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Isolated low HDL cholesterol as a risk factor for coronary heart disease mortality. A 21-year follow-up of 8000 men.

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Source

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Abstract

For the purpose of screening individuals at high risk for coronary heart disease (CHD), serum total cholesterol (TC) of 5.2 mmol/L, has been set as a value dividing "desirable" from intermediate high or elevated levels, and HDL cholesterol (HDL-C) < 0.9 mmol/L has been labeled as abnormally low, implying high CHD risk. It has been conjectured that low HDL-C poses no risk in the absence of elevated LDL cholesterol or TC. To assess the risk of CHD-free men with "isolated low HDL-C," ie, abnormally low HDL-C with desirable TC, we examined the CHD and all-cause mortality of some 8000 Israeli men aged 42 years and older during 1965 through 1986. Men with isolated low HDL-C represented one sixth of the cohort. CHD mortality among these men was 36% higher (age adjusted) than in counterparts with desirable TC, of which > 0.9 mmol/L was contained in the high-density fraction. In men with TC > 5.2 mmol/L, abnormally low HDL-C was associated with a virtually identical CHD mortality risk ratio, 38%. These findings persisted after adjustment for multiple CHD risk factors. The excess CHD risk associated with isolated low HDL-C appeared particularly increased in men with diabetes mellitus, whose death rate was 65% higher than in diabetics with HDL-C > 0.9 mmol/L. A second subgroup result was consistent with equal CHD mortality risk among men in the "desirable" TC range, with or without low HDL-C, if systolic blood pressure was > 160 mm Hg. These are post hoc findings, and hypotheses arising from these observations would require independent examination. Total mortality was not increased in men with isolated low HDL-C compared with men who had HDL-C < 0.9 mmol/L and TC > 5.2 mmol/L at baseline. These results indicate that an increased risk of CHD death is associated with abnormally low HDL-C for cholesterol ranges both below and above 5.2 mmol/L. For the individual, therefore, the risk is multiplied by the same amount regardless of TC. Quitting smoking, increasing physical activity, and decreasing body weight would all contribute to raise HDL-C in individuals of most or all age groups. When examined from a community perspective, the results are consistent with a relatively low

population-attributable fraction among CHD-free men. This would tend to support the recommended practice of considering a TC level of 5.2 mmol/L (200 mg/dL) as a threshold for further evaluation in screened individuals without manifest CHD.

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