

INTENDED PURPOSE OF WBV

1.0 Introduction

Whole Body Vibration (WBV) 3000 is an exercise and clinical machine for people to improve their physical health which then positively impacts on their mental/emotional health. The system is widely used in rehabilitation health facilities, in sporting training and in residential homes. The system provides Whole Body Vibration Training (WBVT). The machine is safe and non invasive. The research and clinical evidence suggests the benefits of utilising the WBV machine include:

- Reducing muscle pain and discomfort in the neck, shoulders, low back, knees and legs.
- Increasing body balance and flexibility.
- Increasing muscle strength, performance and power.
- Assisting athletes' pre and post exercise.
- Improves vitality and general health.
- Assisting with weight management.

2.0 How Does the WBVT Work?

WBVT is a treatment method that uses low to moderate vibration stimulus to improve neuromuscular health. The WBV platform provides mechanical oscillations from 3 to 40 hertz and “stimulates the body’s natural stretch reflex causing muscle contractions. The stretch reflex is controlled by stretch receptors called muscle spindles that are located in skeletal muscles...with WBV this reflex action is continually stimulated, so a muscle continues to contract and relax until the vibration stops” (Vella, 2005).

3.0 What Physical Body Structures Does the WBVT Target?

- Muscle tissue
- Nerves
- Blood vessels
- Bones
- Cartilage
- Hormones
- Neurotransmitters

4.0 Who Can Use the WBV?

WBV can be used by people of all ages and health levels. The machine is currently being used by elite athletes, medical health professionals (physiotherapists, occupational therapists, chiropractors) for rehabilitation and therapy, fitness and cosmetic/aesthetic purposes.

Clients are advised to consult their health practitioner if pain, spasm or discomfort is experienced during or after using the WBV. Clients with underlying medical conditions specified below are advised to seek medical attention prior to commencing WBV training and custom made programs can be designed for their specific needs. Those with the following medical conditions should consult a health practitioner before using the product:

- Presence of heart pacemaker
- Heart conditions
- Malignant tumours
- Low/high blood pressure
- Anaemia
- Pregnant women – DO NOT USE MACHINE.

5.0 What are the Benefits of Using Vibration Training by Clients?

5.1 Muscle Pain and Discomfort

Our neuromuscular system has its own natural frequencies and is constantly vibrating. When the neuromuscular system is out of balance our bodies consequently present with symptoms such as pain or muscle tension. When standing on the WBV, the vibrating mechanism counteracts the vibrations within the body and muscular system, to bring the body back to the natural vibrating frequency (through resonance). The vibrations stimulate the body's natural stretch reflexes and causes small muscle contractions, which in turn activate nerves in the spinal cord. The continual activation and stimulation of the nervous system via the spinal cord and brain create a learned response which permits the WBV to assist with lasting changes and clinical results (Wee & Beard, 2007).

5.1.1 Neck and Shoulder Pain

A study by Wee and Beard (2007) reported an improvement in neck pain for patients after using WBV. Patients also reported less tension in neck and shoulders, increased motivation, reduction in headaches and decreased neck stiffness (Wee & Beard, 2007).

5.1.2 Low (Lumbar) Back & Knee Pain

Post utilising WBV patients reported a decrease in low back pain (Wee & Beard, 2007, Fontana et al; 2005 and Rittweger et al, 2002). Subjects reported an improvement in low back stiffness and also increased flexibility (Wee & Beard, 2007). Subjective reports from patients include increased confidence in movement, increased strength in legs and increased energy levels (Wee & Beard, 2007).

5.1.3 Knee Pain

Results from a study indicated patients experienced increased stability and decreased knee pain after using WBV (Wee & Beard, 2007). Roelants et al (2003) results revealed WBV training increases knee-extension strength and speed of movement in older women.

5.2 Improving Body Balance and Flexibility

Preliminary evidence was found of short-term beneficial effects of WBV on postural control in stroke patients (Van Nes et al, 2004 and Van Nes et al, 2006). Studies have also shown improvement in balance and co-ordination for elderly persons who use WBV (Bruyere, 2005).

5.3 Increasing Muscle Strength, Performance and Power

The current evidence indicates that WBV training may be an effective exercise intervention for reducing the results of the ageing process in musculoskeletal structures (Cardinale & Wakeling, 2005). A study by Russo et al (2003) revealed vibration training increases muscle power in postmenopausal women.

5.4 Increase Vitality and General Health

5.4.1 Improve Bone Density

Patients with conditions such as degenerative arthritis and osteoporosis have been successfully treated with WBV according to a recent study (Rubin et al, 2006). Verschueren et al (2004) also investigated the effect of vibration training on hip density, muscle strength and postural control in postmenopausal women.

5.4.2 Improve Quality of Life

Bruyere (2003) found that controlled whole-body vibrations (CWBV) improve quality of life, walk, balance, and motor capacity in elderly patients.

5.5 Weight Management Assistance

WBVT purports to accelerate blood circulation and lymph drainage, strengthens collagen, and stimulates the release of growth hormone. In conjunction with health programs for diet, exercise and internal organ health, WBV assists with weight management (Fjeldstad et al, 2007).

5.6 Fitness & Athletes

5.6.1 Pre and Post Exercise

Positive effects can be used to enhance muscle stretching, and warm up prior to physical activity to prevent injuries. WBV training is widely used post surgery and injured athletes to fast track the recovery process by stimulating the nerves and muscles to increase strength, performance and power of the muscles and joints (Cochrane et al, 2004). A study by Cochrane & Stannard (1998) revealed that power and flexibility increases after acute WBV exposure and that WBVT may accelerate the warm up effect. A study also revealed that WBV can assist in improving strength and bone density (Cochrane & Stannard et al, 1998).

6.0 WBV and Other Modes of Treatment

Positive effects can be enhanced by using the WBV as an exercise platform and WBV can be used as an adjunct to other exercise and physical therapy treatments (Wee & Beard, 2007).

7.0 Conclusion

Whole Body Vibration (WBV) 3000 is a clinically endorsed system and is widely utilised in health clinics, sporting training facilities as well as in residential homes. The system assists in physical health which then positively impacts on mental/emotional health. The literature review reveals the following suggested benefits of utilising the WBV machine. Benefits include reducing muscle pain especially in the low back and neck, increasing body balance, muscle strength, performance and power. The studies also reveal benefits in assisting athletes' pre/post exercise, improving vitality, general health and weight management. The machine is safe and non invasive.

8.0 Bibliography

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Last entry