New Study Reveals Benefits of Multiple-Impulse Chiropractic Adjusting

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PHOENIX, Arizona – A new study published April 6, 2006 in the journal *Chiropractic and Osteopathy* (BioMed Central) has determined that multiple-impulse chiropractic adjustments can create up to 25% more vertebral movement than single chiropractic thrusts. This study represents the first biomechanical investigation of the effect of multiple-impulse thrusts on vertebral motions. "The results are quite convincing," said the study's lead author, Tony Keller, Ph.D., a Bioengineer from the *Musculoskeletal Research Laboratory*, a Division of the *Florida Orthopaedic Institute* headquartered in Tampa, FL. "This was the first time we examined what happens during repeated impulsive-type chiropractic thrusts, and the data clearly shows that something favorably interesting is occurring during a pulse-train series of chiropractic adjustments," added Dr. Keller.

By definition, impulsive-type chiropractic adjustments are thrusts that are extremely fast; "those too fast for the human hand to be able to deliver," stated Dr. Chris Colloca, a Phoenix, Arizona based chiropractor who co-authored of the study. The research used the *Impulse Adjusting Instrument*® (Neuromechanical Innovations, Phoenix, AZ) which has been shown to produce chiropractic adjustments at a rate of about a hundred times faster than traditional manual type chiropractic adjustments. Using the *Impulse*® device the first thrust was compared to a series of consecutive thrusts delivered six times per second (6 Hz) to the spinous processes of sheep. Using high-tech tri-axial accelerometers, the intersegmental motions of the vertebrae were able to be measured and compared between the initial thrust and subsequent thrusts. The research revealed a general trend toward maximizing vertebral motions typically anywhere between the third and eighth thrust.

"This research shows us that we can improve the spinal mobility during the chiropractic adjustment goes a long way towards helping us understand adjustment dosage," said Dr. Colloca. "Other instrument adjusting techniques have taught chiropractors to only thrust once. We now have evidence that one thrust might not be doing the job," said co-author Deed Harrison, D.C., a chiropractic practitioner and researcher from Elko, NV. "In previous research, it was shown how the *Impulse*® Instrument has improved on its spring-loaded predecessors by tuning the waveform to the natural frequency of the body while improving the speed and range of forces produced over the activation-type devices. Now, we also know that you can move the vertebrae even more with multiple-impulse adjusting," added Dr. Colloca.

"It's an exciting time for chiropractic to investigate its methods within the scientific community to improve delivery of patient care," stated Keller. The research represents a rare multi-disciplinary collaboration at the *Institute for Medical and Veterinary Science* in affiliation with the *Adelaide Center for Spinal Research* (Adelaide, South Australia) combining talents from chiropractic and bioengineering with experts in orthopaedic surgery and pathology with co-authors Robert Gunzburg, M.D., Ph.D., and Robert Moore, Ph.D. The research team has combined on a number of studies published in a variety of scientific journals including the *European Spine Journal*, *Journal of Biomechanics, Journal of Manipulative and Physiological Therapeutics,* and *Spine* among others. The research was supported by *Chiropractic Biophysics Non-profit, Inc.*, through generous grants from its members and its largest individual supporter, Dr. William Harris' *Foundation for the Advancement of Chiropractic Education*. A free-copy of the study can be downloaded at http://www.chiroandosteo.com/content/14/1/6.

For more information on the Impulse Adjusting Instrument® call 480-785-8442 or visit www.neuromechanical.com.