

# The association between risk of metabolic syndrome and occupational, leisure-time and commuting physical activity in Korean workers: KNHANES 2014-2016

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## Abstract

While the relationship of leisure time physical activity (LPA) and metabolic syndrome (MetS) is well documented, effect of occupational physical activity (OPA) on MetS is conflicting. Aim of this study is to examine the relationship between different type of physical activity and risk of metabolic syndrome using a representative sample of South Korean adults.

Study included 7057 workers (3795 men and 3262 women) aged 20 to 65 without cancer and arthritis at baseline, from the Korea National Health and Nutrition Examination Survey in 2014-2016. Information on OPA, LPA and commuting physical activity (CPA) were self-reported and blood pressure and biochemical determinations of the blood were also obtained. MetS was defined as the presence of three or more of the National Cholesterol Education Program-Adult Treatment Panel III criteria. Chi-square test and multiple logistic regression analysis were used to investigate relationship between different type of physical activity and MetS.

The prevalence of MetS was 25.7 % in the study subject. The percentages of active OPA in MetS and non-MetS groups were 6.7% and 5.0%, respectively. Compared with inactive level of LPA, sufficient level of LPA showed a significantly lower risk of MetS (OR 0.73, 95% CI 0.60-0.89) after adjustment for confounding factors. Conversely, active OPA showed increased risk of MetS (OR 1.09, 95% CI 0.77-1.52), but not reaching statistical significance. CPA was not associated with MetS.

LPA showed protective effect of MetS, but OPA showed marginal negative effect on MetS. This difference needs to be considered when recommendations for prevention of MetS are developed.

## Recent Publications

1. Andreas Holtermann et al (2013) Does the benefit on survival from leisure time physical activity depend on physical activity at work? A prospective Cohort Study. PLoS ONE 8(1): e54548.
2. Toru Honda et al (2015) Leisure-time, occupational, and commuting physical activity and risk of type 2 diabetes in Japanese workers: a cohort study. BMC Public health 15:1004.
3. Jui-Hua Huang et al (2017) Relationship between different types of physical activity and metabolic syndrome among Taiwanese workers. Scientific Reports 7:13735.
4. A Holtermann et al (2012) The health paradox of occupational and leisure-time physical activity. Br J Sports Med 46:291-295.
5. Els Clays et al (2012) Occupational and leisure-time physical activity in contrasting relation to ambulatory blood pressure. BMC Public health 12:1002.



## Biography

Si Nae Kang is medical doctor specialized in Family Medicine, currently has been research fellow in Department of Family Medicine, Seoul National University Hospital, with experience in research, evaluation, teaching . She has special interest in Health promotion and Public health and conducted research on Korean smokers last year. She has developed pilot project of visiting care system for elderly, that is operated successfully now.

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