

# The Relationship between Lung Function and Metabolic Syndrome in Obese and Non-Obese Korean Adult Males (*Korean Diabetes J* 2010;34:253-60)

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The association between type 2 diabetes mellitus and impaired ventilatory lung function has been well documented in many studies [1-3]. One of the most important mechanisms underlying the association between type 2 diabetes mellitus and impaired lung function has been thought to be insulin resistance [4,5]. In Caucasians, forced vital capacity (FVC) and forced expiratory volume in one second (FEV<sub>1</sub>) have been significantly associated with homeostasis model assessment of insulin resistance (HOMA), the marker of insulin resistance [4,5].

Metabolic syndrome (MetS) is a disease characterized by insulin resistance [6], suggesting that MetS might be associated with lung function. Kim et al. [7] showed that FVC values were significantly lower in a MetS group of Korean adult male subjects compared with those of the non-MetS group. In their study, the HOMA index was independently associated with FVC in multi-linear regression analysis after adjusting for age, height, and MetS components [7], consistent with the results of previous studies [4,5]. However, in the present study, the MetS group was significantly older than the non-MetS group, and age is a very important determining factor in lung function. I wonder whether the MetS group had lower FVC or FEV<sub>1</sub> than did the age-matched non-MetS group. In addition, the pulmonary function test using a spirometer is composed of forced inspiration and expiration, and the forced inspiration is affected by respiratory muscle power. The decrease in muscle mass often

found in subjects with insulin resistance results in muscle weakness and decreases in FVC and FEV<sub>1</sub> [8]. The independent association between insulin resistance and FVC in this study may have been confounded by muscle mass; thus, further consideration of muscle mass is needed.

The elderly population is growing very rapidly in Korea. This study is important to understand the association between MetS and lung function in the Korean population and indicates the importance of MetS management for preservation of pulmonary function, one of the important determinants of comorbidity in the elderly population.

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