

New school of thought: In-class physical exercise won't disrupt learning, teaching

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As childhood obesity rates rise and physical education offerings dwindle, elementary schools keep searching for ways to incorporate the federally mandated half-hour of physical activity into the school day.

A series of recent University of Michigan studies found that two-minute bursts of in-class [exercise](#) breaks increased the amount of daily exercise for elementary children without hurting math performance. More importantly, when incorporated into classrooms across southeast Michigan, teachers found the breaks were doable and didn't disrupt learning.

"What we're showing is that we can give kids an additional 16 minutes of health-enhancing [physical activity](#)," said Rebecca Hasson, principal investigator and one of the lead authors.

Hasson, U-M associate professor of kinesiology and nutritional sciences, is the director of the Childhood Disparities Research Laboratory, which collaborated on the five studies with the U-M schools of public health, education, and architecture and urban planning, and Project Healthy Schools, a statewide community-Michigan Medicine collaborative.

While 16 minutes doesn't sound like much, it adds up, Hasson said. Kids are supposed to get an hour of exercise a day—30 minutes of that during school. Most don't.

"Many kids don't have PE every day but they might have recess, and if

they get 10 more minutes of [activity](#) there, it would meet that school requirement," Hasson said. "This doesn't replace PE, it's a supplement. We're trying to create a culture of health throughout the entire school day, not just in the gym."

The Active Class Space lab studies examined the effect of [activity breaks](#) on mood, cognition, appetite and overall physical activity of 39 children in Hasson's lab. A study done in real classrooms tested the feasibility of implementing inPACT (Interrupting Prolonged sitting with ACTivity), the exercise program Hasson and her colleagues developed.

In the lab studies, kids ages 7-11 completed four experiments: eight hours of sitting, interrupted with two-minute low-, moderate- or high-intensity activity breaks, and eight hours of sitting interrupted with two minutes of sedentary screen time.

Findings show that when the sitting was interrupted with high-intensity activity breaks, children maintained their usual activity levels away from the laboratory, thereby burning an additional 150 calories a day without overeating. Unlike adults, children in the study didn't compensate for the increased exercise by sitting around after [school](#) or by eating more, Hasson said.

While mood was higher immediately following the screen-time breaks compared to the activity breaks, children reported positive mood during both the sedentary and exercise conditions, and they subsequently rated the activity breaks as more fun.

And, after high-intensity activity, overweight and obese children enjoyed improved moods all day, Hasson said. This suggests children reflected upon the exercise and took more satisfaction in it.

All of the activity breaks elicited the same level of math performance,

and when Hasson took the exercise breaks to real classrooms, teachers could do them.

"We got a lot of pushback at first. The fear was that teachers would be overloaded," Hasson said. "Teachers get a lot of stuff thrown at them. Our experience was that teachers were all very positive about exercise. They know it's good for the kids. They were open to the idea but they needed more information on how to do it safely."

U-M's College of Architecture and Urban Planning and School of Education, along with Project Healthy Schools staff, helped design classrooms to accommodate exercise and to safely get kids exercising and then back to class work quickly.

"Teachers were worried it would make kids more rowdy, but 99 percent of kids were back on task within 30 seconds of doing activity breaks," Hasson said. "We even had one [teacher](#) who did an activity [break](#) in the middle of a math exam—she realized the benefit of getting them up and moving."

Initially, researchers requested that teachers do 10 three-minute breaks, but most teachers averaged between five and six breaks—about 15-18 minutes of activity. Schools in disadvantaged districts didn't complete as many activity breaks as schools in wealthier districts. Hasson is currently working to eliminate this disparity by adding elements of game playing—point scoring, competition, reward system—to increase physical activity enjoyment in the [children](#).

Based on these studies, Hasson said next they'll try five, four-minute activity breaks totaling 20 minutes, and gauge the impact on mood, activity levels, calorie intake and cognition.

More information: www.ncbi.nlm.nih.gov/pubmed/28605263

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