

Wii Fit a promising tool for all ages

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While some emerging technologies can create environments that require very little physical effort, one Kansas State University researcher thinks games like Nintendo's Wii Fit can help promote physical rather than sedentary activities for people of all ages.

"I think there is a great potential to develop ways to promote physical activity through technology," said David Dzewaltowski, professor and head of the department of kinesiology at K-State and director of the university's Community Health Institute. "Kids innately like to move, so I believe that there is a big future in games that use emerging technologies and require movement because the games will be enjoyed by children and also be more healthy than existing games."

In a commentary published in the October 2008 *Exercise and Sport Sciences Reviews*, Dzewaltowski discussed how technology is changing our everyday life and affecting our health.

Wii Fit has games that incorporate yoga, strength training, balance and aerobics. The games are interactive and require the player to physically move, which is better than nothing, Dzewaltowski said. It uses a balance board and allows gamers to simulate challenges like snowboarding down a mountain.

"Anything that gets people to move more than they have in the past is positive, but if people are trying to replace physical activity that demands more movement with the Wii, then that will be negative," Dzewaltowski said.

He said it is difficult in a small indoor space to replicate the intensity of some real-life physical activities, though dance video games are effective at demanding physical movements that require caloric expenditure.

"The caloric expenditure demanded by an activity depends on the energy necessary to move the

body's weight to complete the task and how long you perform the task," Dzewaltowski said.

He added that different activities demand different amounts of caloric expenditure, like playing a game of soccer, which demands much more energy expenditure than bowling or playing the outfield in baseball.

Dzewaltowski said Wii Fit can be an effective tool to create or maintain a healthy lifestyle for some people because it follows the basic principles for adhering to an exercise program, like having physical activity goals, tracking those goals and evaluating the progress.

Wii Fit measures players' body mass index, or BMI, which is a weight evaluation based on height and weight. Dzewaltowski said this a good screening tool for adults, meaning if the game categorizes them as being overweight or obese, they should seek more information from a health professional who can better evaluate the level of body fat. However, he said the calculation is unsuitable for children.

"For children, the BMI calculation has to be expressed based on age and gender growth charts, and it doesn't do that," Dzewaltowski said. "Due to children's age and gender differences in growth, the adult BMI calculators don't work. My use of the Wii BMI calculator showed that it was inappropriate for children and would categorize children incorrectly."

The game also gives players a Wii Fit Age, which is measured by the player's BMI and their center of gravity and balance testing. However, Dzewaltowski doesn't think the measurement is credible.

For personal goals, he said it is more important to focus on behaviors such as physical activity and fruit and vegetable consumption rather than the game's BMI and fitness age measurements.

Dzewaltowski said it could be healthy for gamers to

solely rely on Wii Fit for exercise if they are meeting the guidelines for physical activity set by the U.S. Department of Health and Human Services.

He said future technologies should continue to promote physical activity if they make exercise enjoyable, especially for adults.

"I also believe that adults enjoy movement if they are at a fitness level where they can perform the activity comfortably," Dzewaltowski said. "The problem is most adults have very poor fitness levels. So, I believe there is a future in developing games that include movement and demand caloric expenditure at the level of the participant."

Source: Kansas State University

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