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Growth Hormone Stimulator May Help Combat Frailty in Older Adults

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(PhysOrg.com) -- An investigational drug that stimulates the body to produce more growth hormone improves lean muscle mass and physical function in older adults, potentially helping to combat frailty, according to researchers at Duke University Medical Center, VA Puget Sound Health Care System, the University of Washington School of Medicine, and 10 other study centers.

The Phase II study is the first to show improvements in physical performance among at-risk seniors taking capromorelin, an oral compound developed by Pfizer, which can help the body release more growth hormone. Older adults have greatly reduced production of growth hormone, which regulates metabolism and aids in the building of muscle mass even after adolescent growth has been completed.

"As we age, decreased strength and physical agility trigger a cascade of events leading to loss of independence and disability," says Heidi K. White, MD, MHS, associate professor of medicine at Duke and first author of the report. "By boosting the production of growth hormone, we may be able to slow this process and help people lead active lives longer."

The study, which is online and will be published in the April issue of The Journal of Clinical Endocrinology & Metabolism, included 395 men and women aged 65-84 with mild functional limitations. Study participants were randomized to take a placebo or one of four doses of capromorelin.

White says that all four doses of capromorelin were shown to increase growth hormone production. These findings were sustained over one year of treatment. Researchers also observed a significant increase in lean body mass (1.4 Kg, versus 0.3 Kg for placebo) and improvements in two physical performance tests - tandem walking (heel to toe) and stair climbing.

"These findings support our hypothesis that stimulating growth hormone production not only increases the body's ability to develop lean muscle, it also restores physical functioning," White explains.

"The improvements seen in this study are promising but relatively mild, likely due to the general good health of the study participants," White says. "Further research is warranted to determine if greater improvements in physical functioning are seen among people who are already somewhat frail."

To put the findings in context, researchers note that the study results can be compared to other studies that looked at the effect of exercise alone. A home-based exercise program among a similar patient population produced a 23-34 percent improvement in a stair climbing test after 10 weeks. Participants in the growth hormone study did not exercise, but their stair climbing ability improved by seven percent.

"Following further investigation, capromorelin could be used in combination with exercise," White says.

Adverse events included fatigue, insomnia and small increases in fasting glucose and HbA1c scores, all within the normal range.

Provided by Duke University