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**References**


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**Response**

To the Editor:

We are grateful for the insightful comments by Dr. Maeder and colleagues regarding our article in *CHEST* (September 2008).1 We agree that adipose tissue is metabolically inert; however, in those individuals with larger body habitus, higher absolute values of maximum oxygen consumption (milliliters per minute) are obtained based solely on having larger muscle mass. As reported earlier,2 correction for body mass allows comparisons to standards previously reported for healthy individuals and for those with heart failure. Regardless, when using absolute values of maximum oxygen uptake (milliliters per minute), there remained a significant decrease in cardiorespiratory fitness in the cohort with obstructive sleep apnea syndrome (OSAS) compared to the cohort without this disorder (Table).

Although, we regret our description of the study by Maeder et al as having a small sample size, we do not believe that this study of natriuretic peptides in patients with obstructive sleep apnea is contradictory to our study results, as they excluded patients without OSAS and did not have a control group. Furthermore, there were major differences in obesity between these two populations (body mass index was 48.6 kg/m² in the present study and 30.2 kg/m² in the previous study.) We are very pleased to see that cardiorespiratory fitness in individuals with OSAS is improved following treatment with continuous positive airway pressure because this answers a key question posed by our study results.3

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**Peak Oxygen Consumption and Heart Rate Recovery in Patients With the Obstructive Sleep Apnea Syndrome**

*To the Editor:*

We would like to comment on the article recently published in *CHEST* (September 2008) by Vanhecke et al,1 who reported that morbidly obese patients with obstructive sleep apnea syndrome (OSAS) had lower peak oxygen consumption (VO₂) and slower heart rate recovery than obese patients without OSAS.

First, given that fat is a metabolically inactive indexing of peak VO₂ to body weight in obese patients can be misleading with respect to the severity of functional impairment.2 Body weight is not cited in the article, but body mass index tended to be higher in OSAS patients;1 therefore, we wondered whether absolute peak VO₂ (expressed in liters per minute) or percent predicted peak VO₂ (equations typically do not include weight) also differed between groups. Interestingly, the majority of patients were women who generally have less lean body mass than men. We also encourage the authors to report values for respiratory exchange ratio at peak exercise as this will help to interpret data. In a study among 81 less obese OSAS patients,3 which was quoted by Vanhecke et al (42 OSAS patients) as one of the studies “limited by small sample sizes,” we have found that percent predicted peak VO₂ was normal in patients with mild, moderate, and severe OSAS. Notably, apnea-hypopnea index (AHI) was similar in both reports (mean AHI, 32.5 episodes/h; median AHI, 34 episodes/h).1,3

Second, the observation of a delayed heart rate recovery in OSAS patients1 is not novel but concurs very nicely with the findings of our previously published study4 revealing that OSAS severity expressed as AHI was independently associated with heart rate recovery 1 min after exercise termination. We further demonstrated in an uncontrolled trial5 that nasal continuous positive airway pressure ventilation for approximately 8 months led to an improvement in heart rate recovery 1 min after exercise termination and heart rate recovery 2 min after exercise termination in patients with severe OSAS.

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