

CYBEX Arc Trainer Improves Functional Lower Body Power

The Effects of High-Intensity Training on the CYBEX Arc Trainer on Functional Capacity in Moderately Fit Adult Men

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Introduction: In a previous study it was determined that if a suitably high resistance was used on a CYBEX Arc Trainer, subjects could improve their muscular endurance and work capacity. Assuming that the device lends itself to high intensity training, other benefits could include functional power as well.

Objectives: If a cardio device like the CYBEX Arc Trainer allows subjects to work at a very high level of intensity, will there be an improvement in functional lower body power?

Methods:

Ten healthy male subjects exercised exclusively on a CYBEX Arc Trainer, three days per week for three weeks. The subjects followed a 19-minute high intensity routine in which they exercised at 120 strides per minute, at a significantly high resistance, for four minutes, followed by a one-minute rest interval. The process was repeated four times, completing the exercise bout.

The subjects were tested on two indicators of functional lower body power. A maximum hop for distance indicated force production capability, while a maximum controlled leap determined their ability to absorb force.

Ten control subjects were tested for hopping and leaping distances at the beginning of the training program, and again at the end. They did not exercise during the three-week training period.



Results:

The Arc training group improved maximum hopping distance from 129.8 cm to 149.2 cm after three weeks of training. This 17% increase in force production was highly significant. In contrast, the control group demonstrated no improvement in force production (figure 1).

The Arc training group's maximum controlled leaping distance increased from 143.6 cm to 163.0 cm after three weeks of training. This 14% increase in force absorption was highly significant. In contrast, the control group demonstrated no improvement in force absorption (figure 2).

Conclusion: The CYBEX Arc Trainer allows users to select high loads and speeds, resulting in significant improvements in lower body power. This has potential carry-over effects to running, jumping, and change-in-direction for athletic groups, and basic ambulation in aging populations.

Maximum Hop For Distance

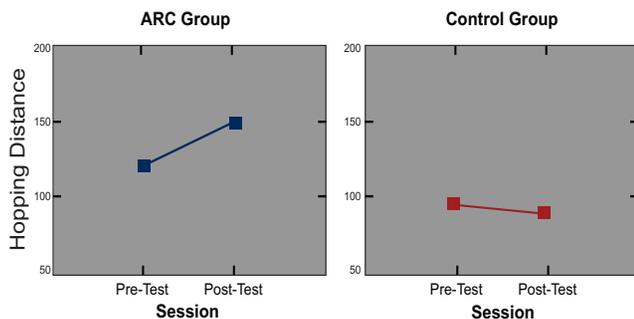


Figure 1. Functional Power (Force Production)

Maximum Controlled Leap

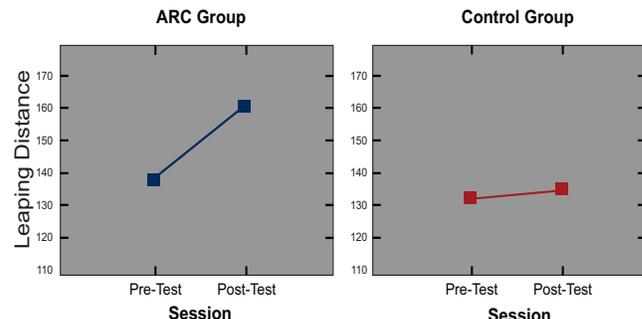


Figure 2. Functional Power (Force Absorption)



This study is available in its entirety at
www.cybexinstitute.com.