

TECH

# Body armor of the future could be made of human hair

By Fox News

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A soldier from the Israeli Army's "Karakal" Battalion.

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Here's something to think about next time you're in the shower reaching for the shampoo: the hair on your head is so strong and stretchy that engineers studying it say what they're learning could help them develop new materials, possibly even for body armor.

Researchers at the University of California, San Diego — who received funding from the Air Force Office of Science Research — studied hair at the molecular level to better understand this natural super material. Not only does it have a strength-to-weight ratio that is steel-like, it also can stretch as much as one and half times its length before snapping. In fact, researchers discovered that the speed that hair is stretched at matters: it's even stronger when it's stretched more quickly.

Marc Meyers, a professor at UC San Diego's Jacobs School of Engineering, said that the team gets inspiration from the natural world.

"Nature creates a variety of interesting materials and architectures in very ingenious ways," he [said in a statement](#). "We're interested in understanding the correlation between the structure and the properties of biological materials to develop synthetic materials and designs —

based on nature — that have better performance than existing ones.”

One part of human hair has spiral-shaped molecules that actually uncoil and change structure as the hair strand is stretched, the researchers report, which helps prevent it from breaking. (Just don't stretch it too much, or it won't recover.)

They also discovered that humid weather makes hair stretchier, and temperatures over 140 degrees Fahrenheit make it more breakable.

Meyers is the senior author on [a new study](#) that studied the mechanical properties of hair. Besides possible applications towards making better body armor, the university said the research could serve a more mundane purpose: making better hair care products.

Now that's some good clean science.

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