



Body Mass Index and Risk of Head and Neck Cancer

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Background. Most of the previous large-scale studies investigating body mass index (BMI) and head and neck cancer (HNC) risk have focused on European-origin populations. The aim of our study was to investigate potential associations between BMI and HNC risk in the East Asian population. **Methods.** We conducted a multicenter case-control study in East Asia including 921 cases and 806 controls. We estimated the adjusted odds ratios (ORs) and 95% confidence intervals for HNC risks by using logistic regression, adjusted for age, ethnicity, education, center, daily cigarettes per day, cigarette years, alcohol drinks per week, alcohol years, betel quid chewed per day and betel years. **Results.** Compared to normal body mass index ($18.5 < \text{BMI} < 25 \text{ kg/m}^2$), low BMI ($\text{BMI} < 18.5 \text{ kg/m}^2$) was associated with higher HNC risk ($\text{OR} = 2.71$, $95\% \text{ CI} = 1.40-5.26$). Additionally, high BMI ($\text{BMI} > 30 \text{ kg/m}^2$) was associated with lower HNC risk ($\text{OR} = 0.3$, $95\% \text{ CI} = 0.16-0.57$). Being underweight at age 20 was also associated with an increased risk of HNC ($\text{OR} = 1.51$, $95\% \text{ CI} = 1.02-2.24$). Also BMI decreasing over an individual's lifetime (BMI decrease of $\geq 10\%$) was associated with higher HNC risk. There was an 8% reduction in risk of HNC with every 5 kg/m^2 increase in BMI at interview. For every 5 kg/m^2 increase in BMI at age 20, there was a reduction in HNC risk. **Conclusion.** Low BMI was associated with increased HNC risk and high BMI was associated with reduced HNC risk, which is consistent with other studies in other regions. The low BMI – higher HNC risk association held even for BMI at age 20. Future studies including

anthropometric measures such as waist-to-hip circumference may be of interest for HNC risk in an Asian population.