

COPD patients may breathe easier, thanks to the Wii

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According to a new study conducted by researchers in Connecticut, the Wii Fit™ offers patients with chronic obstructive pulmonary disease (COPD) an effective workout – and one that, because it is enjoyable, patients are more likely to use.

"Our study showed that COPD [patients](#) exercised at a relatively high percent of their maximum during three to five minutes of specified [Wii Fit™](#) exercises, indicating the [Wii](#) Fit may be a reasonable home-based exercise regimen for COPD patients," said Jeffrey Albores, MD, Internal Medicine Resident, University of [Connecticut](#) Health Center.

The results will be presented at the ATS 2011 International Conference in Denver.

Regular exercise benefits COPD patients by increasing overall muscle tone and improving cardiopulmonary fitness. Getting patients to exercise regularly at home, while ideal, can be difficult, especially when in patients with COPD where exercise tolerance may be limited. Finding an exercise routine that patients enjoy may help motivate them to exercise regularly, said Dr. Albores.

"In order for exercise to be sustained in the long-term, the type of exercise should be agreeable to the patient," Dr. Albores said. "In this study, we aimed to find out the level of intensity of the Wii Fit™ exercises in patients with COPD."

Introduced by Nintendo in 2007, the Wii Fit™ includes exercise activities and games, including yoga, balance and strength training exercises, and aerobic activities. The system has been used by physiotherapists to encourage at-home exercise among patients. In this study, researchers decided to evaluate the ability of the Wii™ in offering COPD patients a viable and effective option for exercise in the home.

For their study, Dr. Albores and his colleagues recruited five patients with stable COPD. Prior to exercising with the Wii, a standard walking test was performed to determine each patient's maximal workload and [heart rate](#), [oxygen consumption](#) and respiratory factors were measured. Patients were asked to perform four specified exercises from the Wii Fit™ program: running in place, upper arm exercises, stepping in place and obstacle course. Each exercise was performed for three to five minutes, after which heart rate, oxygen consumption and respiratory factors were again measured.

At the end of the exercise routine, heart rate was at 71 percent of maximum predicted value and oxygen consumption was 86 percent of maximum predicted value. Maximum predicted values reflect the absolute upper limit of what a patient can achieve through exercise, and is based on health, age and other factors. Most exercise programs aim to achieve from 60 percent to 80 percent of maximum values to be safe and effective.

"The preliminary data from our study indicate that COPD patients performed at 60 percent to 70 percent of their maximum during three to five minutes of specified Wii Fit exercises, reflecting a relatively high percent of their maximum," Dr. Albores said. "This is comparable to what we would expect to see with relatively low-intensity classroom calisthenics."

The study also found lower extremity Wii Fit exercises approximate 70-80 percent of the pair maximum as compared to upper extremity Wii Fit exercises, which approximate 50-60 percent of their maximum.

"Because the lower extremities have bigger muscle groups, they approximate a higher percentage of the maximal values as compared to the upper extremities," Dr. Albores said.

While the Wii Fit™ offers exercise options that are similar to those available in traditional rehabilitation centers, Dr. Albores said additional research needs to be performed to determine if use of the Wii™ increases a patient's willingness to perform regular [exercise](#) at home.

"The video game system will provide COPD patients an adjunct to pulmonary rehabilitation by performing these interactive activity-promoting video game exercises in the home setting," Dr. Albores noted. "However, further studies are necessary to determine safety, adherence and effectiveness of the Wii Fit exercises in COPD patients."

Provided by American Thoracic Society

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