

# Artificial light exposure at night and risk of nasopharyngeal carcinoma in a high-incidence area of China

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## Abstract

**Objectives:**We aimed to investigate whether artificial light at night (ALN) are associated with Nasopharyngeal carcinoma (NPC) risk in Fujian province of China. **Design:**We use spatial epidemiology to understand the spatiotemporal distribution characteristics of nasopharyngeal carcinoma hospitalization rates, and use least squares and geographic detection models to understand the impact of nighttime light intensity on nasopharyngeal carcinoma hospitalization rates. **Participants:**Inpatients with NPC in 2019 were determined according to ICD-10 code and the hospitalization records of Fujian province were obtained from basic medical insurance for urban and rural residents in Fujian Province, which was provided by Fujian Medical Security Center. **Variables:** The main variable calculated in this study is the crude hospitalization rate **Results:**The NPC hospitalization rate are spatially positively correlated. The results of Ordinary Least Square (OLS) model analysis showed that ALN was positively correlated with the hospitalization rate of NPC. The R<sup>2</sup> in the geographic weighted regression model(GWR) is greater than the OLS model, which indicates that the explanation degree of the GWR model variables on the hospitalization rate of NPC is significantly better than OLS model. **Conclusions:**ALN level was positively correlated with the hospitalization rate of nasopharyngeal carcinoma, which provide valuable information for the prevention and treatment strategy of NPC in Fujian province.

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