Massage Found To Reduce Inflammation Following Strenuous Exercise

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Most athletes can testify to the pain-relieving, recovery-promoting effects of massage. Now there's a scientific basis that supports booking a session with a massage therapist: On the cellular level massage reduces inflammation and promotes the growth of new mitochondria in skeletal muscle. The research, involving scientists from the Buck Institute for Research on Aging and McMaster University in Hamilton Ontario appears in the online edition of *Science Translational Medicine.*

The study involved the genetic analysis of muscle biopsies taken from the quadriceps of eleven young males after they had exercised to exhaustion on a stationary bicycle. One of their legs was randomly chosen to be massaged. Biopsies were taken from both legs prior to the exercise, immediately after 10 minutes of massage treatment and after a 2.5 hour period of recovery.

Buck Institute faculty Simon Melov, PhD, was responsible for the genetic analysis of the tissue samples. "Our research showed that massage dampened the expression of inflammatory cytokines in the muscle cells and promoted biogenesis of mitochondria, which are the energy-producing units in the cells," said Melov. He added that the pain reduction associated with massage may involve the same mechanism as those targeted by conventional anti-inflammatory drugs. "There's general agreement that massage feels good, now we have a scientific basis for the experience," said Melov.

Study participants were recruited at McMaster University in Hamilton, Ontario, Canada. Lead author Mark Tarnopolsky, MD, PhD, from the Department of Pediatrics and Medicine said the research provides much needed validation for a practice that is growing in popularity. "The potential benefits of massage could be useful to a broad spectrum of individuals including the elderly, those suffering from musculoskeletal injuries and patients with chronic inflammatory disease," said Tarnopolsky. "This study provides evidence that manipulative therapies, such as massage, may be justifiable in medical practice."

About 18 million individuals undergo massage therapy annually in the U.S., making it the fifth most widely used form of complementary and alternative medicine. Despite several reports that long-term massage therapy reduces chronic pain and improves range of motion in clinical trials, the biological effects of massage on skeletal tissue have remained unclear.

References:

Contributors to the work: Buck Institute researcher Alan Hubbard was also involved in the study. Additional researchers from McMaster University include Justin D. Crane, Daniel I. Ogborn, Colleen Cupido and Jacqueline M. Bourgeois. The work was funded by the National Sciences and Engineering Research Council of Canada, the Glenn Foundation for Medical Research and a donation from the Warren Lammert family.

Buck Institute for Age Research

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