STROKE (CVA)
THE IMPACT AND EFFECTS OF WHOLE BODY VIBRATION

A HYPERVIBE WHITEPAPER
A Cerebrovascular Accident (CVA), or stroke, is a significant cause of disability in adults, where the resulting impairments significantly impact an individual’s function and quality of life.

CVA typically causes injury to the brain due to a hemorrhage or blood clot. A hemorrhage involves a rupture or break in a blood vessel — causing the blood to leak into the surrounding tissue — while a clot leads to oxygen deprivation to the surrounding tissue, referred to as ischemia.

Issues related to stroke include hemiparesis (weakness), loss of sensation and proprioception in affected limbs, decreased balance, decreased quality of walking, and difficulty performing functional tasks. WBV is a novel treatment tool that can help individuals recovering from a stroke regain or improve functional mobility.

Following is an exploration of the top 5 reasons to consider including WBV as part of a training program to address the impairments associated with a CVA.

Exercise can be challenging for individuals following a CVA, due to limitations impacting movement; it is essential, however, to managing recovery successfully.
Hemiparesis refers to weakness, which typically occurs on one side of the body following a stroke. Research findings have suggested that training which activates muscles on both sides of the body is effective in producing more pronounced strength changes in the affected limb(s).

One study concerned with this area implemented a WBV program 3 times a week for 6 weeks, gradually increasing frequency from 30 Hz to 45 Hz. Subjects in the training group exhibited significantly increased strength of the quadriceps (muscle which straightens the knee) in their weak leg, where this change was maintained after a 6-week follow up.¹

REASON 2
Improved Proprioception

Proprioception refers to the body’s ability to sense the orientation of the limbs in space. As such, restoring proprioceptive ability following a CVA is a key element to improving walking quality and balance.

In one recent study, proprioception changes were examined following a 6-week course of WBV. Results supported the conclusion that vibration is able to safely provide intense stimulation of specific nerves that influence both proprioception and control of posture.  

REASON 3
Improved Balance

Balance issues are another common problem following a stroke. One study in this area examined balance and gait using a measure called the Timed Up and Go test (TUG).

This test involves rising from a chair, walking 3 meters (10 feet), turning around and sitting back down. The time it takes to complete this test is highly correlated with risk of falls, where a decreased time indicates a lower falling risk.

A research analysis commented on the results of two studies in which the TUG score significantly improved from baseline in the WBV group, as well as in comparison to a control group.  

Another related study involved participation in a WBV program for 15 minutes a day, 3 times a week for 6 weeks. This research program also included components of a conventional rehabilitation regimen in addition to WBV training.

Results indicated significant improvements in outcome measures, including a standardized balance test, the Berg Balance Assessment, as well as the TUG score when compared with the initial measurements in the WBV group. Once again, the control group subjects likewise did not demonstrate any significant changes.  

Walking quality is affected by many different variables after stroke. A common issue amongst many patients who have experienced a stroke is poor knee control, which typically involves hyperextension — meaning that the knee straightens, often forcefully, beyond its normal range, which can cause injury to the joint. Hence, restoring knee control is an important factor toward improving walking performance.

One study implemented a low-frequency WBV program at 6 to 10 Hz for 8 weeks, where subjects performed 60-second bouts for 10 repetitions per set (with 10-second rest breaks), over 8 sets per day. Participants in the WBV group demonstrated a significant difference in walking speed, assessed by the 10-meter walk test, as compared to subjects in the control group. In addition, subjects demonstrated decreased time with the knee in a hyperextended position when walking.  

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REASON 5
Improved Ability To Perform Functional Tasks

One aspect of function that is often impaired due to a stroke is the ability to use the impacted arm and hand effectively. This upper extremity function is affected both by loss of strength and increased or decreased muscle tone.

A recent study examining upper-body function implemented an 8-week WBV program for 10 minutes in a sitting position, and identified the effects on the arm and hand. Following completion of the research, a significant decrease in spasticity (increased muscle tone) was noted as per scores on the Modified Ashworth Scale, as well as significantly improved functionality scores on the Fugl-Meyer assessment.

Results from another related study also indicated that the ability to perform functional tasks improved with WBV, as noted by an improvement in the capacity of subjects to weight shift and reach from a sitting position. These changes occurred following participation in a WBV program 5 days a week for 15-minute bouts, while performing functional reaching tasks.


WHY HYPERVIBE?

In summary, the research supports WBV as a safe, feasible, and effective exercise tool for reducing the symptoms and improving function in individuals following a stroke. But what makes Hypervibe the right choice for you?

Our design combines this unique vibration technology with several essential features that are necessary to maximize results. As such, when comparing Hypervibe with other products on the market, it is important to understand which features 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

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 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!