

## ABSTRACT

### ELECTROMYOGRAPHIC COMPARISON OF ABDOMINAL EXERCISES ON A STABLE AND UNSTABLE SURFACE

The purpose of this study was to determine whether abdominal exercises performed on an unstable surface (physio ball) were more effective at recruiting the abdominal stabilizing muscles than exercises performed on a stable surface (bench). Twenty male subjects performed eight exercises on the ball and the bench. Joint angles and range of motion were kept consistent between subjects and between the ball and bench. Electromyographic data were recorded from the rectus abdominis, external oblique, and internal oblique during the eight exercises and expressed as a percentage of maximum voluntary contraction. Multiple paired  $t$  tests (12) showed nonsignificant differences between conditions with the exception of the crunch twisting to the right that evoked significantly greater recruitment of the rectus abdominis on the ball ( $p \leq 0.000$ ). The study shows that the unstable condition of the physio ball alone is not sufficient at significantly increasing the recruitment of the abdominal stabilizing muscles.

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