



Preliminary report by the Sport Science Institute at the University of Bayreuth, Germany

Originally invented by Soviet scientists during the Space Race, the concept of vibrational therapy was used to increase bone density and compensate for muscle wastage suffered by astronauts after long periods in space with zero gravity. Some years later the concept was adapted for sports application and used by Soviet gymnasts and athletes in preparation for the Olympic Games. It has since remained an integral part of the Russian aeronautic and athletic training programme.

The Study:

The objective of the study was to compare the advantage of vibrational training versus conventional training.

The study sample consisted of 57 students assigned to three groups: conventional training methods, Power-Plate training, and a non-training control group. Each subject underwent a preliminary assessment of strength and muscular endurance consisting of leg press, bench press and lat pull-down. This provided baseline data and allowed for a balanced subject selection for both training groups.

Training consisted of twice-weekly sessions over seven weeks. Both groups completed two sets of four exercises targeting the following muscle groups:

Target muscles	Power Plate	Conventional training
M. quadriceps femoris	one-legged squat	squats
M. latissimus dorsi	push-ups	seated row
M. pectoralis major	push-ups small	seated chest press

The rep range for the conventional hypertrophy exercises was 8-12, and took an average of 45 seconds per set to complete. Accordingly, Power Plate sets were programmed for the same duration.

Subjects training with conventional methods adapted the number of repetitions to their capacity. This increase/decrease in set size mirrored the increase/decrease in vibrational amplitude on the Power-Plate.

At the conclusion of the test period, the candidates underwent a second test, the results of which were compared to their initial performance. The percentage increase in strength (Fig. 1) and muscular endurance (Fig. 2) after both Power Plate and conventional training is illustrated in the following graphs:

Figure 1 Proportional Increase in Strength
(PP = Power Plate group, CK = conventional training)

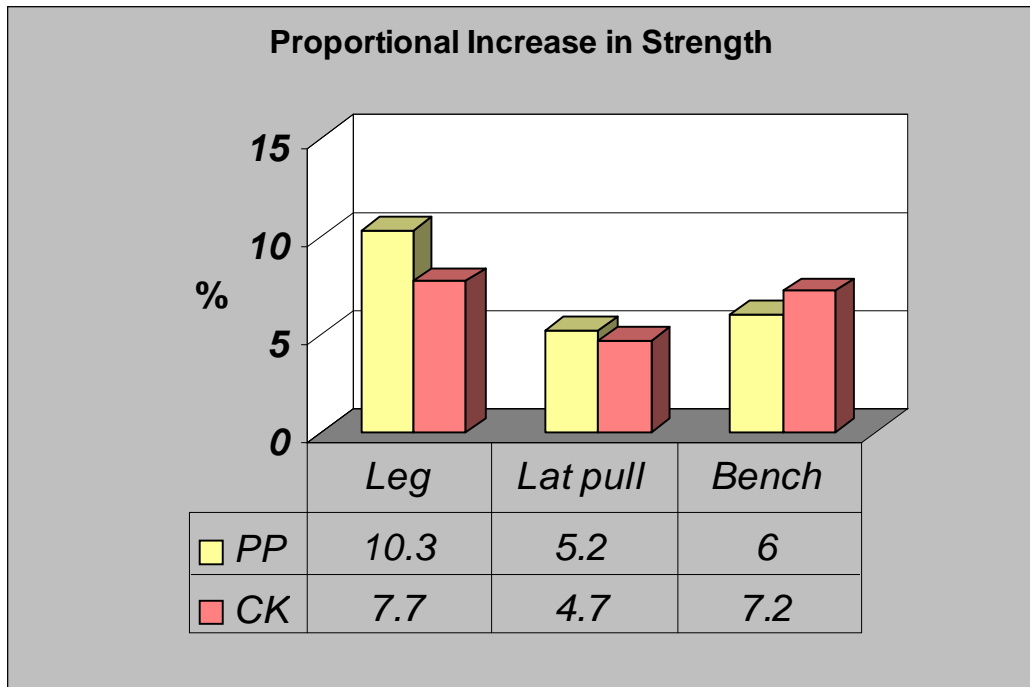
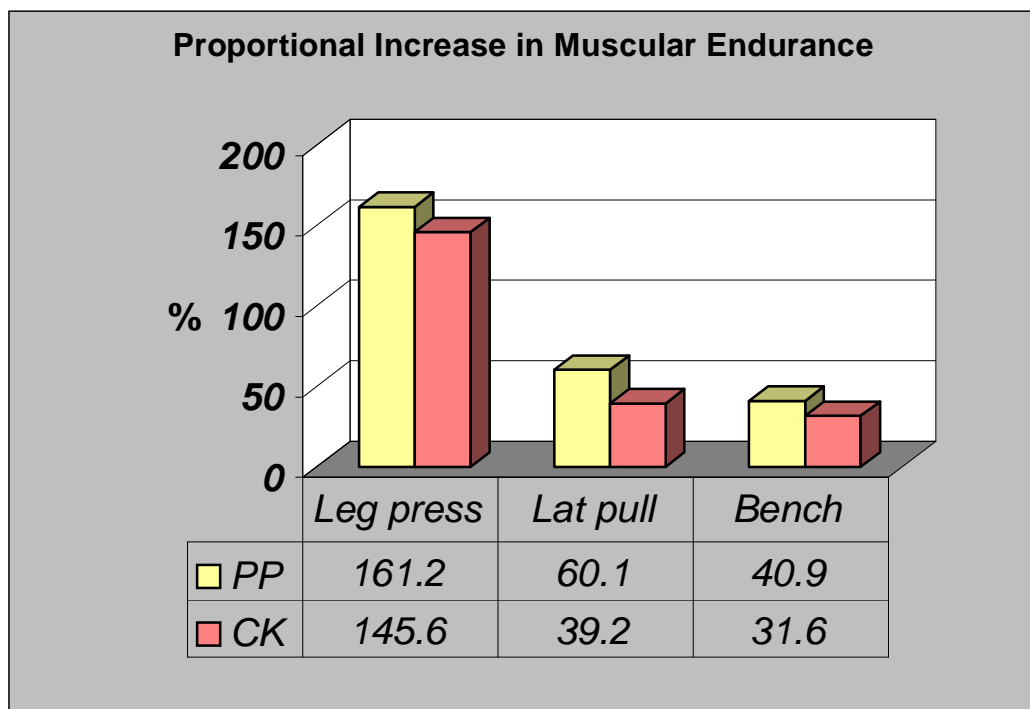


Figure 2 : Proportional Increase in muscular endurance
(PP = Power Plate group, CK = conventional training)



These positive results are of interest to a number of fields in which Power Plate (PP) can be utilised.

1. The Power Plate's vibrational therapy provides a complete core workout whilst training specific muscle groups, has a distinctive toning effect and speeds up the metabolism.
2. Power Plate training places considerably less strain on the body than unsupervised free weight and machine training, thus reducing the risk of orthopaedic injury. This is of particular relevance to the field of physiotherapy, where PP can be used on patients with osteoporosis, multiple sclerosis, rheumatoid arthritis or with common rehabilitation needs.
3. Power Plate is perceived as a more user-friendly training option by users, reducing motivational barriers to entry and drop-out rates.
4. Power Plate provides a time-efficient and effective whole-body workout in 30-40 minutes. This is an advantage for both the user and the health professional.
5. Finally, although PP weighs a respectable 90 kilos, it takes up no more than a square meter, an economic use of space in both private and public training areas.