TYPE II DIABETES
THE IMPACT AND EFFECTS OF WHOLE BODY VIBRATION

A HYPERVIBE WHITEPAPER
Once Type II diabetes develops in adulthood, it is generally treated through a combination of medication, diet, and exercise. If left unchecked or improperly governed, the condition may progress to affect the heart, kidneys, and nervous system.

Medical management has generally been directed at reducing the symptoms and potential complications of diabetes, and typically includes a recommendation for individuals to engage in an exercise program. Exercise, however, is often limited by fatigue, being overweight, balance issues, or experiencing joint pain or discomfort from peripheral neuropathy.

Whole Body Vibration, on the other hand, does not present these types of challenges — and in fact has demonstrated clinical results not seen in exercise alone.

Following are the top 5 reasons to consider WBV as a potential alternative exercise and therapeutic tool to combat the effects of Type II diabetes.

"WBV has been studied as an innovative training tool for individuals with this condition, and research has shown a range of positive and encouraging outcomes."
WHOLE BODY VIBRATION

REASON 1
Improved Blood Glucose Control

Blood sugar control is essential to managing diabetes and reducing the risk for disease-related complications.

When blood sugar levels rise to above-normal levels, this can cause inflammation of blood vessels and nerves, which contributes to decreased insulin sensitivity. Exercise is an important aspect of diabetes management, as it helps to regulate blood sugar by increasing this insulin sensitivity.

The most common gauges of blood sugar are hemoglobin A1C (HbA1c) — the average measurement of blood sugar over a 2- to 3-month period — and fasting blood glucose (FBG), which is indicative of the blood sugar level after an 8-hour period of fasting.

WBV has been shown to have a positive effect on reducing both FBG and HbA1c, which presents further implications for reducing the risks associated with elevated blood sugar.
One study cited a significant improvement in HbA1c by 0.8% after 6 weeks of WBV training program plus balance training at 15 to 30 Hz, 3 times a week. This was considered clinically significant as compared to a 0.2% change in subjects in a balance exercise group and a control group.¹

In another study, it was found that both HbA1c and FBG improved significantly at follow up after participants completed a 12-week WBV program, 3 times per week, at frequencies of 12 to 16 Hz.²

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¹ Whole-Body Vibration Training Improves Balance, Muscle Strength and Glycosylated Hemoglobin in Elderly Patients with Diabetic Neuropathy, Lee et al, 2013.

² Effects of a 12 week WBV Based Intervention to Improve Type II Diabetes (del Pozo-Cruz et al, 2013.)
Improved Mobility and Strength

Mobility is often affected in patients with diabetes due to pain and sensory deficits related to peripheral neuropathy. WBV has demonstrated the potential to improve functional walking ability.

A key test that is routinely performed to assess mobility in a clinical setting is called the Timed Up and Go (TUG) test. During this evaluation, the time it takes the individual to rise from a chair, walk 10 feet, turn around, and sit back down is recorded. An increased score is indicative of strength and balance issues, and is highly correlated with falling risk.

Multiple studies have indicated a significant improvement in the TUG score after 12 weeks of WBV training — including one program that measured a 13% improvement in the TUG score in comparison to subjects that did balance training alone.

In addition, the WBV training group in the above study exhibited a 22% improvement in the 5 Times Sit To Stand test, where the individual is assessed regarding how long it takes to rise from a chair 5 times. This measure is indicative of functional leg strength, where a shorter time to complete the test is reflective of improved strength.

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3. A Primary Care Based RCT of 12-week WBV for Balance Improvement in Type 2 Diabetes, del Pozo-Cruz et al, 2013.
Aerobic capacity is the maximum amount of oxygen the body is able to utilize during an exercise session. Higher aerobic capacity is indicative of a higher level of fitness.

A review of the research pertaining to WBV and patients with Type II DM conducted in 2016 revealed that aerobic capacity significantly increased, as measured by the 6-Minute Walk Test (6MWT), which records the distance that a person is able to walk in a 6-minute time period.

Relatedly, WBV has been shown to improve dilation of small blood vessels, both during training and afterward. This effect may help reduce pain associated with neuropathy, promote a decrease in resting blood pressure, and benefit blood flow.

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4. The Effect of WBV in Patients with Type 2 Diabetes: A Systematic Review and Meta-Analysis of RCTs, Robinson et al, 2016.

Balance deficits are common in patients with diabetes due to altered sensation in the feet as a result of peripheral neuropathy. Balance may also be affected by decreased muscle strength, which is often a direct result of decreased activity level.

The ability to perform unilateral stance (standing on one leg) is a common balance assessment. One study identified key improvements in this measure following completion of a 6-week WBV program, during which subjects performed the training twice a week for 6 weeks at 30 Hz. ⁶

The Berg Balance Scale is a standardized balance test consisting of 14 items, and is used to assess various aspects of static and dynamic balance. Another related study indicated a significant improvement in this score following a 6-week WBV program, which utilized various frequencies between 15 and 30 Hz and required subjects to attend 3 times a week.

In addition, the amount of postural sway was measured in this same study, and decreased by 36% with eyes open and 40% with eyes closed in the WBV group (combined with interventional balance training). ¹

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⁶ Short-term Effects of the WBV on the Balance and Muscle Strength of Type 2 DM Patients with Peripheral Neuropathy: A Quasi-Randomized Controlled Trial Study (Yoosemitejad et al, 2015.)
Peripheral neuropathy is defined as damage to the peripheral nerves in the body, which typically results in various symptoms including pain, numbness, and tingling in the hands and feet. Diabetic patients often suffer from this problematic issue, and it contributes to a decline in function.

A case study was conducted with a 71-year-old male with Type II DM, during which time he participated in a WBV treatment for 8 weeks. The subject received 3 bouts of vibration 5 times a week in seated position, with the front of both feet in contact with the vibration platform for 2 minutes.

Following completion of this program, the individual indicated a significant decrease in pain from 8/10 to 1/10 in his right foot and from 6/10 to 0/10 in his left foot. He was so satisfied with the results, in fact, that he purchased his own WBV unit for home use.  

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7. WBV Therapy for Diabetic Peripheral Neuropathic Pain, Hong, 2011.
Another study examined the effects of WBV on the Vibration Perception Threshold (VPT). Following a 6-week program in which participants received WBV 3 times a week for 11 minutes at 12 Hz — standing with knees flexed to 30 degrees with upper body support — a significant improvement in VPT was demonstrated.

These results were supportive of the hypothesis that WBV has potential to improve sensory perception in elderly patients with diabetic peripheral neuropathy: a finding that is positively correlated with improvement in balance and mobility.  

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8. Effects of WBV Therapy on Perception Thresholds of Type 2 Diabetic Patients with Peripheral Neuropathy: A RCT, Lee, 2017
WHY HYPERVIBE?

In summary, the research supports WBV as a safe, effective, and well-tolerated exercise tool for diabetes management. But what makes Hypervibe the right choice for you?

Our unique design combines several essential features and technologies that are necessary to maximize your WBV results. As such, when comparing Hypervibe with other products on the market, it is important to understand which elements yield the highest quality and best results for the money.

The following discussion aims to clarify a few of the most important factors to aid in your decision-making process.
PIVOTAL PLATFORM

Hypervibe’s pivotal design was based on a unit called the Galileo: the pioneer of this technology, which has been studied by space programs around the world. The Galileo, however, is not widely available to consumers due to its high cost.

Murray Seaton, the inventor of Hypervibe, revolutionized WBV technology through the creation of this high quality, compact unit, which includes a pivotal platform. Other units on the market which boast similar results are sometimes designed with lineal platforms — the distinction here being the way in which the platform moves to deliver the vibration.

A lineal platform primarily moves in an up / down fashion, whereas the pivotal platform includes a rotation component. This feature follows the normal movement of the pelvis and hips, thereby producing superior results in terms of muscle activation throughout the body. In addition, it reduces the amount of vibration that passes upward through the body into the head, which creates a more comfortable experience for the user.

As WBV is a new sensory experience for most individuals, it is important to note that the use of a pivotal platform also reduces or eliminates the possibility of unpleasant sensations that occur more frequently with use of a lineal platform, such as nausea and dizziness.

We actually found that Hypervibe was equal to or greater than Galelio from a technical standpoint for a fraction of the cost, and their customer service has been amazing.

Dr. Glenn Ruscoe
Lifecare Riseley Physiotherapy
THE BENEFITS OF

PIVOTAL VS. LINEAL

PIVOTAL PRODUCES BETTER

BLOOD FLOW  BONE STRENGTH  MUSCLE ACTIVATION

PIVOTAL CREATES UP TO 187% LESS HEAD VIBRATION

PIVOTAL SIMULATES A NATURAL WALKING MOTION

ONLY PIVOTAL DELIVERS

HIGH FREQUENCY

NEUROLOGICAL STIMULATION  BONE DENSITY  MUSCLE STRENGTH

LOW FREQUENCY

BALANCE  COORDINATION  RELAXATION
RANGE OF FREQUENCIES

Frequency refers to the speed of movement of the platform, which determines how the body receives and processes the vibration stimulus. Hypervibe’s wide range of frequencies, as low as 5Hz and up to 35Hz, allows the user to set the pace of the vibration to target specific goals such as relaxation, balance training, or strengthening. It is important to note here that this feature is also unique to our design as compared to our competitors.

Units that only produce high range frequencies, or those that only produce low range frequencies, do not offer the same range of benefits as Hypervibe. Our lower frequency settings can be used to promote widespread relaxation — which creates a calming effect on the nervous system to minimize pain and enhance mental clarity — while our higher frequency settings stimulate muscle strength, bone growth, weight loss, and hormonal benefits.

Higher frequency settings produce increased muscle contractions, which promote improved strength and power. This, in turn, can positively impact posture, balance, and proprioception.
Hypervibe is proud to be the only unit of its type on the market under $3,000 (with our entry G10 model retailing under $1,000). While this type of unit is very expensive to produce, Hypervibe’s creator is committed to quality.

The majority of individuals who purchase Hypervibe initially do so with a specific purpose in mind; however, most people who are seeking this type of exercise program are also contending with more than one ailment or injury. With that in mind, Hypervibe is able to help people address various fitness and health goals.
For example, an individual may wish to use Hypervibe primarily for strength training, but can also benefit from weight loss, diabetes management, bone density improvement, flexibility, and reduced back pain.

With Hypervibe, even individuals who are not very physically fit can start right where they are, and then progress gradually.

We have something to offer everyone at every level, from the elderly to elite athletes.
Hypervibe’s commitment to excellence is also reflected in the company’s design. We employ a knowledgeable and talented team of trainers who are well versed in helping our owners design individualized exercise programs — including for your lower back pain concerns.

Once you purchase a Hypervibe, you will be invited to schedule an introductory call, where one of our trainers will walk you through the process of using your unit step-by-step. You will discuss your current health status, fitness level, and any concerns that you have.

Your trainer will then help you figure out the best program to start with, as well as explain how you will be able to gradually increase the intensity of your workouts.

Having access to this type of support is critical to getting the most out of your unit, and will help you feel confident. Time and time again we have witnessed the many ways in which Hypervibe can transform your life — so now is the time to invest in your health and move one step closer to vitality!