

Exercise is good for children's brains, too

W. Douglas Tynan, director of integrated health care for the American Psychological Association, wrote this for the kids health blog on Philly.com.

We all know exercise generally benefits children, and another study to confirm that was recently published in *Pediatrics*. Though this finding may yield a yawn or two, the latest research goes well beyond quantifying what most of us think is true.

Charles Hillman from the University of Illinois and colleagues found kids who took part in regular physical activity enhanced their cognitive performance and brain function. His group looked at the impact of a little more than an hour of vigorous exercise followed by 45 minutes of a less-vigorous skills game for a total of two hours every day after school during 150 days of a school year.

On measures of concentration, attention, flexible thinking, controlling impulses, and actual brain activity measured by scalp electrodes, the exercise group of these 8- and 9-year-old children did much better overall.

"The message is, get kids to be physically active" for the sake of their brains, as well as their health, Hillman told the *New York Times*. After-school programs like the one he and his colleagues developed require little additional equipment or expense for most schools, he said, although a qualified physical education instructor should be involved.

The *Atlantic* magazine cited the results and suggested this might be a treatment for impulsive and overly active children.

What makes these results so extraordinary is they are not unusual. Three years ago, Catherine Davis at the University of Georgia did another study of slightly older children who were overweight and did low-level (20 minutes per day) and higher-level (40 minutes per day) exercise versus a control group. They did only about 15 weeks, or half a school year, and found the same results. In a small group of subjects examined with a functional MRI of the brain, Davis found changes in brain activity that can be seen on the visual image of brain function, along with better scores in math, organization, and control of impulses.

In science, replication is key, and here we have two groups, working independently, getting the same benefit from vigorous exercise, and the same test results and brain activity changes. Other studies of school exercise in Delaware have shown 30 minutes of physical activity raises test scores and lowers absences.

If there were a medicine that showed this benefit, there would be full-page advertisements in this newspaper. If there were a curriculum that showed this benefit, it would be snapped up by your local school district.

But it is not a product; it is a lifestyle to be taught in school and at home. Just an hour of vigorous activity, either through games or other play, enhances academic, cognitive, and executive skills of planning and self-control. Schools and families that limit or eliminate these opportunities impede children's progress.

The science is clear. To advance academically and in terms of self-control, children's bodies need to move. An extra hour of instruction may help, but if it comes at the cost of reducing active play, it will probably hurt.