

# Preventive epidemiology as a branch of epidemiology



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## Key point

Preventive epidemiology is a branch of epidemiology that differs from other branches in terms of focus, goals, and studying population. In other branches of epidemiology, the focus is on patients, while in preventive epidemiology, it is on healthy individuals. In other words, Preventive epidemiology aims to prevent diseases and promote health through interventions, while other branches study the distribution, determinants, and causes of health problems to control them.

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## Introduction

Preventive epidemiology is a branch of epidemiology that aims to prevent diseases and promote health through various interventions like vaccination, education, and lifestyle changes (1). In simpler terms, prevention refers to actions taken to eradicate, eliminate, or minimize the impact of disease and disability and primary, secondary, and tertiary prevention levels define the concept of prevention (2). Prevention studies in epidemiology can help pinpoint potential disease risks and guide strategies to prevent them (3). For instance, evaluating diet is a critical aspect of preventive epidemiology, so that various techniques, such as food frequency questionnaires and food composition databases, can be utilized to assess dietary intake for preventing diseases (4).

## What is the difference between preventive epidemiology and other branches?

Preventive epidemiology aims to prevent diseases and promote health through various interventions and strategies (2). Its target population is healthy individuals, and its goal is to prevent diseases from ever occurring (5). Preventive epidemiology typically involves activities that limit risk exposure or increase the immunity of individuals at risk to prevent a disease from progressing in a susceptible individual to subclinical disease (5). Examples of preventive epidemiology interventions include childhood vaccination programs, water fluoridation, anti-smoking programs, and education about safe sex (6).

Other epidemiology branches study health-related problems to prevent and control them (7). Other epidemiology branches specifically focus on understanding the distribution, determinants, and causes of diseases. This involves gathering information through questionnaires, surveys, and data processing to identify risk factors and circumstances that lead to specific diseases (5,8). Examples of other branches of epidemiology studies include community trials of fluoride supplementation, the Framingham Heart study, and polio vaccine trials (7). In contrast, preventive epidemiology aims to prevent diseases and promote health through various interventions and strategies. The target population of other epidemiology branches is individuals with a disease, while the preventive branch is healthy individuals (5,7,8).

## Authors' contribution

**Conceptualization:** Soleyman Alivand.

**Data curation:** Hossein Mardanparvar and Soleyman Alivand.

**Funding acquisition:** All authors.

**Investigation:** Mahdi Pourjafari and Soleyman Alivand.

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**Validation:** Sara Dehghan.

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**Writing—original draft:** Sara Dehghan and Soleyman Alivand.

**Writing—review & editing:** Hossein Mardanparvar and Mahdi Pourjafari.

## Conflicts of interest

The authors declare that they have no competing interests.

**Ethical issues**

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**References**

1. Sun LM, Kuo HT, Jeng LB, Lin CL, Liang JA, Kao CH. Hypertension and subsequent genitourinary and gynecologic cancers risk a population-based cohort study. *Medicine (Baltimore)*. 2015;94:e753. doi: 10.1097/md.0000000000000753.
2. Gledović Z. Epidemiology, Prevention. In: Kirch W, editor. *Encyclopedia of Public Health*. Dordrecht: Springer Netherlands; 2008. p. 354-6.
3. Tanaka K, Miyake Y, Fukushima W, Sasaki S, Kiyohara C, Tsuboi Y, et al. Occupational risk factors for Parkinson's disease: a case-control study in Japan. *BMC Neurol*. 2011;11:83. doi: 10.1186/1471-2377-11-83.
4. Fujiwara A, Omura Y, Oono F, Sugimoto M, Sasaki S, Takimoto H. A Scoping Review of Epidemiological Studies on Intake of Sugars in Geographically Dispersed Asian Countries: Comparison of Dietary Assessment Methodology. *Adv Nutr*. 2022;13:1947-73. doi: 10.1093/advances/nmac061.
5. Straif-Bourgeois S, Ratard R, Kretzschmar M. Infectious disease epidemiology. *Handbook Epidemiol*. 2014:2041-119. doi: 10.1007/978-0-387-09834-0\_34.
6. Frérot M, Lefebvre A, Aho S, Callier P, Astruc K, Aho Glélé LS. What is epidemiology? Changing definitions of epidemiology 1978-2017. *PLoS One*. 2018;13:e0208442. doi: 10.1371/journal.pone.0208442.
7. Eybpoosh S, Haghdoost AA, Mostafavi E, Bahrampour A, Azadmanesh K, Zolala F. Molecular epidemiology of infectious diseases. *Electron Physician*. 2017;9:5149-58. doi: 10.19082/5149.
8. Pearce N. Traditional epidemiology, modern epidemiology, and public health. *Am J Public Health*. 1996;86:678-83. doi: 10.2105/ajph.86.5.678.