

**【Secondary Publication】**

**Relationships between Lifestyle, Living Environments, and Incidence of Hypertension in Japan (in Men): Based on Participant's Data from the Nationwide Medical Check-up  
— Secondary Publication of an Original Article Published in PLOS ONE**

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**Abstract**

This study aims to investigate factors that contribute to the differences in incidence of hypertension between different regions in Japan, by accounting for not only individual lifestyles, but also their living environments. The target participants of this survey were individuals who received medical treatment for hypertension, as well as hypertension patients who have not received any treatment. The objective variable for analysis was the incidence of hypertension as data aggregated per prefecture. We used data (in men) including obesity, salt intake, vegetable intake, habitual alcohol consumption, habitual smoking, and number of steps walked per day. The variables within living environment included number of rail stations, standard/light vehicle usage, and slope of habitable land. In addition, we analyzed data for the variables related to medical environment including, participation rate in medical check-ups and number of hospitals. We performed multiple stepwise regression analyses to elucidate the correlation of these variables by using hypertension incidence as the objective variable. Hypertension incidence showed a significant negative correlation with walking and medical check-ups, and a significant positive correlation with light-vehicle usage and slope. Between the number of steps and variables related to the living environment, number of rail stations showed a significant positive correlation, while, standard- and light-vehicle usage showed significant negative correlation. Moreover, with stepwise multiple regression analysis, walking showed the strongest effect. The differences in daily walking based on living environment were associated with the disparities in the hypertension incidence in Japan.

**Key words:** hypertension, physical activity, walking, environment, transportation, steepness of land

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