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Study explains how exercise can slow Parkinson's disease

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Dec. 22 (UPI) -- Scientists at the University of Colorado Anschutz Medical Campus conducted a study that suggests why exercise can help Parkinson's patients slow the disease's progression.

The critical components are the DJ-1 protective gene and the alpha-synuclein protein, according to a news release announcing the study.

Humans born with a mutated version of the DJ-1 gene get severe symptoms of Parkinson's disease at a younger age than others. Alpha-synuclein molecules bundle together in the brain to help precipitate neurological decline in Parkinson's patients.

In the study from Colorado research associate professor Wenbo Zhou and professor Dr. Curt Freed, mice with Parkinson's were grouped into two categories: those with exercise wheels and those without.

After three months, the mice with wheels managed to increase the DJ-1 gene's expression in the brain and muscles, the scientists found. Those mice also stopped alpha-synuclein molecules from bunching up in the brain.

"Our results indicate that exercise may slow the progression of Parkinson's disease by turning on the protective gene DJ-1 and thereby preventing abnormal protein accumulation in brain," Freed said in the release.

The exercising mice also enjoyed greater cognitive function than those from the immobile group, the release said.

Freed and Wenbo also examined mice that did not have the DJ-1 gene. Based on the decline of activity in those mice, Freed and Wenbo determined the gene may be necessary for a Parkinson's patient to experience normal movement.

The professors' study was published Friday in the journal PLOS ONE.