



## Sports Bras on Cardiopulmonary and Metabolic Functions during Progressive Exercise

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## Abstract

Introduction: Sports bra potentially protects injury around the breasts, but only 13% of adolescent females and 41% of women put on sports bras during physical activity. This is based on the belief that elastic garments induce chest wall restriction. To investigate the influences of wearing sports bras on cardiopulmonary and metabolic functions at rest and during exercise, thirteen healthy females, with B and C cup sizes, voluntarily participated in jogging exercises with 3 randomised trials of no bra (NB), casual bra (CB), and sports bra (SB). Standard pulmonary function test was used to measure static and dynamic lung functions before, immediately after wearing different bras, during exercise and recovery period. Moreover, metabolic and cardiovascular functions were continuously monitored at rest, during exercise and recovery period.

Results: Immediately after wearing SB, FEV<sub>1,0</sub> and MVV were decreased ( $p < 0.05$  and  $0.01$ , respectively) compared with pre-bra, while static lung functions remained. However, normal respiratory functions regained during exercise and showed no significant differences between three bras conditions at 60, 70 and 80% of age-predicted maximal heart rate ( $p > 0.05$ ). Furthermore, between-group comparisons showed no significant differences of metabolic and cardiovascular variables among three bras ( $p > 0.05$ ).

Conclusions: Wearing sports bras temporarily reduced only some dynamic but not static respiratory functions. After familiarization, all lung functions regained and sustained throughout exercise where metabolic and cardiovascular functions were not affected. The present study indicated that wearing sports bras do not limit respiratory, metabolic and cardiovascular functions during exercise and suitable for female during jogging.

Keywords: Sports bra, Pulmonary function, Cardiovascular function, Metabolic function, Exercise