

## **DynEx study at Miami University**

Preliminary Results September 3, 2003

### **Abstract:**

The major goal of this study was to determine whether or not there was a correlation between isometric exercise and muscular strength and endurance. Another goal of this study was to determine if isometric exercise would yield a cross-over effect. A total of 20, randomly chosen subjects were studied in each of 18 exercise sessions conducted with a DynEx device using a Fixed Therapy regimen at 50% MVC and 4 repetitions per session. Each subject completed a total of 3 endurance tests with his/her dominant arm and 2 with his/her non-dominant arm. The subjects also performed a total of 15 additional exercise sessions each with their dominant arms. Every test or exercise session began with a Maximum Voluntary Contraction (MVC) to test strength gains or losses. It was evident that there existed a strong correlation between isometric exercise and strength gain. Also, there existed a large overall endurance increase in the dominant arm from the first session to the intermediate session. The topic of interest and controversy is the cross-over effect. This study provided evidence that cross-over training does occur with an overall strength gain in the non-dominant, untrained arm by 13.7% compared to 19.5% in the dominant arm. Endurance in the dominant arm increased by 112%. The chart shows impact of isometric training on strength and endurance in the dominant arm during 6 weeks of training.

# Results (50% Fixed Therapy)

