

DOES SPORTS BRA LIMIT METABOLIC PROFILES DURING CONSTANT SPEED RUNNING?

THANACHAI SAHASCHOT 5536652 SPSS/M

M.Sc. (SPORTS SCIENCE)

THESIS ADVISORY COMMITTEE: THYON CHENTANEZ, Ph.D., METTA PINTHONG, Ph.D., RUNGCHAI CHAUNCHAIYAKUL, Ph.D.

ABSTRACT

The objective of this study was to investigate whether or not sports bras distress the metabolism during jogging. Fifteen healthy female subjects participated in three exercise trials of no bra (NB), casual bra (CB), and sports bra (SB) conditions. Exercise conditions were exercise conducted on a motor-driven treadmill at 4 mph, 0% grade, and up to 80% of age-predicted maximum heart rate with randomized bra conditions. Anthropometric data and maximum oxygen consumption were determined under the CB condition. The results revealed that there were no changes in metabolic profiles of SB at rest and during exercise when compared with that of CB and NB conditions. With the exception of respiratory exchange ratio (RER), all groups exhibited similar changing patterns of rate of oxygen consumption ($\dot{V}O_2$), rate of carbon dioxide production ($\dot{V}CO_2$) and energy expenditure (EE), which related to the intensity of exercise, and these changes declined during the recovery period. Between-group comparisons showed no significant differences of metabolic variables among NB, CB, and SB. However, while NB had immediate recovery, SB recovery was delayed for 1-2 min and CB was further delayed for 3 min. In addition, this study demonstrated the critical roles of the glycolytic pathway as a main energy substrate. In conclusion, sports bras do not limit metabolic profiles at rest and during exercise but may delay some recovery processes.

KEY WORDS: ENERGY EXPENDITURE/ EXERCISE/ BRASSIERE

60 pages