

Clinical Applications of Vibration Exercise

Jasper Sidhu, BSc, DC

When talking about vibration therapy, many chiropractors are aware of the benefits for their patients. Vibration devices can come in various forms and have been used by chiropractors for years in their practices. Recently, vibration exercise platforms have been generating considerable interest in the field. If your initial impression is of another modality, think again. Vibration exercise platforms open up diverse areas of applications and are not only used in accelerating recovery for the patient, but also in providing a unique device that will increase scope of practice and attract new patient populations.

At the Schisler Spine Centre in Windsor, Ontario, Canada, Dr. Craig Schisler has integrated vibration exercise into his spinal decompression practice. "Most of my patients are unable to engage in conventional exercises and I feel there needs to be a faster progression into an active program from their decompression treatments," said Dr. Schisler. "Vibration exercise not only achieves that, but the compliance rate [also] is quite high. This allows me to provide the total continuum of care with minimal space utilization."

Vibration exercise is based on 40 years of research and utilizes a frequency range that has been proven both safe and effective. The technology originally was used by the Russian space program and Olympic athletes. Eventually, it was introduced to Europe in the early 1990s, at which time further research was done to validate its effects. Current research is being published in peer-reviewed journals such as *Spine* and the *Journal of Bone and Mineral Research*.

According to Dr. Larry Leigh, assistant professor at the University of Windsor, "Initial research was primarily focused on sports performance, but now there's a considerable shift toward [whole-body vibration's] applications as a therapeutic tool. Outcomes such as increased strength, flexibility, circulation and pain reduction are now being focused on in such conditions as arthritis, back pain, osteoporosis, multiple sclerosis and the geriatric population."

Dr. Karl Johnson, a chiropractor and clinical nutritionist from Michigan, also has found considerable success with vibration exercise. One of his first patients to use this modality was a 51-year-old female diagnosed with osteoporosis. The patient decided not to begin taking medication and wanted another solution. After four months of vibration exercise therapy, her medical doctor's pre- and postbone density tests showed a 1.9 percent increase in bone mass, and the original osteoporosis diagnosis was downgraded to osteopenia.

"Vibration exercise has allowed me to treat the whole person," said Dr. Johnson. "We all know that intense weight training has a positive effect on bone density, but most of our patients may not be able to, or are unwilling to do it. Vibration exercise only takes 15 minutes, three times per week, and has allowed me to provide comparable exercise effects on my patients."

Vibration exercise platforms work by simulating the body's natural stretch reflex (tonic vibration reflex). Since this is an involuntary muscle contraction, there is increased muscle recruitment

compared to conventional voluntary muscle activity. Force generation is achieved through increasing the acceleration of the platform, rather than increasing mass (external weights). At a frequency of 40 times per second, a vibration platform is capable of generating 2,400 muscle contractions in one minute. There are several advantages to this: Similar strength gains to conventional training can be achieved; gentle, rapid contractions allow muscle to work as a pump, resulting in increased blood flow; and rapid muscular contractions can lead to favorable stresses being placed on bone.

With the wide array of benefits from vibration exercise, the technology also offers the potential to add a long-term fitness solution to a chiropractic practice. For the past five years, I have utilized vibration exercise in a clinical setting, progressing to running a vibration center next to my chiropractic practice. This has allowed me to provide a long-term, membership-based fitness and health program for patients discharged from chiropractic care.

Our members range from people with multiple sclerosis, osteoporosis, chronic pain and fibromyalgia to the obese individual who has found a comfortable and low-stress exercise in a nonthreatening environment. The key common factor that separates vibration exercise from conventional training is that all of these individuals are either not able to go to a regular club to exercise or are unable to initiate regular exercise. Due to the low impact and decreased exercise time, patient compliance increases. This also has allowed me to attract a diverse patient base that requires a long-term lifestyle solution to their problems.

In summary, vibration exercise is starting to make waves in the chiropractic profession, not only as an effective modality, but also as a potential added source of revenue. As a profession, I believe we have the required clinical skills and competencies to utilize this modality and make a positive change in our patients' lives, in addition to increasing research through our colleges. With the growing amount of positive clinical outcomes that are surfacing, it's no surprise vibration exercise is quickly becoming a necessary tool in the chiropractic arsenal.

JULY 2008