



## PUT THE PHYSICAL IN EDUCATION

A study suggests that exercise can help kids, especially those with A.D.H.D., focus in class.

By GRETCHEN REYNOLDS

When confronted with an overly active child, many exasperated teachers and parents respond the same way: “Sit still!” It might be more effective, though, to encourage the child to run. Recent

research suggests that even small amounts of exercise enable children to improve their focus and academic performance.

By now it’s well known that diagnoses of Attention Deficit Hyperactivity Disorder are increasingly widespread among American children: The label has been applied to about 11 percent of those between the ages of 4 and 17, according to the latest federal statistics. Interestingly, past studies have shown a strong correlation between greater aerobic fitness and attentiveness. But these studies did not answer the question of which comes first, the fitness or the attentional control.

Addressing that mystery was a goal of a study published last year in *The Journal of Pediatrics*. Researchers at the University of Illinois at Urbana-Champaign recruited 40

8-to-10-year-old boys and girls, half of whom had A.D.H.D. They all took a series of computerized academic and attentional tests. Later, on one occasion they sat and read quietly for 20 minutes; on another, they walked briskly or jogged for 20 minutes on treadmills. After each task, the children wore caps containing electrodes that recorded electrical activity in the brain as they repeated the original tests.

The results should make administrators question the wisdom of cutting P.E. classes. While there were few measurable differences in any of the children’s scores after quiet reading, they all showed marked improvements in their math and reading comprehension scores after the exercise. More striking, the children with A.D.H.D. significantly increased their scores

on a complicated test, one in which they had to focus on a single cartoon fish on-screen while other cartoon fish flashed on-screen to distract them. Brain-wave readings showed that after exercise, the children with A.D.H.D. were better able to regulate their behavior, which helped them pay attention. They responded more nimbly to mistakes like incorrect keystrokes. In short, the children with A.D.H.D. were better students academically after exercise. So were the students without A.D.H.D.

“In terms of a nonpharmacological means of dealing with attentional-control problems in children, exercise looks as if it could be quite beneficial,” says Charles Hillman, the professor of kinesiology at the University of Illinois who oversaw the study. “Especially since it seems to also improve the academic performance of children who don’t have attentional-control problems.”

What’s more, adds Matthew Pontifex, now an assistant professor at Michigan State University and the study’s lead author, “You don’t need treadmills.” Just get restless children to march or hop or in some fashion be physically active for a few minutes. Coax their peers to join in.

Of course, even as it reinforces the accumulating evidence that exercise is good for brains, this short-term study leaves many questions unanswered: How much and what kind of physical activity is optimal? Does it permanently lessen attentional problems? Does exercise directly affect attention at all? In their study, the researchers speculate that exercise might sharpen mental focus in part by increasing brain activity in the frontal lobe. But understanding its mechanisms may not be needed for teachers and parents to consider deploying movement to counter wandering attentions. ♦