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## **POSTURE AND ARM USE IMPACT CALORIE BURN DURING CARDIOVASCULAR CROSS TRAINING**

*New Study by Cybex Research Institute and University of Massachusetts-Lowell  
Reveals Link between Posture and Metabolic Cost*

**MEDWAY, MA, December 12, 2013** – A recent study conducted by the Cybex Research Institute and the University of Massachusetts-Lowell uncovered how body posture can positively impact exercise. Published by the *Journal of Exercise Physiology Online*, “Arm Use and Posture Alter Metabolic Cost During Non- Impact Cardiovascular Cross Training at a Constant Machine Workload” determined the influence of using the machine’s arms and shifting posture on calorie burn during exercise on a non-elliptical cross trainer, the Cybex Arc Trainer.

“Past research focused largely on caloric expenditure while using cardio cross trainers in a single, generic upright posture. However, there are a variety of different ways to use the Arc Trainer,” said Cory Hofmann, Research Project Manager at the Cybex Research Institute. “Our goal was to gain a better understanding of how the different ways of using the Arc Trainer can influence one’s workout.”

### **Experimental Design & Results**

Fifteen healthy subjects were asked to exercise at a constant machine workload, which was equivalent to about 70 percent of their maximum heart rate while using the Cybex Arc Trainer. Three experimental conditions were then examined:

1. **Working upright while unsupported:** standing upright without grasping hand grips for support or using the moving handles
2. **Working upright while supported:** pulling on the mobile handles during upright exercise
3. **Leaning forward and anchoring the body:** leaning forward while assuming an inclined posture to anchor the body against the machine’s console

“For each subject, all of the postures were performed at the same incline, resistance, and speed,” notes Hofmann. “The research reveals that, without increasing any of the machine’s settings, an exerciser can experience a significant difference in calorie burn based on how they interact with the Cybex Arc Trainer.”

The findings showed that using both the arms (6.0%) and leaning forward while anchoring the upper body (7.7%) resulted in significant increases in energy expenditure relative to working upright and unsupported. That means caloric expenditure can be altered by as much as 7.7% by making simple postural alterations while at the same machine workload (speed, resistance, and incline).

### **Benefits of Partner-Based Research**

In the past, Cybex has partnered with University-based exercise science laboratories to learn more about calorie burn on the Arc Trainer. A study conducted in 2006 by University of Wisconsin-Lacrosse found that users burned 16 percent more calories on the Arc Trainer compared to other cross trainers at the same perceived effort. This most recent collaboration was unique in that it was performed entirely within the new Cybex Research Institute laboratory by researchers from the University of Massachusetts-Lowell and the Cybex Research Institute.

“Given the Cybex Research Institute’s relationship with a for-profit organization, we have to overcome the perception of potential bias in our work; therefore, it is critical to publish credible, peer-reviewed research,” continued Hofmann. “The peer-review process does a great job at ensuring that biases and flaws in experimental design are minimized in the scientific community. The Cybex Research Institute hopes to continue expanding its role as a leader in exercise research and education in the fitness industry.”

To read the study in its entirety, visit <http://media.cybexintl.com/cybexinstitute/research/Arc-Posture.pdf>

### **ABOUT CYBEX INTERNATIONAL**

Cybex International, Inc. is a leading manufacturer of premium exercise equipment. The Cybex product line, which includes a full range of strength and cardio training machines, is designed using exercise science to reflect the natural movement of the human body. Led by the Cybex Research Institute, Cybex fitness equipment is engineered to produce optimal results for users from the first-time exerciser to the professional athlete. Cybex designs and builds its products in the USA for a wide range of facilities, from commercial health clubs to home gyms, in more than 85 countries worldwide. For more information on Cybex and its products, visit the Company’s website at <http://www.cybexintl.com>.

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