research supports the potential for sunlight to reduce the risk of

excessive weight gain and also questions the effectiveness of vitamin D supplements to prevent obesity.

Obesity remains a growing health issue in Australia with more than 60 per cent of adults and 25 per cent of children suffering from abnormally high body fat accumulation.

Excessive weight gain, like [high blood pressure](#), insulin resistance and elevated [blood glucose levels](#), contributes to metabolic syndrome (MetS), a chronic disease linked to adult type II diabetes and heart disease.

Telethon Kids Institute research fellow Dr Shelley Gorman's latest study showed repetitive exposure to ultraviolet (UV) radiation prevented [excessive weight gain](#) in experimental mice, which were kept on a high fat diet.

"These findings were independent of circulating vitamin D and could not be mimicked by vitamin D supplementation," she says.

"While there seems to be a link between [obesity](#) and vitamin D, it remains uncertain whether there is a causal effect."

"It looked like the presence of vitamin D in mice on the high fat diet prevented the [beneficial] effect of UV radiation on weight gain."

Dr Gorman says so far clinical trials testing vitamin D supplementation to combat obesity and weight gain in the context of preventing MetS have also been inconclusive.

She says the causal pathway is more likely to be dependent on nitric oxide (NO) in the skin, which originates from diet and can be mobilised by UV radiation to become bioactive.

A few minutes of midday sun may do

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Dr Gorman found that by nature male mice make less vitamin D and process it faster.

She was able to use this observation to her advantage and created a unique male mouse model on a [high fat diet](#) to investigate UV radiation on obesity in the absence of vitamin D.

The three month-radiation treatment achieved 30-40 per cent less [weight gain](#) in these male mice destined to otherwise develop obesity.

Besides weigh gain, repetitive UV radiation also suppressed other clinical predictors of MetS development in this experiment such as fasting glucose, insulin and cholesterol.

Dr Gorman plans to try and apply the findings about treating obesity with sunlight exposure to humans.

Provided by Science Network WA

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