

Effect of High-Intensity Core Muscle Exercises Training on Sport Performance in Dancers

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Abstract : Traditional core stability, core endurance, and balance exercises on a stable surface with isometric muscle actions, low loads, and multiple repetitions, which may not improvements the swimming and running economy performance. However, the effects of high intensity core muscle exercise training on jump height, sprint, and aerobic fitness remain unclear. The purpose of this study was to examine whether high intensity core muscle exercises training could improve sport performances in dancers. Thirty healthy university dancer students (28 women and 2 men; age 20.0 years, height 159.4 cm, body mass 52.7 kg) were voluntarily participated in this study, and each participant underwent five suspension exercises (e.g., hip abduction in plank alternative, hamstring curl, 45-degree row, lunge and oblique crunch). Each type of exercise was performed for 30-second, with 30-second of rest between exercises, two times per week for eight weeks and each exercise session was increased by 10-second every week. We measured agility, explosive force, anaerobic and cardiovascular fitness in dancer performance before and after eight weeks of training. The results showed that the 8-week high intensity core muscle training would significantly increase T-test agility (7.78%), explosive force of acceleration (3.35%), vertical jump height (8.10%), jump power (6.95%), lower extremity anaerobic ability (7.10%) and oxygen uptake efficiency slope (4.15%). Therefore, it can be concluded that eight weeks of high intensity core muscle exercises training can improve not only agility, sprint ability, vertical jump ability, anaerobic and but also cardiovascular fitness measures as well.

Keywords : balance, jump height, sprint, maximal oxygen uptake

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