

# Genetic predictors of esophageal cancer identified

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Researchers have identified 11 genotypes that may increase esophageal cancer risk, according to research published in the November issue of *Cancer Prevention Research*, a journal of the American Association for Cancer Research.

"We observed a significantly increased risk of esophageal cancer with increasing numbers of risk genotypes," said Yuanqing Ye, Ph.D., an instructor in the Department of Epidemiology at the University of Texas M. D. Anderson Cancer Center.

Major risk factors for esophageal cancer include obesity, smoking and gastroesophageal reflux disease. Compared to the high prevalence of these risk factors in the general population, the incidence rate of esophageal cancer is low, indicating that a small percentage of people are genetically predisposed to develop esophageal cancer.

Researchers at the University of Texas M. D. Anderson Cancer Center identified 11 single-nucleotide polymorphisms (SNPs) in microRNA-related genes that showed at least a borderline significant association with esophageal cancer. A person can have one or more of these SNPs in their genetic makeup, putting him or her into low-risk, medium-risk and high-risk groups. The study showed that each unfavorable genotype was associated with an increased cancer risk. Individuals with more than four unfavorable genotypes were more than three times as likely to develop esophageal cancer.

"Our ultimate goal is to construct a quantitative cancer risk prediction model based on an individual's epidemiological profile, environment exposure and genetic makeup," said Xifeng Wu, M.D., Ph.D., a professor in the Department of Epidemiology at the University of Texas M. D. Anderson Cancer Center and lead author of the study. "This risk prediction model can evaluate each person's relative risk and absolute risk of developing esophageal cancer within a certain time period."

Esophageal cancer is the fastest growing cancer in the United States with significantly increasing rates of occurrence. The majority of esophageal cancer patients are diagnosed at an advanced stage with poor prognosis. Understanding what places a person at high risk for esophageal cancer may have clinical applications to guide cancer screening, intensive monitoring, and cancer prevention.

"Considering the dramatic increase in incidence, difficulty of early diagnosis, the poor survival rate for esophageal cancer, and the limited knowledge of the natural history of this tumor, we need a greater understanding of the etiology of esophageal cancer for improvement of diagnosis and hopefully a better prognosis," said Wu.

Source: American Association for Cancer Research

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