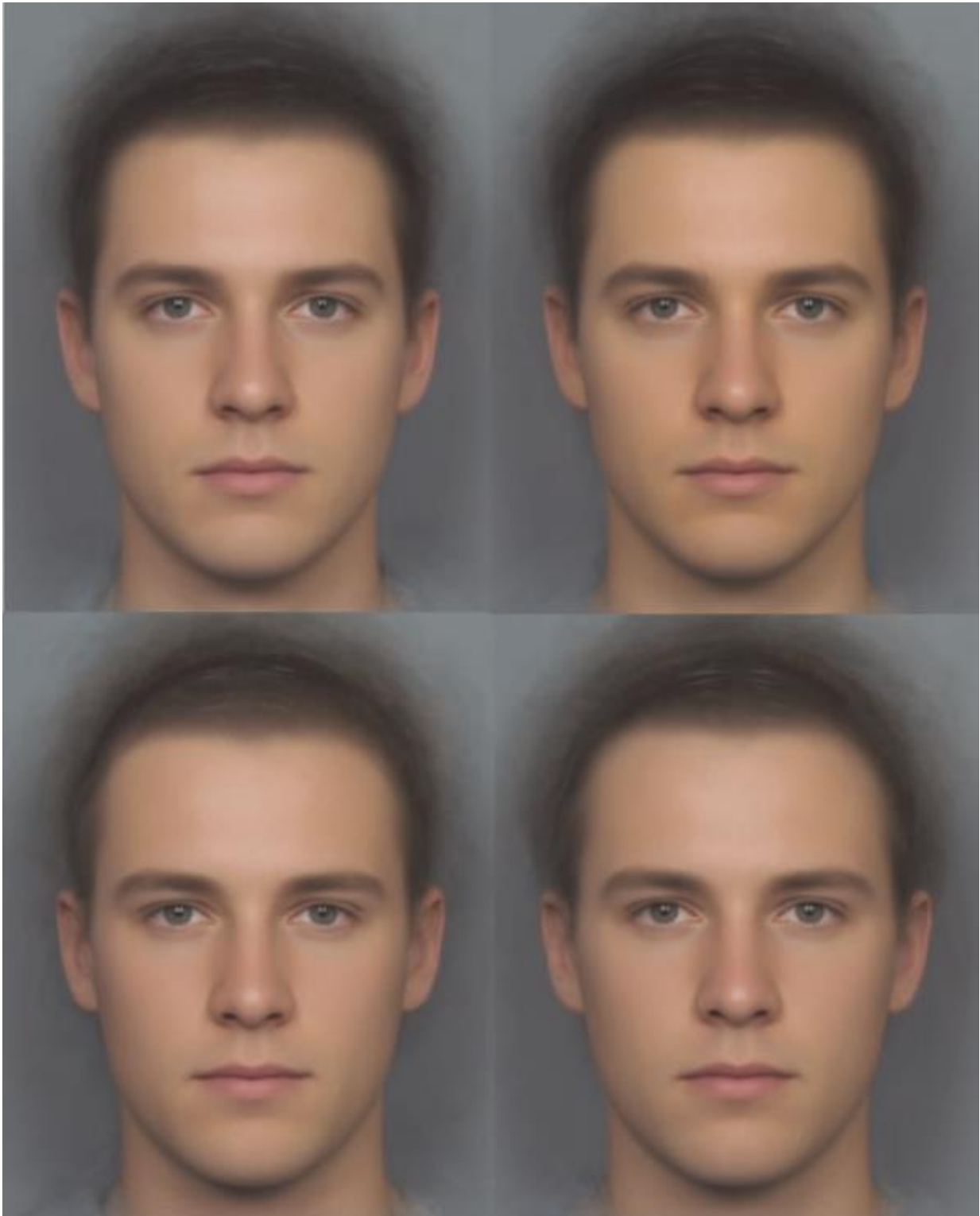


Study finds that people are attracted to outward signs of health, not actual health

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Examples of color variation between pre- and post-supplementation by Treatment condition. The top photographs show the Beta-carotene participant, The bottom

photographs show the placebo participant. The left side is pre-supplementation and the right side is post-supplementation. Credit: Yong Zhi Foo

Findings published in the journal *Behavioral Ecology* reveal that skin with yellow and red pigments is perceived as more attractive in Caucasian males, but this skin coloring does not necessarily signal actual good health.

Some people are more attractive as mating partners than others. One trait that plays an important role in sexual selection is carotenoid-based coloration. Carotenoids are red and yellow plant pigments present in fruits and vegetables that animals consume. They're the reason carrots are orange. Previous research has found that in various species—of birds, fish, and reptiles—females are more attracted to their colorful male counterpart. Researchers have argued that carotenoid-based coloration is an honest signal of [health](#), and is associated with acting as an antioxidant. One proposal is that people are attracted to signs of health in a desire to reproduce, and those who display signs of health have a greater chance of survival, greater fertility, and providing genes that promote good health in offspring.

Researchers investigated if there was any correlation to the "signals of health" from the carotenoids and actual health. Participants consisted of 43 heterosexual Caucasian men with a mean age of 21 years. The researchers also had a placebo group that consisted of an additional 20 male [participants](#).

Photographs of the participants at the start of the trial were taken in order to document changes in skin colour. Participants were tested on their health, which included their level of oxidative stress, immune function, and semen quality. After the participants' health was reviewed,

they were given a 12-week supplementation of beta-carotene for the treatment group or "dummy pills" for the placebo group. Participants returned after the 12 week period, where the photography and health tests were repeated. Sixty-six heterosexual Caucasian female raters with a mean age of 33 were recruited online to assess attractiveness of the pre- and post-supplementation faces of each male participant presented side by side on a computer screen.

Results found that, as predicted, beta-carotene supplements increased overall yellowness and redness but not lightness. Post supplement faces were 50% more likely to be chosen as attractive as well as healthier looking compared to the pre-photographs or the [placebo group](#). Thus beta-carotene supplement significantly enhanced participants' attractiveness and appearance of health. Beta-carotene treatment did not, however, significantly affect any health functions.

This study provides the first experimental evidence of beta-carotene's effect on attractiveness and health. The results suggest that carotenoid-based skin color may be sexually selected in humans, but there is no evidence to suggest that this is an honest signal of health. This study calls for further research on the influence of carotenoid coloration on mammals, in particular, if findings are replicated in women.

Yong Zhi Foo, author and postgraduate Animal Biology student at The University of Western Australia, says "Carotenoids are known to be responsible for the striking mating displays in many animal species. Our study is one of the first to causally demonstrate that carotenoids can affect attractiveness in humans as well. It also reaffirms the results of previous studies showing that what we eat can affect how we look"

More information: The carotenoid beta-carotene enhances facial color, attractiveness and perceived health, but not actual health, in humans, *Behavioral Ecology* (2016). [DOI: 10.1093/beheco/arw188](https://doi.org/10.1093/beheco/arw188)

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