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BY CLYDE SOLES

Jiggle, jiggle, toil and... trouble? If a lot of jostling, jiggling and vibrating can be bad for the body, could a little be good? That is the question GearTrends® set out to answer about the latest fitness trend: vibration training.

Google the term “whole body vibration” and nearly all the results on the first several pages are about the health hazards of long-term exposure. There are international medical conferences on the harmful effects of occupational vibration. The first American Conference on Human Vibration just took place in June 2006 with a focus on disorders of the vascular, neural and musculoskeletal system caused by chronic vibration exposure.

Yet, in the fitness world, the advertising, marketing and promotion for vibration training is gushing with claims, such as “twice the results in half the time” and “a quintessential tool in anti-aging and for living a longer healthier life.” Consumers are told that a few minutes per day of whole body vibration (WBV) does it all: tones muscles, firms tissue, improves circulation, drains the lymphatic system, treats overuse injuries, reduces cellulite, removes toxins, cures varicose veins, reduces pain, strengthens bones, increases flexibility, burns fat, improves balance, relieves tension and increases stamina. And—guess what?—you don’t have to exercise. Sounds like an infomercial come-on. We know our economics professors would say, “There ain’t no such thing as a free lunch,” but we also know the American public keeps seeking one. Hence, the quick and seemingly unquestioning acceptance of vibration for getting in shape.

For average individuals, WBV may be the latest fad to hit the fitness market. There really hasn’t been enough peer-reviewed research to say otherwise ... yet (we can’t know if there will ever be). However, there are potential benefits for special populations, such as fibromyalgia sufferers, bedridden patients and post-menopausal women.

SCIENCE WOBBLING A BIT

The websites for companies selling WBV machines tout a large number of studies that back up their claims and, at first glance, the claims make you want to get on board. Indeed, there are about 40 studies cited on various websites. (We’ve reviewed and summarized some of the key ones in another story, titled “Science Speaks,” at www.GearTrends.com/extras.)

But take a closer look: Many of the cited studies were published before 2003. (WBV products were introduced to the North American fitness world in 2004.) Missing are a number of follow-up studies published in the past three years that aren’t as glowing as some studies used by the companies selling WBV equipment. That’s particularly true when the subjects are young and healthy. So far, none of the studies GearTrends® was able to find have compared WBV to a rigorous strength-training or flexibility program (only to what would best be called “toning” programs) and very few have looked at changes in upper-body strength.

PHOTO COURTESY OF ORTHOMETRIX, INC.



OK up »

+ With little scientific research to back them up, are companies that hawk **WHOLE BODY VIBRATION PRODUCTS** offering a legitimate exercise solution?

“At present, whole body vibration exercise has limited scientific evidence to support or refute its relative effectiveness. The plentiful and extraordinary marketing claims regarding the benefits of WBV exercise tend to rely heavily on anecdotal reports and are, therefore, somewhat suspect,” Cedric X. Bryant, chief science officer for the American Council on Exercise, told GearTrends®.

Scott Hopson, director of education and training at Power Plate—the first company in North America selling vibration equipment—said he disagreed with that assessment. Hopson related reasons that the recent studies don’t apply to his company’s products. He pointed out that only two brands of WBV machines have any research at all and the differences between them are significant; hence, he said, a null result from the other brand doesn’t mean his doesn’t work. And he said that some of the studies are flawed because the scientists had a poor understanding of the concepts. Yes, for such a small segment, there is intense competition already.

Chrystele B. Zawislack, marketing manager for VibraFlex, also pointed out, “The results from a peer-reviewed study using a particular vibration pattern does not necessarily mean it will apply to a completely different kind of vibration pattern.” The pattern of how the machines jiggle you is one of the many differences the companies tout.

Given all this uncertainty over science and

conflicting claims about which machine does what, WBV is ripe for exploitation of the desperate, gullible, lazy or uninformed. It’s also become particularly attractive to athletes reaching far and wide for any performance edge—the companies note that’s the segment that originally used WBV in Europe—as well as to people who simply don’t want to exercise or sweat. (And we know that’s a huge part of the American public.)

ALL VIBES ARE NOT CREATED EQUAL

Indeed, it is true that different WBV machines shake things up differently. The two biggest variables are frequency (number of vibrations per second, expressed as hertz) and amplitude (the depth of vibration, measured in millimeters). The combination of the two results in an acceleration force on the body that is a multiple of the force of gravity (G force). Most of the research has been conducted on one of two early machines: either the Galileo/VibraFlex or the Power Plate/VibroGym. If the study references 27 hertz, it probably used the Galileo, which can reach nearly 25 Gs. If it mentions 40 hertz, the machine was likely a Power Plate, which has a maximum of just over 6 Gs. There is also a difference in the way the platforms shake: the Galileo acts like a seesaw (one leg goes up as the other goes down), while the Power Plate vibrates the

entire platform equally.

“Amplitude is everything,” is what Power Plate’s Hopson said at a seminar at the March 2006 IHRSA conference, running down a laundry list of everything it does. “This,” he added to the group of trainers and club managers, “is gold dust.”

To date, none of the published studies have compared the two machines to each other. And none of the newest personal vibration machines for the home has been tested in independent peer-reviewed studies, just as none of the machines from companies other than these two have been tested. There is also a paucity of data about differences in physiological responses using varied frequencies, amplitude or duration. Given this, as Bryant stated, it simply isn’t possible yet to categorically state that one machine is superior or that any of them do anything for healthy individuals.

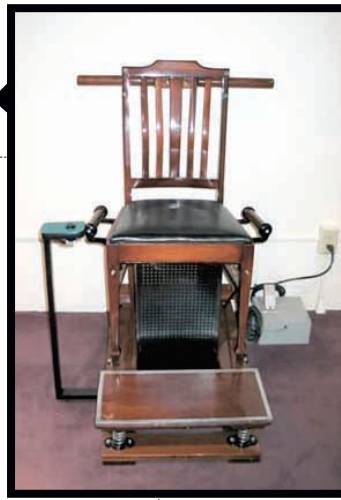
The VibraFlex 500 has a retail price of about \$12,000, while the Power Plate Next Generation sells for nearly \$10,000. Power Plate now offers a home model for \$3,500, and VibraFlex has a personal model coming out soon in the same price range. These are less powerful machines with fewer settings for frequency and amplitude (around 4 Gs). There are numerous spin-offs jumping into the market as well, such as the Pneu-Vibe, the FitVibe and the K-1 Exerciser. And the well-known VersaClimber is now also available in a model, the ExerVibe—think hand-over-hand climbing but with vibration—for about \$6,000. Even the infomercial classic, the



PHOTO COURTESY OF POWER PLATE NORTH AMERICA



John Harvey Kellogg's vibration machine was originally invented for medicinal purposes.



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 WBV are of maximum efficiency. The user, while exercising, accomplishes

this without any additional effort."

DANCING FASTER AND FASTER

While it is far from certain whether WBV is a valuable training aid for healthy individuals—even if used in Hollywood—it's quite clear that these machines can be dangerous

Soloflex, now includes WBV as a standard feature on its \$2,000 gym and \$1,800 leg press. Both the ExerVibe and Soloflex also directly vibrate the arms and hands. VibraFlex sells a vibrating dumbbell for \$4,400 (two for \$5,900) to work the upper body.

As with any exercise trend, everyone wants in and this is no exception, with the cheaper offerings now hitting the market. GearTrends® found the Health Mark Fibrafit Whole Body Vibration System on Amazon.com selling for \$240 with free shipping (no specs were available). Soloflex also sells a WBV platform for \$400 that looks like an aerobic-class step but with a motor attached that reaches 1 G. Yet despite the low joggle, promotion states, "Just standing on a WBV platform will make you sweat."

HISTORICALLY SPEAKING

There are a lot of tales spread about vibration therapy being invented for Soviet cosmonauts to prevent bone loss. While it may have been used in that space program and for training Eastern Bloc athletes in the 1970s, the concept is really much older, GearTrends® found. About 1857, the Swedish doctor Gustav Zander began building 70 different steam-powered machines for training, several of which used vibration. After the World Exhibitions of

PHOTO COURTESY OF FITVIBE USA

✦ "At present, whole body vibration exercise has limited scientific evidence to support or refute its relative effectiveness." – Cedric X. Bryant, American Council on Exercise

while increasing "oxygenation" of the body. Kellogg also had them stand on a vibrating platform to stimulate the inner organs. In 1912, Arnold Snow published a book titled, "Mechanical Vibration." While primarily about massage, much of what he wrote back then could be cut-and-pasted into current WBV company advertising. GearTrends® does not even want to know the purpose of something from that era—a "long rectal vibrator."

According to the user guide for the Soloflex WBV Platform, "Jackhammer operators carving Mount Rushmore had to press the hammers into the rock with their stomachs; it was the only way to get the leverage they needed. One operator reported after a few weeks of this pounding that 'his wife could dance on his stomach—with high heels!'... Clearly, the right vibrations have a powerful conditioning effect on muscles."

Today, we have these products used by Hollywood stars that "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

for some people. The list of no-no's includes: pregnancy, cardiovascular disease, recent surgery, spinal problems (acute hernia, discopathy, spondylolysis), gallstones, kidney stones, diabetes, epilepsy, blood clots (acute thrombosis), recent infections, migraine or tumors. In addition, WBV should be avoided by anyone with fresh hip or knee implants, a pacemaker, recently installed metal pins or plates, or women with a new IUD. Do you really know your clients and customers well enough to discuss their gallstones or recent IUD? Even use by highly conditioned athletes can be a bad thing. Most companies warn that the machines should not be used more than 20 minutes a day, with a rest day between sessions—a tough requirement for gym goers where the mentality can sometimes sway toward "more is better."

According to Power Plate, the company meets ISO standards for industrial vibration if exposure is limited to a maximum of two hours per day. However, the company also states, "it is useless to train longer than 20 minutes or more often than three or four times a week."

With all the uncertainty, it's clear that any retailer stepping into the home vibration market or retailer selling the equipment commercially will be wise to tread carefully despite, as Hopson described it, the temptation of "gold dust."



*** web extra**

To read overviews of selected studies focusing on vibration training, an added benefit for SNEWS® subscribers, go to www.gearrends.com/extras.

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