

## Technology : How Does It Work?



Acceleration Training™ with Power Plate® machines creates instability in the human body, as with each vibration the body is forced to perform reflexive muscle actions, 25 to 50 times per second. Furthermore, these contractions must work in multiple dimensions as the Power Plate® machines actually oscillate in all three planes, exactly as the human body is designed to do. The net result is an incredible improvement in force production, or strength and power.

The principle by which Power Plate® machines work lies in the law of motion, stated by Sir Isaac Newton: that the force of an object is equal to its mass multiplied by acceleration, or  $f = m \times a$ . What this means is that one can improve functional force (stability, strength or power) by either applying more mass or more acceleration to the body. Many forms of training and conditioning use mass - as seen in methods with weight machines, free weights, etc. Power Plate® machines, instead, use the second half of this equation, by applying acceleration to the body, while keeping mass, i.e. your body weight, the same.

This is a real breakthrough in training and conditioning as we can now optimally “load” the human frame while minimizing high impact, high load, and high stress factors. Gravity is the force that adds load to the human body every second of every day for every movement we perform. Through Acceleration Training™ exercise, Power Plate® machines make the body feel as though it “weighs” more every time acceleration forces increase.

The result is that you work against a far greater influence or “load” of gravity in every movement you perform. This is the essence of all strength and conditioning programs and Power Plate® machines simply use a different part of the same equation to achieve this! In fact, the amazing outcomes seen with Acceleration Training™ exercise respect the same biological and physiological laws of the body as witnessed in other forms of training. The difference is merely the nature of the stimulus applied (i.e. acceleration), and not the human response.