

Q: Write a factcheck of the following claim using the scientific publications. Mention these publications in the factcheck when you give arguments, percentages or estimates, and also list the same sources below the factcheck under "Sources". For writing style follow a similar layout of the factcheck given in Style Example: headline, lead (80 words summary), claim, verdict, source of verdict, why is this true / not true, conclusion, sources. Give a balanced perspective of the evidence, instead of just saying the claim is true or false. Start the evaluation of the evidence with a brief and simple account of the mechanisms and molecules that are supposed to be at play. Be concise but use easy to understand language. This is the claim [Regular sun creams contain harmful substances, so it is better to use natural oils]

Claude:

Here is a draft factcheck on the claim "Regular sun creams contain harmful substances, so it is better to use natural oils":

Are natural oils a safer alternative to commercial sunscreens?

While some chemical UV filters may pose concerns, natural oils do not provide adequate sun protection compared to commercial sunscreens when used properly. Overall, known risks from commercial sunscreens appear minimal.

The Claim:

Regular sun creams contain harmful substances, so it is better to use natural oils.

Verdict: Misleading.

Source of Claim: The claim alludes to concerns over certain chemical UV filters in sunscreens being absorbed into the body. Some consumers are using natural oils as homemade sunscreen alternatives.

Evaluation:

Sunscreens work by chemicals that absorb UV rays before they damage skin, but some can be absorbed into the body. Recent studies found a few common chemical filters in the US and EU exceeded absorption safety thresholds after maximal usage. This raises questions on potential endocrine effects from prolonged exposure.

However, natural oils are not an equal replacement for sun protection. Most vegetable oils contain triglycerides without UV absorbing chromophores. Studies show carrot seed, coconut, raspberry seed, rosehip seed and wheat germ oils provide low SPF of only 1-5, despite claims of SPF 15-50 online. One study found UVB transmission was very poor through common vegetable oils. Only tamanu oil showed appreciable UVB absorption, likely from calophyllolides. But its in vivo SPF was just 4.

While limited, available data suggest risks from commercial sunscreens are small. No definitive human risks like endocrine disruption have been established despite over 50 years of use. In contrast, UV damage from inadequate sun protection carries known skin cancer risks.

Conclusion:

Some chemical UV filters may absorb into the body, but possible health risks appear minimal so far. Replacing sunscreen with natural oils provides insufficient sun protection. Overall, commercial sunscreens remain an important tool for reducing UV damage when used correctly.

Sources:

Pantelic et al. 2022. Ultraviolet filters in the United States and European Union: A review of safety and implications for the future of US sunscreens. *Journal of the American Academy of Dermatology*.

Ácsová et al. 2021. The real UVB photoprotective efficacy of vegetable oils: in vitro and in vivo studies. *Photochemical & Photobiological Sciences*.

Kumar & Viswanathan. 2013. Study of UV transmission through a few edible oils and chicken oil. *Journal of Spectroscopy*.

Suh et al. 2020. The banned sunscreen ingredients and their impact on human health: a systematic review. *International Journal of Dermatology*.