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August 22, 2012

UNH Researcher Receives \$360,000 to Study Strength Training in Elderly

DURHAM, N.H. – A University of New Hampshire faculty member has received a grant of more than \$360,000 from the National Institutes of Health to study the effectiveness of two distinct strength-training regimens on older adults. The study will compare traditional resistance training exercises, in which participants build muscle strength by lifting heavy weights, to an innovative program that uses very light resistance coupled with blood flow restriction.

The blood flow restriction program, called KAATSU in Japan, where it is very popular, has been shown to increase muscle mass and strength in older adults despite the very light weights. “It could be an effective program for people who may not be able to lift heavy loads due to age-related issues like arthritis or joint replacements,” says Summer Cook, assistant professor of kinesiology at UNH and principal investigator on the grant.

The program restricts blood flow with an inflatable cuff, much like one used to measure blood pressure, on the thigh. Participants then lift weights at about 30 percent of their maximum capacity. “That’s very light. You wouldn’t go to the gym to lift that,” Cook says. Yet this light-load training may be as effective as traditional weight training, which recommends lifting 70 to 100 percent of maximum strength.

In addition to measuring strength gains, Cook and her co-investigators – assistant professor of social work Pablo Arriaza and assistant professor of kinesiology Dain LaRoche – will assess participants’ quality of life and perceptions of the training with a qualitative survey. The researchers will also compare the research subjects’ functional capacity to complete activities of daily living like walking and stair-climbing.

“If older adults don’t have enough muscle strength to perform their daily activities, they’re going to lose their independence,” Cook says; the resulting costs of health care or institutionalization will take an economic toll on us all as baby boomers age.

Funded through the NIH’s Academic Research Enhancement Award (AREA) program, the three-year grant encourages student involvement. Cook anticipates that up to 10 UNH students, primarily undergraduates, will assist with the research each year.

The researchers are currently recruiting men and women over 65 to participate in the study. Subjects, who will be compensated, will undergo 12 weeks of supervised strength training at the biomechanics laboratory in UNH’s New Hampshire Hall. To learn more about participating in the study, contact Cook at summer.cook@unh.edu or 603-862-0895.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,200 undergraduate and 2,300 graduate students.

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Reporters and editors: Summer Cook, principal investigator, is available at 603-862-0895 or summer.cook@unh.edu

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