MedicalXpress

Dietary supplement linked to increased muscle mass in the elderly

June 17 2013

A supplemental beverage used to treat muscle-wasting may help boost muscle mass among the elderly, according to a new study. The results were presented today at The Endocrine Society's 95th Annual Meeting in San Francisco.

The supplemental beverage, called Juven, contains three amino acids, including arginine. Amino acids are the building blocks of proteins, and are required for cell growth and repair. The amino acid arginine is especially important because it increases growth-hormone production, which causes the body to produce a critical protein called insulin-like growth factor 1, or IGF-1. This protein promotes growth and development and, as its name suggests, is similar in structure to the hormone insulin.

Previously, studies showed that Juven helped increase muscle mass in patients with AIDS or cancer. These earlier findings led this study's investigators to hypothesize that the increased muscle mass could result from greater blood concentrations of IGF-1. They theorized that these increased protein levels could have the same benefits among the elderly, who also experience decreased muscle mass and strength related to drops in hormone production that occur with aging. In turn, increased muscle strength could potentially improve quality of life among the elderly.

They found that participants who received Juven had significant increases in lean body mass, while those who received placebo did not have any change. In addition, blood concentrations of IGF-1 increased

among Juven recipients, but not among the placebo group. The correlation between the improved IGF-1 concentrations and increased lean tissue, however, was not statistically significant.

"The amino acid cocktail of the dietary supplement Juven appears to hold promise for increasing lean body in healthy older adults," said study lead author Amy C. Ellis, PhD, assistant professor at the University of Alabama at Tuscaloosa. "However, more research is needed to determine the cause-and-effect relationship and the mechanisms by which the amino acids in Juven may favorably affect body composition of healthy, older adults."

Study participants were 29 healthy adults between the ages of 65 and 87 years. Each received either Juven® or a placebo drink twice a day, along with their regular daily diet, for six months. At the beginning of the study and again six months later, investigators used a special test to measure lean body mass. At both times, they also assessed participants' blood levels of IGF-1 after fasting.

The National Institutes of Health and the Center for Aging at the University of Alabama-Birmingham funded the study. Abbott Laboratories, the manufacturer of Juven®, provided the dietary supplement and the placebo.

Provided by The Endocrine Society