Dynamic Chiropractic

Orthopaedic Research Society Awards Chiropractor

Editorial Staff

Partap Khalsa, DC, PhD, FACO: "Although there has been a long standing political animosity between medicine and chiropractic ... if you do good science, then the ORS is interested in providing a forum for your research."

ATLANTA, Georgia -- The Orthopaedic Research Society (ORS) has given its "New Investigator Recognition Award" to chiropractic researcher, Partap Khalsa, DC, PhD, FACO. It is the first time the ORS has bestowed the award to a chiropractic researcher.

Dr. Khalsa received the award at the 42nd annual meeting of the ORS, February 18-22 in Atlanta. Dr. Khalsa's award-winning study, "Mechanical states encoded by stretch sensitive neurons in feline joint capsule," was one of eight studies selected for a NIRA out of a total of 133 submitted for consideration. There were just under 800 studies presented at the research conference.

Dr. Khalsa, a 1979 graduate of Los Angeles College of Chiropractic, began his private practice in Massachusetts in 1980, and received a M.Sc. degree in biomedical engineering from Boston University. He earned his PhD from Worcester Polytechnic Institute and the University of Massachusetts Medical School in 1995. He has presented research at scientific conferences worldwide including: the Second World Conference, Society for Neuroscience Annual Conference, and the Chiropractic Centennial Research Conference. He has research studies accepted for publication this year in the Journal of Orthopaedic Research and the Journal of Neurophysiology. Another study is presently under revision for publication in the Journal of Biomechanics. He has also previously received a National Research Service Award from the National Institutes of Health (NIH).[1] Dr. Khalsa is currently a postdoctoral research fellow at Yale University School of Medicine, a position partially funded by a Peter Bommarito Research Residency from the FCER.[2]

Dr. Khalsa's award-winning study investigated the fundamental mechanical state encoded by joint capsule neurons. Previous studies had suggested that capsule afferents were encoding the strain (a measure of deformation), or a strain related parameter, produced during a capsule stretch. In conjunction with his co-authors, Peter Grigg, PhD, of the Univ. Mass. Medical School and Allen Hoffman, PhD, of Worcester Polytechnic Institute, an apparatus was constructed which enabled them to independently measure the stress (a measure of force) and the strain at the location of individual mechanoreceptors in isolated joint capsules. Dr. Khalsa recorded from individual neurons while simultaneously measuring the mechanical state during in vitro capsule stretch. Contrary to previous indications, their study discovered that these afferents acted as stress rather than strain detectors.

"This finding helps us to understand the underlying mechanism by which joint mechanoreceptors encode physical stimuli," explained Dr. Khalsa. "Earlier studies had shown that these receptors are

activated only when a joint approaches the end of its normal range of motion. Now we have shown that they are monitoring the stress levels developed in the joint capsule during rotation. When the stress levels pass an activation threshold, these afferents linearly respond to further increased levels of stress. Figuratively, these afferents tell the brain, 'Don't do that anymore!'"

Reference

1. Nat'l Institutes of Health awards Fellowship to DC. Sept. 11, 92 "DC" (10)19, p 1, 19.

2. Where the research dollars are going. Oct. 22, 93 "DC" (11)22, p. 1,5.

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