

**DOES SPORTS BRA LIMIT RESPIRATORY FUNCTION DURING CONSTANT SPEED EXERCISE?**

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METTA PINTHONG, Ph.D.**ABSTRACT**

The present study aimed to investigate the effect of a sports bra on respiratory function at rest and during exercise. Sixteen healthy females voluntarily and repeatedly participated in three randomised trials using no bra (NB), casual bra (CB) and sports bra (SB). They were tested using standard resting spirometer protocol. Static lung volumes included tidal volume ( $V_T$ ), inspiratory capacity (IC), vital capacity (VC), inspiratory reserve volume (IRV), expiratory reserve volume (ERV), respiratory rate (RR), minute ventilation ( $\dot{V}_E$ ); and dynamic lung volumes included forced expiratory volume in 1 second ( $FEV_{1.0}$ ), forced vital capacity (FVC), forced expiratory volume in 1 second and forced vital capacity ratio ( $\%FEV_{1.0}/FVC$ ), maximum voluntary ventilation (MVV) and peak expiratory flow rate (PEFR) before and immediately after putting on bras. Exercise was conducted on a motor-driven treadmill at a constant speed of 4 mph continuously until the heart rate reached 60, 70, and 80% of age-predicted maximal heart rate (MHR). Only some of these lung parameters were detected during exercise. Data were compared at rest, 60, 70, and 80% MHR and every min of the 5 min recovery period. The results showed that  $FEV_{1.0}$ , FVC, and MVV were significantly decreased ( $p < 0.05$ ) when compared between pre- and immediate post- SB condition. During exercise, there were no significant differences of respiratory functions between bra conditions at 60, 70, and 80% MHR. In conclusion, the sports bra exhibited reductions only for dynamic components of lung function. This effect disappeared as exercise was commenced. There was no limitation on respiratory function of either static or dynamic components during exercise. The present study indicates that this brand (Wacoal, WR1466) of commercial sports bra does not limit respiratory functions during exercise and may be appropriate for females with an active lifestyle.

**KEY WORDS: SPORTS BRA / RESPIRATORY FUNCTION / EXERCISE**

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