

Article II

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Attributable fractions: fundamental concepts and their visualization

Geir Egil Eide and Ivar Heuch

Abstract

A general methodology for visualizing attributable fractions in epidemiology is described. The methodology applies to the multifactorial exposure situation and embraces various types of attributable fractions including adjusted, sequential and average attributable fractions. The concept of the scaled Venn diagram plays a central role, illustrating total disease risk and excess disease risk attributable to the exposures as areas in a unit square. This forms the ground for making simple pie charts of attributable fractions summing to 1 (or 100%). The potential applications extend from cohort and cross-sectional data to data from case-control studies. The methodology is illustrated by theoretical as well as empirical examples including the risk of motor fatalities attributable to driver's blood alcohol concentration and age, and the prevalence of chronic cough attributable to smoking habits, occupational exposure to dust or gas, and residence. A total of 40 figures illustrate the methodology.