



# OTTO AND SMITH ASSOCIATES, INC.

CONSULTANTS IN COMPREHENSIVE *Health/Fitness* SERVICES

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## **Purpose:**

To evaluate the magnitude of muscle mass activation in three Ab Coaster exercise positions surface electromyography studies were conducted while abdominal muscle exercises were performed.

## **Methods:**

Twelve subjects consisting of seven males and five females, performed the following exercises:

1. Ab Coaster center fixed position
2. Ab Coaster extreme right fixed position
3. Ab Coaster free floating position from extreme right to extreme left

## **Results:**

Statistical analysis by ANOVA at the  $p < .05$  level of significance reveals all exercises produce a significant requirement of muscle activation of key core muscles (upper and lower rectus abdominus, and the bi-lateral external obliques). EMG activity revealed significant electrical activity of the aforementioned muscles, which translates into muscle recruitment or the activation of this core musculature. In addition, trapezius muscle activation, which is indicative of neck muscle recruitment (neck strain), exhibited relatively lower activation.

In essence, this study confirms that the Ab Coaster recruits the primary muscles of the core musculature, while limiting neck muscle activation. The Ab Coaster allows exercise enthusiasts to focus on abdominal muscle recruitment in a safe exercise position.

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