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**** Video and photos available for download: <https://bit.ly/320uQ2N> ** (password: neurobics)**

OHIO STATE STUDY FINDS PLAYING BRAIN GAMES BEFORE SURGERY HELPS IMPROVE RECOVERY

COLUMBUS, Ohio – A new study by led by researchers at [The Ohio State University Wexner Medical Center](#) and [The Ohio State University College of Medicine](#) finds that exercising your brain with “neurobics” before surgery can help prevent post-surgery delirium.

Essentially, your brain can be prepared for surgery, just as the body can, by keeping your mind active and challenged, according to findings published online in the journal [JAMA Surgery](#).

To study the effects of neurobics to prevent delirium, researchers gave 268 patients over the age of 60 an electronic tablet loaded with a brain game app. Patients were asked to play one hour of games per day in the days leading up to a major surgery requiring general anesthesia.

“Not all patients played the games as much as we asked, but those who played any at all saw some benefit,” said Dr. Michelle Humeidan, an associate professor of anesthesiology at Ohio State College of Medicine Wexner Medical Center and first author of the study. “Patients who practiced neurobics were 40% less likely to experience postoperative delirium than those who did not, and the results improved the more hours they played.”

The electronic tablet-based preoperative cognitive exercise targeted memory, speed, attention, flexibility, and problem solving functions. Those who played five to 10 hours cut their risk by more than half, and those who played the prescribed 10 hours or more had a 61% reduction in delirium rates compared to the control group.

In recent years, doctors have embraced “pre-habilitation” for patients leading up to surgery, which may include exercise, a healthy diet and controlling any chronic conditions. However, none of those interventions address postoperative delirium, a complication that is especially common in older patients and causes mental confusion leading to longer hospital stays, slower recoveries, and even an increased risk of death.

“Our intervention lowered delirium risk in patients who were at least minimally compliant. The ideal activities, timing, and effective dose for cognitive exercise-based interventions to decrease postoperative delirium risk and burden need further study,” said co-author Dr. Sergio Bergese, a professor of anesthesiology and neurological surgery at Stony Brook University, who was working at Ohio State Wexner Medical Center in 2015 when the study started.

Future research will explore exactly how brain games impact mechanisms in the brain, and how much patients should practice neurobics to reap the full benefits.

“Using the app was ideal for this study because we could easily track how long and how often patients were playing,” said Humeidan, who’s also an anesthesiologist at Ohio State Wexner Medical Center. “But things like reading the newspaper, doing crossword puzzles or anything you enjoy to challenge your mind for an hour each day may improve your mental fitness and help prevent delirium as well.”

This study also involved Ohio State researchers Joshua-Paolo C. Reyes, Christopher M. Nguyen, Elizabeth Sheridan, Alix Zuleta-Alarcon, Andrew Otey and Mahmoud Abdel-Rasoul, along with Cory Roeth of Wright State University.

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