

Impulse[®] Fares Best Among Chiropractic Adjusting Instruments



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PHOENIX, Arizona – A comparison of biomechanical performance among chiropractic adjusting instruments was published in the July/August, 2005 issue of the [*Journal of Manipulative and Physiological Therapeutics*](#). The study reported a broader range of forces and a superior frequency area ratio among electromechanical adjusting instruments over traditional spring-loaded activation devices specifically favoring the Impulse Adjusting Instrument[®]. “These findings provide a scientific rationale supporting the anecdotal reports of better results with patients by clinicians using Impulse[®],” says the study’s lead author, Dr. Chris Colloca, a chiropractor from Phoenix, Arizona.

“In over a decade of researching chiropractic adjusting instruments, we discovered the importance of optimizing the frequency input to the spine. At the right frequency, more bone movement occurs and more neural receptors are stimulated during the adjustment, said Tony Keller, Ph.D., a professor of *Mechanical Engineering and Orthopaedics and Rehabilitation* at the *University of Vermont*, a co-author of the study. “These are the exact mechanisms that research has determined are important in accomplishing the chiropractic adjustment,” said Keller. Dr. Keller, a co-inventor of Impulse[®], holds several patents from his research and ideas to try and improve the frequency characteristics of hand-held spring-loaded activation type adjusting instruments. “We were never able to achieve the forces and frequency inputs with the spring-loaded (activation) devices like we do with Impulse[®],” stated Keller. “As the research in this study shows, Impulse[®], stands heads and shoulders above our previous inventions,” Keller said.

“We developed Impulse[®] to make instrument adjusting easier for chiropractors to apply and easier on their hands,” said Colloca. “Traditional chiropractic adjusting instruments use a spring-trigger mechanism that engage the device to fire by forcefully squeezing a two handles together. These kinds of instruments kick-back into the wrist and hand of the clinician. We solved this problem by incorporating an electronic trigger mechanism that is light as a feather to pull and made instrument adjustments comfortable again,” he said. With the rise in popularity of using adjusting instruments in chiropractic practice improvements that better suit the patient and clinician are of great interest. Today, chiropractic adjusting instruments are the second most common type of adjusting technique, utilized by 72% of chiropractors on 21% of their patients.

Chiropractic adjusting, a more specific variant of spinal manipulation, is the most commonly performed intervention by chiropractors. Over the past three decades adjusting instruments have been developed to assist chiropractors in delivering forces to the spine. Benefits of chiropractic adjusting instruments include a more specific and targeted force application, controlled force and speed. These benefits culminate in easier adjustments on patients and the doctor too.

“Speaking of speed,” says Colloca, “Impulse[®] was found to be twice as fast as the spring type activation devices. That’s about 100 times faster than traditional manual type chiropractic adjustments too. Because force equals mass times acceleration ($F=ma$), increasing the speed of adjustments with a chiropractic adjusting instrument accounts for using a significantly decreased mass while achieving similar forces to traditional manual type thrusts. The faster speed allows the adjustment to be delivered faster than the patient’s tendency to tighten up and resist the adjustment.

Impulse[®] is the most recent invention by Colloca and Keller, who have collaborated on chiropractic research projects for a number of years. Nearly a decade ago, they co-authored *Activator Methods Chiropractic Technique* (Mosby Year-Book, Inc., 1997), and in 2005 they co-authored “The Use of Spine Measurement Instruments” in *Principles and Practice of Chiropractic, 3rd Edition* (McGraw-Hill, 2005). Collectively over the past ten years they have amassed over 50 scientific publications in various journals chapters. For more information on the Impulse Adjusting Instrument[®] visit www.neuromechanical.com or call 480-785-8442.