

Siriphan Norchai 2006: The Effect of Core Body Strength Training on the Floor and Exercise Ball upon the Abdominal Development and Agility in First Grade Students. Master of Science (Sports Science), Major Field: Sports Science, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Apiluk Theanthong, M.S. 76 pages. ISBN 974-16-2118-3

The purpose of this study was to examine and compare the effect of core body strength training on the floor and exercise ball upon abdominal development and agility. Forty-five male first grade students of Rittiyawannalai School were recruited by simple random sampling. Each subject was assessed for abdominal strength and agility by performing sit-ups for 60 seconds and zig-zag running. The subjects were randomly assigned to 3 different groups, 15 in each. The control group performed their usual activities. The experimental group 1 performed core body strength training on the floor while the experimental group 2 performed core body strength training on the exercise ball. The experimental groups participated in the training sessions 3 days a week (Monday, Wednesday and Friday) from 3.30-4.30 p.m. for 8 weeks. The subjects were assessed for their abdominal strength and agility before and after the 4 –week and 8-week training programs. Data were analyzed using mean, standard deviation, multivariate analysis of variance (MANOVA) and one-way analysis of variance with repeated measure. Tukey test was used to examine if statistically significant ( $p < .05$ ) differences existed.

Data analysis revealed a significant difference of the abdominal development and agility in the experimental group 1 and group 2 from the control group after the 8 – week training program ( $p < 0.05$ ). No significant differences were observed between the experimental group 1 and group 2. It appears that core body strength training programs both on the floor and on the exercise ball positively affect abdominal development and agility. The results of this study may be later used to develop core body strength and movement skills of first grade students.

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Thesis Advisor's signature

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