

The Effects Of Six-week Whole Body Vibration Training On Sprinting

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Mechanical whole body vibration training has recently aroused large interest because it has been hypothesized that a low-amplitude, high-frequency vibration of the whole body could improve muscle strength and related abilities, where a recent study showed improvement in vertical jump after a 4-month training period.

PURPOSE

To identify the effects of the whole body vibration training on some kinematic and kinetic characteristics of sprint running.

METHODS

Twenty-six students of PE and sport voluntary participated in the study. The subjects were randomised to the vibration group and to the control group. Training was carried out in a standing position on a whole body vibration platform (Power Plate) for six weeks 3 times a week. Pre and post training tests were employed to measure the effects of training on the maximum strength of leg extensors and flexors, the maximum vertical height and the power of the squat jump as well as on the performance on 60 m sprint.

RESULTS

Vertical squat jump: The vertical squat jump improved significantly by 3.3% from 33.14 ± 4.87 cm to 34.22 ± 4.45 cm for the training group, whereas for the control group the vertical squat jump remained effectively constant. The power characteristics of the vertical squat jump did not improved significantly for both the training and the control groups. Performance on 60 m: The time of 60 m improved significantly by 2.1% from 8.19 ± 0.44 s to 8.01 ± 0.40 s for the training group, whereas for the control group the time of 60 m remained effectively constant. Consequently the distance intervals 0 - 10 m, 0 - 20 m and 0 - 50 m improved significantly by 4.3%, 3.0% and 2.1% respectively. The distance intervals for the control group remained effectively constant. Maximum strength of leg extensors: The maximum force of leg extensors did not improved significantly after the six-week training period for both the training and the control groups. Maximum strength of leg flexors: The maximum force of leg flexors did not improved significantly after the six-week training period for both the training and the control groups.

CONCLUSIONS

The findings of the present study suggest that the whole body vibration training method will produce a significant improvement in the vertical squat jump as well as in the performance of 60 m, whereas the strength characteristics did not show any significant differences.