

Iowa State analysis reveals needs for improvement in youth fitness

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A study by Iowa State graduate research assistant Yang Bai reinforces the need to get children active at an early age. Credit: Christopher Gannon, Iowa State University

A new study provides a snapshot of health-related physical fitness levels for U.S. schoolchildren in grades first through 12th. Iowa State University researchers analyzing data collected nationally through the NFL PLAY 60 FITNESSGRAM Partnership Project found that fitness levels sharply declined as students got older. The study is published in the *Journal of Pediatrics*.

Fitness levels varied greatly based on gender and age. For example, the percentage of boys meeting the requirements for healthy aerobic capacity ranged from 62.1 percent to 37.6 percent. Girls ranged from 50.8 percent to 26.1 percent. Aerobic capacity among boys started to decline in the sixth grade, while girls experienced a continual decline with age, researchers found.

There was less variation among boys and girls with a healthy body mass index. However, researchers say there is room for improvement in both BMI and aerobic capacity.

"These results reinforce the need for early intervention to prevent or delay the decline in physical activity during the early adolescent years," said Yang Bai, lead author and a graduate research assistant in kinesiology at Iowa State.

FITNESSGRAM is a youth fitness assessment tool used in schools. The NFL PLAY 60 FITNESSGRAM Partnership Project, which is funded by the National Football League Foundation and managed by The Cooper Institute, tracks health and fitness data from more than 1,000 schools in the U.S.

The ISU team has worked with The Cooper Institute on the coordination and evaluation of this research project that involves schools from each of the 32 NFL franchise cities. The program provides support in the use of the FITNESSGRAM assessment program as well as assistance in

helping schools incorporate more physical activity into the school day.

"Physical activity is important for healthy youth development. Schools benefit from creating healthy school environments and to also provide healthy opportunities for the students," said Greg Welk, ISU professor of kinesiology. "NFL Play60 includes programming, but the real goal is for schools to embrace the broader philosophies and build on it over time."

More than 192,000 students from 725 schools completed the FITNESSGRAM testing, which includes assessments of aerobic capacity, BMI, abdominal strength and endurance, trunk extensor strength and flexibility, upper body strength and endurance, and flexibility. The percentage of 4th through 12th graders meeting healthy requirements for five or six of the six tests ranged from 20.7 percent to 34.6 percent for boys, and 19.9 percent to 31.5 percent for girls.

In the paper, researchers also point out that only 48 percent of high school students went to PE classes on one or more days a week, according to the most recent Youth Risk Behavior Survey. Bai says this is important to note because the fitness data collected in PE classes may not represent the entire high school population. Researchers plan to examine physical education requirements in future studies.

Pedro Saint-Maurice, a former ISU Ph.D. student, contributed to the study along with Kelly Allums-Featherston, Norma Candeleria and Katelin Anderson, all with The Cooper Institute.

More information: "Prevalence of Youth Fitness in the United States: Baseline Results from the NFL PLAY 60 FITNESSGRAM Partnership Project," by Yang Bai, MS, Pedro F. Saint-Maurice, PhD, Gregory J. Welk, PhD, Kelly Allums-Featherston, PhD, Norma Candeleria, MS, and Katelin Anderson, MS, appears in *The Journal of Pediatrics* , [DOI](#):

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