Source: Texas Tech University

Neural Biochemical Levels Increase With Exercise

A study demonstrates that the level of a biochemical which regulates the health and function of neural tissue increases due to short-term exercise.

Newswise — Levels of a naturally-produced chemical that promotes brain health increase proportionally to the intensity of exercise, according to a joint research project between the Departments of Physiology and Health, Exercise, and Sport Sciences at Texas Tech.

An article written by the researchers describing their studies on the chemical, called Brain-Derived Neurotrophic Factor (BDNF), appears in the April 2007 issue of *Medicine and Science in Sports and Exercise*.

These results may aid in designing exercise programs to maintain or improve neurological health and function, said Lee Ferris, a former doctoral student.

Ferris and his mentor Jim Williams, associate professor of health, exercise, and sport sciences and adjunct professor of physiology, are studying what causes exercise to improve the brain's cognitive power. They designed a study to test how levels of BDNF and cognitive performance scores changed as a result of different exercise intensities.

"In separate contexts, both exercise and BDNF are known to positively affect cognitive function," Ferris said. "We wanted to find out whether BDNF is one of the biochemical mediators of this exercise-based improvement in human participants."

While the team found that more intense exercises yielded a greater increase in serum BDNF levels, their initial studies did not indicate that this was the cause of the improved cognitive function scores. However, Ferris and Williams believe this may be due to the small sample size of the pilot study and that replication of this work may show a relationship.