

## **SUN-417: Long Working Hours Are Associated with Hypothyroidism: A Cross-Sectional Study with Population-Representative Data**

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**Background:** Studies have highlighted the adverse effects of long working hours on workers' health; however, the association of long working hours with thyroid function has not been studied. This study aimed to assess long working hours as a risk factor for thyroid dysfunction.

**Methods:** This cross-sectional study was based on data obtained from the Korea National Health and Nutrition Examination Survey conducted from 2013 to 2015. A total of 2,160 adults who worked 36-83 hours per week were included. Thyroid function was defined based on the population thyroid-stimulating hormone reference ranges, after excluding individuals with positive results for thyroid peroxidase antibody. The association between working hours and thyroid function was confirmed via multinomial logistic regression.

**Results:** Hypothyroidism was more prevalent among those with longer working hours (3.5% vs. 1.4% for 53-83 and 36-42 working hours per week, respectively). Individuals who worked longer hours had an increased odds for hypothyroidism (odds ratio 1.46, 95% confidence interval 1.12–1.90, per 10 hour increase in working hours per week), after adjustment for age, sex, body mass index, urine iodine concentration, smoking status, shift work, and socioeconomic characteristics such as occupation, income level, and educational attainment. The association between working hours and hypothyroidism was consistent in various subgroups stratified by sex or socioeconomic characteristics.

**Conclusions:** To our knowledge, this study is the first to show that long working hours are associated with hypothyroidism. Our findings suggest that appropriate monitoring and treatment of hypothyroidism are necessary among individuals who work long hours.