

Squirm with purpose: Research shows fidgeting is helpful for ADHD patients

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Teachers have long struggled to get children to sit still at their desks. But for children with ADHD, those orders might be counterproductive.

That's the research focus of Florida State University Assistant Professor of Psychology Michael Kofler, who is developing new, non-medication treatments for Attention Deficit Hyperactivity Disorder (ADHD). New research by Kofler at FSU's Children's Learning Clinic shows that children often fidget or move when they are trying to solve a problem, and that movement may have a positive effect on [children](#) with ADHD.

"We really wanted to drill down and find what was causing the hyperactivity," Kofler said.

The results will be published in an upcoming issue of the *Journal of Attention Disorders*, but is currently available online.

Children with ADHD are able to retain information, which they use daily. But they often have difficulty with what's called working [memory](#), meaning the updating or mentally rearranging of information in the mind. Previous work by Kofler and his colleagues at University of Mississippi Medical Center showed that kids with ADHD did better on working memory tests when they moved more—suggesting that these kids may benefit cognitively from behaviors like squirming or fidgeting.

But they did not know whether the "hyperactive" movement helped working memory specifically.

Kofler and his colleagues wanted to find out.

Working with 25 boys and girls with ADHD, ages 8 to 12, Kofler devised two types of tests.

The first test required students to remember where a series of dots appeared on a screen and mentally reordering them based on color. The

other involved remembering a series of numbers and letters, and mentally reordering them, numbers first from smallest to biggest, then the letter. There were between three and six items to remember and reorder throughout the tests.

The students were given each test multiple times and the predictability of difficulty differed with each test. In the less difficult version, they were told how many items they had to remember, and took the [test](#) in order; in the difficult version, the amount of information to remember in working memory was random.

Children with ADHD fidgeted and moved during all the tests, which was expected because all the tests were mentally challenging. But they moved up to 25 percent more when they couldn't predict how many items they had to remember. Because the tests were identical in every way except for that key difference, this is the first study that shows a cause-and-effect relationship between working memory demands and hyperactivity in ADHD.

"It's another piece of evidence that the hyperactive behavior more and more seems to be purposeful for them," he said. "This movement is how they get the juices flowing."

Kofler also said the study is directly informing the new ADHD treatment they're developing.

"Our work keeps pointing to working memory," he said. "It affects their attention, their [impulse control](#), their school success, their social interactions and now their hyperactivity. So we're going to try and improve [working memory](#). This is a challenge, but if we're successful, we should see better attention and impulse control, and they shouldn't have to move as much."

Provided by Florida State University

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