



The Vibe™

Owner's Manual

www.vibeforhealth.com

P. O. Box 171
Mapleton, MN 56065
1-866-520-4270

Copyright 2018

Table of Contents

Warranty Information.	3
About the Inventor of the Vibe & Vibe For Health	4
Introduction to Whole-Body Vibration (WBV)	5
Directions for Installing The Vibe	8
Using your Vibe for the First Time	9
Simple Exercises	10
Accessories for The Vibe	11
Contraindications	12
Recommended Billing Codes	13
Research & Literature on WBV	14

All products sold by Vibe For Health are guaranteed to meet your satisfaction; if not, simply return the product within 30 days.

RETURNS:

You have 30 days to return your item from the date you received it. Any product you return must be in the same condition you received it and in the original packaging.

REFUNDS:

Once we receive your item, we will inspect it and notify you that we have received your returned item. We will immediately notify you on the status of your refund after inspecting the item.

If your refund is approved, we will initiate a refund to your credit card (or original method of payment). You will receive the credit within a certain amount of days, depending on your card issuer's policies.

SHIPPING:

You will be responsible for paying for your own shipping costs for returning your item. Shipping costs are non-refundable. If you receive a refund, the cost of the original shipping will be deducted from your refund.

The Vibe™: all parts & accessories are covered against the chance of manufacturing defects, shipping damage, and also breakage resulting from normal wear & tear, for a period of up to one (1) year after the unit is received.

In the event of warranty disagreements, Vibe For Health reserves the right to ultimately decide whether to provide compensation and/or repair service on any and all of its products.

In case of equipment breakage or malfunction, please notify:

Vibe For Health
866-520-4270, option 1 or
care@vibeforhealth.com

For questions regarding treatment protocols, please e-mail
care@vibeforhealth.com

For all other requests, please contact Vibe For Health directly at
866-520-4270.

About the Inventor of The Vibe™

Dr. Dennis Woggon was born in Milwaukee, WI, and graduated *cum laude* from Palmer College of Chiropractic in 1974. He is the founder and director of the Saint Cloud Chiropractic Clinic, which celebrated its 40th anniversary in 2014, and also founded CLEAR Institute in 2000. He has completed over 4400 hours of post-graduate work in spinal biomechanics, and lectured at several chiropractic colleges including the Palmer, Parker, Life, Northwestern, Northern California, and Texas Colleges of Chiropractic. Dr. Woggon has published over 25 articles on chiropractic in various journals including *Dynamic Chiropractor*, *Posture Magazine*, *Canadian Chiropractor*, and the *Journal of Vertebral Subluxation Research*, and is listed in Dr. Axe's "Top 25 Chiropractors in 2017." He is internationally recognized as one of the leading spinal biomechanics experts, and has served as a delegate to the Spine Clinic in Vladivostok, Russia, and also presented at the International Chiropractic Symposium in Athens, Greece. His work in scoliosis correction has proved wrong those who thought scoliosis could never be corrected, only stabilized, and that chiropractic could not help a scoliosis patient. "Scoliosis treatment using a combination of manipulative and rehabilitative therapy," by Mark Morningstar, Dennis Woggon and Gary Lawrence, was published in *BMC Musculoskeletal Disorders* on September 14, 2004, and is currently listed as the Most Highly Accessed Article of All-Time.

You can find the article online at:

<http://www.biomedcentral.com/1471-2474/5/32>

About Vibe For Health

Founded in 1984, Vibe For Health specializes in supplying quality products to chiropractors specializing in advanced structural corrective care techniques. We are the leading supplier of whole body vibration therapy products to chiropractors in the United States, and we also provide equipment internationally.

All of the products sold through Vibe For Health have been rigorously evaluated and tested to ensure they are safe & effective. We rely upon the combined clinical experience of hundreds of chiropractors to help us to continually improve and refine our equipment, and utilize cutting-edge technologies such as computerized range of motion & muscle testing, digital motion x-ray, precision x-ray analysis, and other scientifically-validated outcome assessment measures, to be certain that our customers experience the best possible long-term outcomes from our products.

Introduction to Whole-Body Vibration (WBV)

What is Whole Body Vibration (WBV) Therapy?

Whole Body Vibration therapy is a way of enhancing the benefit of your chiropractic care. It is a safe and effective way to improve balance & posture, prevent falls, and increase bone density without using drugs. It can also speed the healing of sprains, strains, fractures, and other injuries.

The Russian cosmonauts first investigated vibrating platforms as a way of maintaining bone & muscle mass while in outer space. Despite the fact that much of their initial research was never published, the positive benefits of this innovative new treatment soon attracted attention in Europe for its benefits in enhancing fitness & strength training. Soon vibrating platforms were appearing in health gyms & recreational centers. Scientists in the United States soon began evaluating vibration for its therapeutic benefits, and while initial research was promising, there was no cohesion amongst the results – some studies reported excellent improvements, some none, and some found negative effects. In reviewing these conflicting results, researchers soon noticed that in all of the experiment on vibration, there was a great deal of variability in the frequency and the amplitude (intensity) of the vibration between experiments.

A vibration is like a wave, repeated over and over again. Scientists quantify this wave through its frequency (the number of waves per second, measured in Hertz) and its amplitude (which is the size of the wave) – just like a radio receiver captures radio waves based upon their amplitude (AM) or frequency (FM). These two factors also determine the effect of vibration upon the body. Different tissues in the body will respond to different frequencies. For instance, research has shown that the collagen which makes up the cartilage of your joints and the discs between the bones of the spine responds to a slow pulse of 4 Hertz (four pulses per second). The muscles respond best to frequencies between 30 and 50 Hertz, and the ideal frequency window for stimulating bone growth is 30 Hertz.

These scientific studies that pinpointed the ideal “windows” of frequencies soon led to researchers to explore the positive benefits of WBV therapy on various systems of the body.

Chiropractors first began using vibration therapy as a way of retraining the brain's control over the muscles more effectively – this is known as neuromuscular re-education. When you stand on a vibrating platform, your postural muscles have to make multiple, rapid adjustments – as many as 50 times per second – to adapt to the stimuli and balance accordingly. For this reason, exercises & spinal rehabilitation performed upon The Vibe can be as much as 3 times more effective than if they were done alone. There are many other benefits of Whole Body Vibration therapy, as well.

In one study, sheep were placed on a vibrating platform for 20 minutes a day, five days a week. One year later, their bone density had increased by 34.2 percent. Another study conducted on postmenopausal women at high-risk for osteoporosis found significantly increased bone mineral density in the hip after 6 months, with just 3 treatments a week.

Vibration therapy has also been shown to:

- increase blood & lymph circulation
- reduce pain & inflammation
- promote the immune response
- increase healing of fractures, strains, & sprains
- help joint strength & flexibility
- decrease stress & increase energy levels
- aid in detoxification & removal of wastes from the body

You may have noticed other vibrating platforms on the market. In fact, it has become somewhat of a fad lately, with articles appearing in magazines such as TIME and Health & Fitness and in newspapers routinely. Many of these advertisements tout vibration therapy as an easy, quick way of losing weight, preventing osteoporosis, or staying fit. However, as we mentioned before, the effect that vibration therapy has upon the body is determined by its frequency and its amplitude.

Most other platforms have a dial that allows the user to adjust the frequency. This is often described as a positive “feature” of the unit. Unfortunately, many of these platforms have no method of determining the exact frequency it has been set at, and sometimes the frequency of the platform is measured to be different than what it is set to on the dial. Without knowing the exact frequency, there is no way of knowing which system of your body is being affected most. In addition, some frequencies have been shown to have negative effects upon the digestive, skeletal, and muscular

systems of the body. If you try to “guess” which frequency is best, you are gambling with your health.

The amplitude of the platform is also very important. Some platforms use a strong frequency that can be damaging to your bones and joints. There are safe levels for vibration exposure, and The Vibe is designed in accordance with these guidelines. Some platforms are so powerful that standing on them for even one minute has the potential to induce long-term damage. The Vibe was developed in accordance with the current standards for vibration safety from the European Union, the Canadian Centre for Occupational Health & Safety, OSHA, and the International Standard Organization (ISO). An individual would need to stand on The Vibe for four hours in one day to exceed the safe limit for vibration exposure.

The Vibe platform is constructed in the United States by skilled machinists and engineers. The motor used in The Vibe is a modified offset orbital cam design, producing multi-dimensional vibration that is transmitted through solid welds and bolts up to the vibrating plate. This is important because when the bones begin to deteriorate, the first bone cells to die are NOT the ones arranged in up-and-down fashion (the vertical trabeculae), but side-to-side (the horizontal trabeculae). Yet as these crossbeams are lost, the strength of the vertical pillars will obviously begin to suffer. It is important to be able to stimulate the crossbeams to re-grow so they will buttress the bone against compressive forces and resist fractures in ALL dimensions. This type of vibration is also the most beneficial in improving balance and preventing falls, because it stimulates a response in every direction.

Installing The Vibe in your Home or Office

The vibration produced by The Vibe can be transferred through the floor into nearby equipment. For this reason, it is very important that you **do not place The Vibe near computers or other vibration-sensitive equipment!** Vibe For Health cannot be held responsible for damages inflicted upon other objects in this manner.

The best place for your Vibe is near a foundation wall, which will absorb some of the ambient vibration. Floors with heavily padded carpet will make the vibration seem less intense; hardwood, linoleum, or concrete floors will have the opposite effect. It is not necessary to install The Vibe in a basement or ground level; although, if there are tenants in the floor beneath you, it might be prudent to inform them of your new purchase and explain what it does so that they will not be unnecessarily alarmed if the light fixtures in their ceilings begin to rattle!

If people with difficulties in balancing are going to be standing on The Vibe, place it in a corner so that the walls may be used for stability. It is certainly helpful to position the Vibe with handholds for the user to grab to prevent falls, but the balance-improving effect of The Vibe will be lost if the user is constantly holding on for stability. We encourage you to make every effort to stand on The Vibe independently, without support. You will be amazed by how quickly your balance improves, and how effortless it will soon become to stand on The Vibe.

The timer control may be conveniently attached to a nearby table or wall with the adhesive Velcro® backing. **Please do not attach the timer to The Vibe itself, as this may disrupt the sensitive equipment inside the timer.**

It is recommended that you keep the area beneath The Vibe clean and clear of dust to ensure trouble-free operation. Every month the unit should be moved and the area beneath vacuumed.

The power supply for The Vibe is standardized for North American operations at 115 Volts/60 Hertz. The power consumption of The Vibe is 5.6 amps. International conversion will be required if you are attempting to use The Vibe outside of North America. For more information on Vibes specifically designed for use in European countries, please contact Vibe For Health, 866-520-4270.

Maximum weight standing on Vibe: 400 pounds.

Maximum weight exercising on Vibe: 250 pounds.

Using your Vibe for the First Time

Once your Vibe is installed and ready to use, do not overdo it with your first experience. The vibration produced by the Vibe will flush toxins out of bodily tissues, and this may produce nausea or discomfort. Start with 3-5 minutes of vibration, twice daily. Once you feel comfortable with this time span, increase it to 10 minutes. If you wish, you may increase it further, but do not exceed twenty minutes, three times a day. After standing on the Vibe for twenty minutes, the body will adapt to the vibration and no further benefits will be readily apparent. If the Vibe is used at home, the recommended usage is 10-20 minutes twice a day at least 5 out of 7 days, or daily if possible. In a clinic setting, you may wish to limit the time that your patients are on the Vibe, especially in high-volume practices. Typically, 5 minutes is enough for the benefits of WBV to become apparent in a patient. In particularly difficult cases, you may wish to increase the time to 10 minutes to ensure maximum benefit.

Dizziness and nausea are common side effects of using the Vibe, and they readily disappear within 1-3 usages of the Vibe as the body adjusts to its effects upon the circulation. To facilitate this process, if dizziness or nausea occur, discontinue use immediately, drink 2-3 glasses of water, and wait five minutes before trying again. Do not look down while on the Vibe, as this may cause dizziness.

If you experience a “tickle” in your nose or sinuses, looking up at the ceiling and bending the knees will help to alleviate the pressure (**note to D.C.’s: Patients with Forward Head Posture will be especially susceptible to this complaint due to increased adverse mechanical tension on the cervical spine. Reassure them that as their condition improves, they will find the Vibe more comfortable to use and this side effect will soon wane and disappear**).

As you are becoming accustomed to the effects of WBV, you may find it helpful to reduce the intensity of the vibration through insulation, or by turning 90 or 180 degrees on the platform. the easiest method of insulation is to keep your shoes on while standing on the Vibe (typically, the shoes are removed to improve muscle response and proprioceptive re-training). You may also place a rubber or foam pad either beneath or on top of the Vibe. Moving around on top of the platform will also change the intensity of the vibration, as the motor unit is centered and positioned facing forward. Please be advised, however, that no benefits of WBV are lost when the intensity is reduced - the effects are derived from the frequency of the vibration, and not its strength.

A Note About The Vibe & Children: Many children find The Vibe to be fascinating and fun to use, and children as young as six months have responded with smiles when placed upon The Vibe. However, The Vibe is not a toy, and children should be closely monitored while they are around it. Do not let children attempt to pick up The Vibe or place their hands near its edges. If you sit an infant upon The Vibe, steady them with your hands to prevent falls while still allowing their full weight to rest upon the platform. Children capable of standing should be encouraged to

do so while on The Vibe, but again, monitor the child closely and constantly, and remove the child from The Vibe immediately if he or she exhibits any signs of distress or discomfort.

Simple Exercises for The Vibe

After you are comfortable with The Vibe, you may begin simple exercises.

- 1.) Stand with your feet facing front. Then SLOWLY rotate your body left and right. At a position of injury or inflammation, you should feel a slight “buzz” in that area. Hold that position for 5-10 seconds, and then resume rotation.
- 2.) The Vibe enhances any stretching or warm-up routine by increasing the force placed on muscle fibers by three times the force of gravity. Stretches should be performed SLOWLY.
- 3.) Facing forward, alternate between bending the knees and rising up on the toes, slowly and gradually. You may hear “popping” noises in your joints as the collagen becomes more fluid.



- 4.) For foot and heel pain, sit on a chair with the feet on The Vibe. This is also beneficial for ankle and knee problems.
- 5.) The hands may be placed upon The Vibe and the wrist, elbow, and shoulder rotated slightly with the hands firmly in place. This is done for shoulder, wrist, and elbow injuries, including carpal tunnel syndrome. To alleviate arthritis and joint pain in the fingers, alternate between pressing on The Vibe with the fingers and then with the palm.



Accessories for The Vibe

Cervical Traction

Combining The Vibe with cervical traction is an extremely effective way to improve posture and disc spacing. The easiest approach to set up this system in your home or office is by using an overhead pulley system, either attached to the ceiling or a nearby wall.



Cervical traction may be done in a stationary position or with a combination of exercises. The patient may slowly rotate bilaterally. In the case of a scoliosis the patient will rotate from a neutral position to one side (usually right) and then back to center. They may also perform toe raises with slight knee bends while standing on both feet, or, as an advanced proprioceptive re-training exercise, they may stand on one leg (stork stance) and do this exercise.



Contraindications for Using The Vibe

The Vibe complies with the whole body vibration standards set forth by OSHA, the ISO, and the Canadian Centre for Occupational Health & Safety. The Vibe has been in constant use in hundreds of chiropractic clinics since 2001, each seeing hundreds of patients of all ages every day. In that time, not one adverse reaction has been reported that could not be discounted as temporary in duration and mild in intensity. However, in many of the literature sources about WBV, they do provide certain contraindications for its usage. In this section, those contraindications are listed, as well as descriptions about why each one may lead to possible complications.

Prescription Drug Use: The use of certain types of medications will reduce or impair the effectiveness of The Vibe. Fosamax, Actonel, Aredia, Zometa, or any other osteoporosis prescription will reduce the effectiveness of The Vibe in improving bone density. This is due to the formaldehyde-like action of these drugs upon the bone tissue. By inhibiting osteoclastic activity, bone loss is stopped, **but so is bone growth**. If you want the full benefits of new bone formation from The Vibe, discontinue use of these medications immediately. Also, many prescription drugs are expressed as toxins in the body's tissues, which will heighten the nausea and dizziness that accompany the toxic release effect of The Vibe.

Pregnancy: Although there are no documented negative effects of WBV upon an unborn fetus, there is no way to be sure that this experience is interpreted as a positive one by the unborn life. You may wish to decide for yourself whether or not to use The Vibe if you are or think you may be pregnant.

Acute Thrombosis / Severe Cardiovascular Problems: Theoretically, the activity of The Vibe could dislodge an embolism in an artery or vein, possibly causing a stroke or similar trauma. More likely, the vibration will safely break up and disperse an embolism or clot, but those who fear the worst may wish to consult with their doctor before using The Vibe.

Artificial Body Parts / Recent Surgeries: Vibration can be very challenging to the body, and those with large amounts of scar tissue may find The Vibe to be uncomfortable. Please do not attempt to push your body beyond its comfort zone in using The Vibe, especially after severe physical traumas such as surgery.

Epilepsy / Seizures: It is not known if WBV may provoke seizures in epileptic individuals. For safety's sake, do not use The Vibe if you have a history of seizures.

Acute Migraines: The effect of The Vibe upon the muscles and circulation may trigger a migraine in those who have a history of acute migraines. Please consult your doctor before using The Vibe.

Recommended Billing Codes

CPT Code
Description

97012	Mechanical Traction (Vibe w/traction) Intended for Acute Care ONLY
97110	Exercise Therapy (Vibe w/exercises or spinal weights)
97112	Proprioceptive Neuromuscular Re-education This is the recommended billing code for The Vibe
97530	Therapeutic Activity, attended Must be supervised by primary physician Highest RVU

All codes provided are recommended ONLY; we offer no guarantees of payment for any code. It is your responsibility to determine proper codes and fees for your area. Vibe For Health cannot be held liable for any misuse or misrepresentation of the products and/or services it provides. For more information or clarification of the above codes, please refer to the most recent edition of the CPT Manual.

Research & Literature on Whole Body Vibration

- 1) Rubin et al., 2004 C. Rubin, R. Recker, D. Cullen, J. Ryaby, J. McCabe and K. McLeod, Prevention of postmenopausal bone loss by a low-magnitude, high-frequency mechanical stimuli: a clinical trial assessing compliance, efficacy, and safety, *J. Bone Miner. Res.* **19** (3) (2004), pp. 343–351.
- 2) Gilsanz et al., 2006 V. Gilsanz, T.A.L. Wren, M. Sanchez, F. Dorey, S. Judex and C. Rubin, Low-level, high-frequency mechanical signals enhance musculoskeletal development of young women with low BMD, *J. Bone Miner. Res.* **21** (9) (2006), pp. 1464–1474.
- 3) Flieger et al., 1998 J. Flieger, T. Karachalios, L. Khaldi, P. Raptou and G. Lyritis, Mechanical stimulation in the form of vibration prevents postmenopausal bone loss in ovariectomized rats, *Calc. Tissue Int.* **63** (6) (1998), pp. 510–514.
- 4) Rubin et al., 2001a C. Rubin, A.S. Turner, S. Bain, C. Mallinckrodt and K. McLeod, Anabolism: low mechanical signals strengthen long bones, *Nature* **412** (6847) (2001), pp. 603–604.
- 5) Judex et al., 2002 S. Judex, L.R. Donahue and C. Rubin, Genetic predisposition to low bone mass is paralleled by an enhanced sensitivity to signals anabolic to the skeleton, *FASEB J.* **16** (10) (2002), pp. 1280–1282.
- 6) Oxlund et al., 2003 B. Oxlund, G. Ortoft, T.T. Andreassen and H. Oxlund, Low-intensity, high-frequency vibration appears to prevent the decrease in strength of the femur and tibia associated with ovariectomy of adult rats, *Bone* **32** (1) (2003), pp. 69–77.
- 7) Christiansen and Silva, 2006 B. Christiansen and M.J. Silva, The effect of varying magnitudes of whole-body vibration on several skeletal sites in mice, *Ann. Biomed. Eng.* **34** (7) (2006), pp. 1149–1156.
- 8) Xie et al., 2006 L. Xie, J.M. Jacobson, E.S. Choi, B. Busa, L.R. Donahue, L.M. Miller, C.T. Rubin and S. Judex, Low-level mechanical vibrations can influence bone resorption and bone formation in the growing skeleton, *Bone* **39** (5) (2006), pp. 1059–1066.
- 9) Castillo et al., 2006 A. Castillo, I. Alam, S.M. Tanaka, J. Levenda, J. Li, S.J. Warden and C.H. Turner, Low-amplitude, broad-frequency vibration effects on cortical bone formation in mice, *Bone* **39** (5) (2006), pp. 1087–1096.
- 10) Rubinacci et al., 2008 A. Rubinacci, M. Marenzana, F. Cavani, F. Colasante, I. Villa, J. Willnecker, G.L. Moro, L.P. Spreafico, M. Ferretti, F. Guidobono and G. Marotti, Ovariectomy sensitizes rat cortical bone to whole-body vibration, *Calcif. Tissue Int.* **82** (4) (2008), pp. 316–326.
- 11) Iwamoto et al., 2005 J. Iwamoto, T. Takeda, Y. Sato and M. Uzawa, Effect of whole-body vibration exercise on lumbar bone mineral density, bone turnover, and chronic back pain in post-menopausal osteoporotic women treated with alendronate, *Aging Clin. Exp. Res.* **17** (2) (2005), pp. 157–163.
- 12) Gusi et al., 2006 N. Gusi, A. Raimundo and A. Leal, Low-frequency vibratory exercise reduces the risk of bone fracture more than walking: a randomized controlled trial, *BMC Musculoskelet. Disord.* **7** (2006), p. 92.
- 13) Roelants et al., 2004b M. Roelants, C. Delecluse and S.M. Verschueren, Whole-body-vibration training increases knee-extension strength and speed of movement in older women, *J. Am. Geriatr. Soc.* **52** (6) (2004), pp. 901–908.
- 14) Belavy et al., 2008 D.L. Belavy, J.A. Hides, S.J. Wilson, W. Stanton, F.C. Dimeo, J. Rittweger, D. Felsenberg and C.A. Richardson, Resistive simulated weightbearing exercise with whole body vibration reduces lumbar spine deconditioning in bed-rest, *Spine* **33** (5) (2008), pp. E121–E131.
- 15) Bruyere et al., 2005 O. Bruyere, M.A. Wuidart, E. Di Palma, M. Gourlay, O. Ethgen, F. Richey and J.Y. Reginster, Controlled whole body vibration to decrease fall risk and improve health-related quality of life of nursing home residents, *Arch. Phys. Med. Rehabil.* **86** (2) (2005), pp. 303–307.
- 16) Bogaerts et al., 2007 A. Bogaerts, C. Delecluse, A.L. Claessens, W. Coudyzer, S. Boonen and S.M. Verschueren, Impact of whole-body vibration training versus fitness training on muscle strength and muscle mass in older men: a 1-year randomized controlled trial, *J. Gerontol. A: Biol. Sci. Med. Sci.* **62** (6) (2007), pp. 630–635.
- 17) Verschueren et al., 2004 S. Verschueren, M. Roelants, C. Delecluse, S. Swinnen, D. Vanderschueren and S. Boonen, Effect of 6-month whole body vibration training on hip density, muscle strength, and postural control in postmenopausal women: a randomized controlled pilot study, *J. Bone Miner. Res.* **19** (3) (2004), pp. 352–359.
- 18) Rees et al., 2008 S.S. Rees, A.J. Murphy and M.L. Watsford, Effects of whole-body vibration exercise on lower-extremity muscle strength and power in an older population: a randomized clinical trial, *Phys. Ther.* **88** (4) (2008), pp. 462–470.
- 19) Floyd et al., 1973 W. Floyd, A.B. Broderson and J.F. Goodno, Effect of whole-body vibration on peripheral nerve conduction time in the rhesus monkey, *Aerosp. Med.* **44** (3) (1973), pp. 281–285.
- 20) Prisby et al., 2008 R. Prisby, M.H. Lafage-Proust, L. Malaval, A. Belli, and L. Vico, Effects of whole-body vibration on the skeleton and other organ systems in man and animal models: What we know and what we need to know, [Ageing Research Reviews, Volume 7, Issue 4](#), December 2008, Pages 319-329
- 21) Turbanski et al., 2005 S. Turbanski, C.T. Haas, D. Schmidtbleicher, A. Friedrich and P. Duisberg, Effects of random whole-body vibration on postural control in Parkinson's disease, *Res. Sports Med.* **13** (3) (2005), pp. 243–256.
- 22) Novak and Novak, 2006 P. Novak and V. Novak, Effect of step-synchronized vibration stimulation of soles on gait in Parkinson's disease: a pilot study, *J. Neuroeng. Rehabil.* **4** (3) (2006), p. 9.
- 23) Ebersbach et al., 2008 G. Ebersbach, E. Daniela, O. Kaufhold and J. Wissel, Whole body vibration versus conventional physiotherapy to improve balance and gait in Parkinson's disease, *Arch. Phys. Med. Rehabil.* **89** (2008), pp. 399–403.
- 24) Bosco et al., 2000 C. Bosco, M. Iacovelli, O. Tsarpela, M. Cardinale, M. Bonifazi, J. Tihanyi, M. Viru, A. De Lorenzo and A. Viru, Hormonal responses to whole-body vibration in men, *Eur. J. Appl. Physiol.* **81** (6) (2000), pp. 449–454.
- 25) Erskine et al., 2007 J. Erskine, I. Smillie, J. Leiper, D. Ball and M. Cardinale, Neuromuscular and hormonal responses to a single session of whole body vibration exercise in healthy young men, *Clin. Physiol. Funct. Imaging* **27** (4) (2007), pp. 242–248.

- 26) Di Loreto et al., 2004 C. Di Loreto, A. Ranchelli, P. Lucidi, G. Murdolo, N. Parlanti, A. De Cicco, O. Tsarpela, G. Annino, C. Bosco, F. Santeusano, G.B. Bolli and P. De Feo, Effects of whole-body vibration exercise on the endocrine system of healthy men, *J. Endocrinol. Invest.* **27** (4) (2004), pp. 323–327.
- 27) Kvorning et al., 2006 T. Kvorning, M. Bagger, P. Caserotti and K. Madsen, Effects of vibration and resistance training on neuromuscular and hormonal measures, *Eur. J. Appl. Physiol.* **96** (5) (2006), pp. 615–625.
- 28) Cheung et al., 2003 J. Cheung, M. Zhang and D.H. Chow, Biomechanical responses of the intervertebral joints to static and vibrational loading: a finite element study, *Clin. Biomech.* **18** (9) (2003), pp. 790–799.
- 29) Roelants et al., 2004a M. Roelants, C. Delecluse, M. Goris and S. Verschueren, Effects of 24 weeks of whole body vibration training on body composition and muscle strength in untrained females, *Int. J. Sports Med.* **25** (1) (2004), pp. 1–5.
- 30) **Vibrations Shown to Build Bone, Reduce Fat**, by Joe Palca, *Morning Edition*, October 29, 2007
<http://www.npr.org/templates/story/story.php?storyId=15721992>
- 31) Da Silva et al., 2007 M. Da Silva, J.M. Fernandez, E. Castillo, V.M. Nuñez, D.M. Vaamonde, M.S. Poblador and J.L. Lancha, Influence of vibration training on energy expenditure in active men, *J. Strength Cond. Res.* **21** (2) (2007), pp. 470–475.
- 32) Garatachea et al., 2007 N. Garatachea, A. Jiménez, G. Bresciani, N.A. Mariño, J. González-Gallego and J.A. de Paz, The effects of movement velocity during squatting on energy expenditure and substrate utilization in whole-body vibration, *J. Strength Cond. Res.* **21** (2) (2007), pp. 594–598.
- 33) Miyazaki Y., Adverse effects of whole-body vibration on gastric motility, *Kurume Med J.* **47** (1) (2000), pp. 79–86.
- 34) Luo et al. 2009, [Influence of resistance load on neuromuscular response to vibration training](#). Luo, J; Clarke, M; McNamara, B; Moran, *J Strength Cond Res* 2009 Feb 7; Vol. 23, Issue 2; Page(s) 420-6
- 35) Melnyk et al., [Neuromuscular Ankle Joint Stabilisation after 4-weeks WBV Training](#). Melnyk, M; Schloz, C; Schmitt, S; Gollhofer, A. *Int J Sports Med* 2009 Mar 12
- 36) Edge et al., [The effects of acute whole body vibration as a recovery modality following high-intensity interval training in well-trained, middle-aged runners](#). Edge, J; M; ündel, T; Weir, K; Cochrane, DJ. *Eur J Appl Physiol* 2008 Nov 18; Vol. 105, Issue 3; Page(s) 421-8
- 37) Lamont et al., [Effects of 6 weeks of periodized squat training with or without whole-body vibration on short-term adaptations in jump performance within recreationally resistance trained men](#). Lamont, HS; Cramer, JT; Bemben, DA; Shehab, RL; Anderson, MA; Bemben, MG. *J Strength Cond Res* 2008 Nov 4; Vol. 22, Issue 6; Page(s) 1882-93
- 38) Zange et al., [20-Hz whole body vibration training fails to counteract the decrease in leg muscle volume caused by 14 days of 6 degrees head down tilt bed rest](#). Zange, J; Mester, J; Heer, M; Kluge, G; Liphardt, AM. *Eur J Appl Physiol* 2008 Oct 31; Vol. 105, Issue 2; Page(s) 271-7
- 39) Kemertzis et al., [Ankle Flexors Produce Peak Torque at Longer Muscle Lengths after Whole-Body Vibration](#). Kemertzis, MA; Lythgo, ND; Morgan, DL; Galea, MP. *Med Sci Sports Exerc* 2008 Oct 11
- 40) Luo et al., [Effect of vibration training on neuromuscular output with ballistic knee extensions](#). Luo, J; McNamara, B; Moran, K. *J Sports Sci* 2008 Oct 1; Vol. 26, Issue 12; Page(s) 1365-73
- 41) Kiiski et al., [Transmission of vertical whole body vibration to the human body](#). Kiiski, J; Heinonen, A; J; ärvinen, TL; Kannus, P; Siev; änen, H. *J Bone Miner Res* 2008 Mar 20; Vol. 23, Issue 8; Page(s) 1318-25
- 42) Abercromby et al., [Vibration exposure and biodynamic responses during whole-body vibration training](#). Abercromby, AF; Amonette, WE; Layne, CS; McFarlin, BK; Hinman, MR; Paloski, WH. *Med Sci Sports Exerc* 2007 Oct 3; Vol. 39, Issue 10; Page(s) 1794-800
- 43) Contraindications and Potential Dangers of the Use of Vibration as a Treatment for Osteoporosis and other Musculoskeletal Diseases: the Safety of Vibration as an Intervention for Osteoporosis, by *Clinton Rubin*.