

Tomatoes found to fight sun damage

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Tomatoes could be the new weapon in the fight against sun damage to the skin, research at the Universities of Newcastle and Manchester has revealed. According to a study presented at the British Society for Investigative Dermatology this month, eating tomato paste could help protect against sunburn and sun-induced skin ageing.

In the study, researchers compared the skin of 20 people, half of whom were given five tablespoons (55g) of standard tomato paste with 10g of olive oil every day, with the other half receiving just olive oil, over a period of 12 weeks.

The skin was exposed to ultraviolet (UV) light - which is found naturally in sunlight - at the beginning and end of the trial. The team found significant improvements in the skin's ability to protect itself against UV in the group who had been eating tomato paste.

Professor Lesley Rhodes, dermatologist at the University of Manchester, says, "The tomato diet boosted the level of procollagen in the skin significantly. These increasing levels suggest potential reversal of the skin ageing process. This is in addition to the significant reduction in sunburn.

"These weren't huge amounts of tomato we were feeding the group. It was the sort of quantity you would easily manage if you eating a lot of tomato-based meals.

"People should not think that tomatoes in any way can replace sun

creams, but they may be a good additive. If you can improve your protection through your diet then over several years, this may have a significant effect.”

Many of the harmful effects of UV light are due to the excess production of harmful molecules known as ‘reactive oxygen species’ which can damage important skin structures. Sun damage from UV exposure includes premature wrinkles and skin cancer.

The tomato’s key skin saving property is a powerful antioxidant called ‘lycopene’, which is able to neutralise or ‘quench’ the harmful molecules.

Lycopene is the bright red pigment found in a number of red fruit and vegetables, but with its highest levels in cooked tomatoes. As tomato paste contains a high concentration of cooked tomatoes, it is an ideal source of lycopene.

Compared to the control group, the group who had eaten the paste were found to have 33 per cent more protection against sunburn, which can lead to skin cancer. The researchers calculated the protection offered by the tomato paste to be equivalent to a sunscreen with a sun protection factor (SPF) of 1.3.

By looking at the effects on skin ageing by studying skin samples taken from both groups, before and after trial, the Manchester team discovered that the tomato diet had boosted the skin’s levels of procollagen, a molecule which gives the skin its structure and loss of which leads to skin ageing and lack of elasticity.

Meanwhile, collaborators at Newcastle University found that the lycopene had reduced damage to mitochondrial DNA in the skin, which is also believed to be linked with skin ageing.

Professor Mark Birch-Machin, dermatology scientist from Newcastle University, says, “Eating tomatoes will not make you invincible in the sun, but it may be a useful addition to sun protection along with sunscreens, shade and clothing.

“The protective effect of eating tomatoes on our mitochondria is important as they are the energy producers in all our body cells including skin. Therefore being kind to our mitochondria is likely to contribute to improved skin health, which in turn may have an anti-ageing effect.”

Nina Goad of the British Association of Dermatologists says “While the protection offered by lycopene is low, this research suggests that a diet containing high levels of antioxidant rich tomatoes could provide an extra tool in sun protection.”

The team is now looking to start a new, longer-term study into the protective effects of lycopene on the skin.

Source: Newcastle University

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