

Shakin' Things Up: SpineSmith and WAVE® to Partner

By Elizabeth Hofheinz, M.Ed., M.P.H.

SpineSmith Partners LP and WAVE® Manufacturing Inc. have announced they will be working together to integrate vibration therapy into the stem cell harvesting process. SpineSmith will have the exclusive rights to sell WAVE's pre-surgical vibration conditioning technology, thus introducing the approach to the orthopedic and neurological marketplace.

The company says that the WAVE (Whole-body Advanced Vibration Exercise) system allows patients with conditions like obesity, diabetes, and arthritis to improve their fitness at a cellular level before spinal surgery. They point to research that indicates the type of vibration process WAVE technology produces, which is similar to vigorous exercise, can improve circulation, reduce pain, and increase flexibility, with minimal stress to joints—and in a fraction of the time of conventional therapies. Increasing circulation helps prepare the surgical site by stimulating the body's natural healing response and also promotes revascularization and recovery after surgery. WAVE technology can also stimulate and produce growth factors to recruit regenerative cells that play an important role in healing and recovery.

In the news release, Kevin Dunworth, SpineSmith Founder, noted, "This is all about creating the best healing environment for the patient, and WAVE technology makes that possible. The most recent scientific literature indicates an up regulation of stem cells, hormones, and growth factors when a patient undergoes vigorous exercise. We believe the up regulation of stem cells will stimulate better surgical outcomes."

Larry Leigh, Director of Research and Training at WAVE, told *OTW*, "From an operational standpoint, there are basically two major types of WBV (whole body vibration) platforms (see Figures 1 and 2). Both types of devices activate an involuntary muscle contraction via the stretch (tonic vibration) reflex. Think of a health professional tapping the patellar tendon with a reflex hammer, and the strong, involuntary contraction which ensues. The hammer has lengthened the tendon, and a contraction occurs to counteract it and prevent overstretching of the muscle. The receptors (muscle spindles and golgi tendon organs) responsible for this reflex are located in the muscles and tendons and are key factors in maintaining posture and balance for the human body. When standing on a vibration platform, the plate drops, lengthens the tendon and an involuntary contraction occurs. The platform then moves back to its original position and the process repeats itself. A typical WBV training session will last 15–20 minutes. The best way to describe WBV training is that it's a form of resistance training without weights and minus the accompanying stress on the joints, since the only resistance involved is the person's body weight."

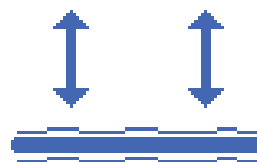


Fig. 1 -- Lineal
Primarily Vertical Oscillations



Fig. 2 -- Pivotal
Side to Side Oscillations
Similar to a Teeter-Totter