

博士論文 (要約)

Effect of body-mass index on the risk of gastric cancer among a  
Japanese population

(日本人集団におけるボディマス指数の胃がんリスクへの  
影響に関する研究)

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## 論文の内容の要旨

論文題目 Effect of body-mass index on the risk of gastric cancer among a Japanese population

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**Objective:** Body fatness and weight gain are considered to be probable causes of gastric cancer, specifically in the cardia region. However, limited evidence is available from Asia, particularly among the Japanese population, where the burden of gastric cancer is high. The objective of this study was to determine the associations between body-mass index (BMI) and the risk of overall gastric cancer, proximal gastric cancer, and distal gastric cancer among a Japanese population.

**Methods:** From the two established prospective cohorts from the Japan Public Health Center-based Prospective Study (JPHC Study), a total of 92,056 Japanese men (44,122) and women (47,934) aged 40 to 69 years at the baseline of the cohorts were included in the analyses. Hazards ratios (HR) and 95% confidence intervals (CI) were calculated using the Cox proportional hazards model using attained age as a timescale to estimate the risk for overall gastric cancer by baseline self-reported BMI categories, then differentiated by gastric cancer anatomical subsites. We further investigated the

association between BMI and risk of gastric cancer, taking *Helicobacter pylori* (*H.pylori*) infection and atrophic gastritis status into account.

**Results:** During an average of 18.0 years of follow-up, 2,860 gastric cancer cases (2,047 men, 813 women), 307 proximal gastric cancer cases (244 men, 63 women), and 1,967 distal gastric cancer cases (1,405 men, 562 women) were newly diagnosed. Among men, baseline self-reported BMI baseline BMI  $\geq 27$  kg/m<sup>2</sup> increased the risk of overall gastric cancer (HR 1.23, 95% CI 1.00 – 1.53). No statistically significant association was observed for women. A U-shaped increase in the risk was observed for proximal gastric cancer for both men and women, although the results were not statistically significant. A statistically significant association was observed between the risk of proximal gastric cancer and BMI  $\geq 27$  kg/m<sup>2</sup> among those who were atrophic gastritis positive (HR 4.84, 95% CI 1.13 – 20.77), *H.pylori* antibody seropositive (HR 6.38, 95% CI 1.19 – 33.32), and those who tested positive to either or both atrophic gastritis and *H.pylori* antibody (HR 4.57, 95% CI 1.07 – 19.49).

**Conclusion:** While *H.pylori* infection remains to be the largest risk contributor for gastric cancer risk among the Japanese population, this prospective study suggests being overweight may be associated with an increased risk of gastric cancer in Japan.

**Keywords:** Gastric cancer, body-mass index, *Helicobacter pylori*, atrophic gastritis, prospective cohort study