

Omega-3s help keep kids out of trouble, study says

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Something as simple as a dietary supplement could reduce disruptive, even abusive behavior, according to newly released research by a team led by a UMass Lowell criminal justice professor.

Giving children omega-3 fatty acid supplements reduces disruptive [behavior](#), which in turn had a positive effect on their parents, making them less likely to argue with each other and engage in other verbal abuse, according to Jill Portnoy, an assistant professor in UMass Lowell's School of Criminology and Justice Studies.

"This is a promising line of research because [omega-3 fatty acids](#) are thought to improve brain health in children and adults. There is more to be learned about the benefits, but if we can improve people's brain health and behavior in the process, that's a really big plus," said Portnoy, noting that a recent research review found that omega-3 supplements do not affect cardiovascular health.

The new research, published in the scholarly journal *Aggressive Behavior*, is just one example of how Portnoy is studying biological and [social factors](#) that can help explain and predict impulsive and risky behavior. The goal is to help determine effective ways to intervene before anti-social behavior escalates into crime.

That work takes Portnoy into the heart of the "nature versus nurture" debate—whether people who commit crimes have something in their physiological makeup that predisposes them to doing so or if social factors like abusive family situations lead them to it.

"Of course, it's both," she said, but exactly how is still to be determined. "Biology and social environment interact in complex ways that we're just beginning to figure out. Before we can design effective interventions, we need to do research to understand what's happening."

Portnoy is exploring such a connection through another research project that is looking at how a low resting heart rate may lead to anti-social behavior.

"My theory is that a low resting heart rate might be an acquired, adaptive trait: If you are subjected to chronic or frequent stress as a child, you adapt by lowering your heart rate. The lower heart rate protects you by blunting your reaction to stressful events, but it can also lead to stimulation-seeking behavior. In other words, a stressful environment may cause physiological changes that lead to an increase in aggressive and impulsive behavior, in addition to causing the behavior directly," she said.

Working with a counterpart at the University of Pennsylvania, where she earned her Ph.D. and taught before coming to UMass Lowell, Portnoy studied hundreds of youths in Pittsburgh, where she grew up. The researchers found that the youths with lower resting [heart](#) rates were more likely to act out as a form of sensation-seeking, including anti-social behavior, which can be especially problematic for individuals living where there are few options for positive forms of stimulation.

Portnoy, who now lives in Portsmouth, N.H., will continue her research on this topic this fall with the help of a dozen UMass Lowell undergrads who will intern with her on the Health, Stress and Behavior Study, researching the connection between stress, [heart rate](#) and behavior.

Through this study, Portnoy and her team will examine what she describes as a continuum of criminal behavior with the goal of finding new ways to prevent it.

"Many people break the law in small ways; for example, by driving a few miles over the speed limit. I'm interested in people who are behaving aggressively but not yet reaching the level of criminal behavior or maybe they're committing more serious crimes like theft or assault, but haven't been caught. They're still exacting a toll on society. And if we want to design more general social interventions, like teaching people healthier ways to adapt to stress, then we shouldn't just study those who get

caught," said Portnoy.

More information: Jill Portnoy et al, Reductions of intimate partner violence resulting from supplementing children with omega-3 fatty acids: A randomized, double-blind, placebo-controlled, stratified, parallel-group trial, *Aggressive Behavior* (2018). [DOI: 10.1002/ab.21769](https://doi.org/10.1002/ab.21769)

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