

# Some color shades offer better protection against sun's ultraviolet rays

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When choosing clothing to protect against the sun's harmful ultraviolet rays, people should consider blue or red colors rather than yellow. A new study shows that these darker colors, when applied to cotton fabrics, tend to have better UV absorption. Credit: Public-Domain-Photos.com, Jon Sullivan

Economy-minded consumers who want protection from the sun's harmful ultraviolet (UV) rays -- but rather not pay premium prices for sun-protective clothing -- should think blue and red, rather than yellow. Scientists in Spain are reporting that the same cotton fabric dyed deep blue or red provide greater UV protection than shades of yellow. Their study, which could lead to fabrics with better sun protection, is scheduled for the Nov. 4 issue of ACS' *Industrial & Engineering Chemistry Research*.

Ascensión Riva and colleagues explain that the color of a fabric is one of the most important factors in determining how well clothing protects against UV radiation. Gaps, however, exist in scientific knowledge about exactly how color interacts with other factors to influence a fabric's

ability to block ultraviolet protection factor (UPF).

The scientists describe use of computer models that relate the level of UV protection achieved with three [fabric](#) dyes to their effects in changing the UPF of fabrics and other factors. In doing so, they dyed cotton fabrics in a wide range of red, blue, and yellow shades and measured the ability of each colored sample to absorb UV light. Fabrics with darker or more intense colors tended to have better UV absorption. Deep blue shades offered the highest absorption, while yellow shades offered the least. Clothing manufacturers could use information from this study to better design sun-protective [clothing](#), the scientists indicate.

More information: "Modeling the Effects of Color on the UV Protection Provided by Cotton Woven Fabrics Dyed with Azo Dyestuffs", [Industrial & Engineering Chemistry Research](#)

Source: American Chemical Society

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