



Good Vibrations for Your Club

by Alex Mikheev

After many years of research and application in Russia and more recently in the U.S., it is time to learn about the different mechanical vibrations imposed on the human body and their applications. There are two general categories of mechanical vibration: Unintentional and Dosed. Unintentional vibration is often experienced in the workplace, in impact hammers, jack hammers, hand drills, etc., and may be considered hazardous when one is exposed to it for long periods of time. Dosed vibration has applications for relaxation, training in sport, and improving health and fitness. These findings have been well documented. There are two distinct types of dosed vibrations. Dosed Transverse Vibration (DTV) and Dosed Longitudinal Vibration (DLV).

DTV Vibration

An example of DTV is hand vibrators and massagers that are usually placed directly on the skin and transmit vibration into the body transverse or perpendicular to muscle fibers to cause relaxation and improve regional blood flow. These mechanical vibrations are orbital or round in shape and have a limited effect very close to the small contact area where applied. They are primarily used for relaxation and physical therapy. The range of frequency (number of vibrations per second) can be 2Hz to 150Hz. The amplitude (size of vibration) of the DTV is 0.5mm to 2mm, comparatively small compared to DLV.

DLV Vibration

In contrast, Dosed Longitudinal Vibration (DLV) is a distinctly

different linear shape of vibration. It is only found in a limited number of vibrating platforms, total body climbers, steppers, and selectorized weight stack machines. DLV travels parallel to, or along the muscle fiber, through tendons into the skeletal structure. To achieve the benefits of this Biological Activity Stimulation, it must be applied using special vibrating exercise machines, at the hands or feet during resisted static or dynamic exercise. This type of mechanical impulse strengthens and enhances the natural, intrinsic vibrations in the muscle and acts like a super charger for your "battery."

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The Advantages of DLV Vibration

DLV causes many significant positive changes in cardiovascular, neuromuscular, hormonal, blood, bone, and metabolic systems. These changes are specific to Dosed Longitudinal Vibration. They affect the entire body or organism due to the unique

nature of vibration traveling along and through the muscles, organs and skeletal structure. The full volume of the muscles are involved so the entire muscular/skeletal system is the receiver and transmits the mechanical energy into electrochemical energy from the muscles through the spinal cord, to the brain and back to the muscles. As a result all exercises performed with DLV are of maximum efficiency. The user, while exercising, accomplishes this without any additional effort. The most effective frequencies of DLV are very narrow, 28Hz to 30Hz (vibrations per second) and amplitude (size of vibration) 4mm to 5mm. Dosing is in accordance with general sports training theory and application. 20 minutes of vibration training per exercise session and no more than four days per week, on alternate days, is recommended.

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