Abstract

Is relationship between serum cholesterol and risk of premature death from coronary heart disease continuous and graded? Findings in 356,222 primary screenees of the Multiple Risk Factor Intervention Trial (MRFIT).

Stamler J, Wentworth D, Neaton JD.

BACKGROUND: The 356,222 men aged 35 to 57 years, who were free of a history of hospitalization for myocardial infarction, screened by the Multiple Risk Factor Intervention Trial (MRFIT) in its recruitment effort, constitute the largest cohort with standardized serum cholesterol measurements and long-term mortality follow-up.

RESULTS: For each five-year age group, the relationship between serum cholesterol and coronary heart disease (CHD) death rate was continuous, graded, and strong. For the entire group aged 35 to 57 years at entry, the age-adjusted risks of CHD death in cholesterol quintiles 2 through 5 (182 to 202, 203 to 220, 221 to 244, and greater than or equal to 245 mg/dL [4.71 to 5.22, 5.25 to 5.69, 5.72 to 6.31, and greater than or equal to 6.34 mmol/L]) relative to the lowest quintile were 1.29, 1.73, 2.21, and 3.42. Of all CHD deaths, 46% were estimated to be excess deaths attributable to serum cholesterol levels 180 mg/dL or greater (greater than or equal to 4.65 mmol/L), with almost half the excess deaths in serum cholesterol quintiles 2 through 4. The pattern of a continuous, graded, strong relationship between serum cholesterol and six-year age-adjusted CHD death rate prevailed for nonhypertensive nonsmokers, nonhypertensive smokers, hypertensive nonsmokers, and hypertensive smokers.

CONCLUSION: These data of high precision show that the relationship between serum cholesterol and CHD is not a threshold one, with increased risk confined to the two highest quintiles, but rather is a continuously graded one that powerfully affects risk for the great majority of middle-aged American men.

PMID: 3773199