

# Higher serum cholesterol and decreased Parkinson's disease risk: A statin-free cohort study



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## Biography

Chava Peretz is a researcher in the Department of Epidemiology and Preventive Medicine at TAU's School of Public Health. She received her bachelor's degree in Mathematics and Statistics from Tel Aviv University (1976) and a Ph.D. in Occupational and Environmental Health from the Institute for Risk Assessment Sciences at Utrecht University in The Netherlands (2003). She has completed her postdoc in the Department of Occupational and Environmental Health at Washington University, Seattle, USA. For more than 15 years she cooperates with the department of neurology at Tel Aviv medical center doing studies in neuro-epidemiology in general and specifically in the epidemiology of Parkinson's disease. She also does studies in the area of environmental epidemiology. She teaches courses on Environmental Epidemiology, Neuro-Epidemiology and Statistics; and chairs the Ph.D. students' forum. She published more than 90 articles and supervised more than 30 Master and PhD students.



## Abstract

**Background:** Higher levels of serum cholesterol are well established risk factors for coronary artery disease and stroke. The role of serum cholesterol in neurodegeneration is not clear. **Objective:** We evaluated the association between serum cholesterol levels over time and the risk of Parkinson's disease (PD) among statin-free individuals. **Methods:** A population-based cohort study of 261,638 statin-free individuals (aged 40-79 years at their first serum cholesterol test, 42.7% men), with repeated measures of total, low, and high-density lipoprotein cholesterol was performed from 1999 to 2012. Individuals were followed from their first cholesterol test until PD incidence, death, or end of study. The PD incidence was assessed using a validated antiparkinsonian-drug tracing approach. Cox models stratified by sex and age with time-dependent cholesterol variables were applied to estimate PD hazard ratios. **Results:** A total of 764 (3.3% patients aged 65 + years) incident PD cases were detected during a mean followup of 7.9 ( $\pm 3.6$ ) years. Among men, the middle and upper tertiles of total and low-density lipoprotein cholesterol compared to the lowest were significantly associated with a lower PD risk. Age-pooled hazard ratios (95% confidence interval) for middle and upper tertiles were 0.82 (0.66-1.01) and 0.71 (0.55-0.93), respectively, for total cholesterol, and 0.80 (0.65-0.98) and 0.72 (0.54-0.95) respectively, for low-density lipoprotein cholesterol. Among women, the association between total and low-density lipoprotein cholesterol levels with PD risk was not significant. Null results were found for both sexes for high-density lipoprotein cholesterol. **Conclusions:** Higher levels of total and low-density lipoprotein cholesterol among men over time indicated a decreased PD risk. The potential role of cholesterol in disease protection warrants further investigation. © 2018 International Parkinson and Movement Disorder Society.

## Publications

1. Validation of the Hebrew Version of the Unified Dyskinesia Rating Scale
2. Anemia in men and increased Parkinson's disease risk: A population-based large scale cohort study
3. The Modifying Effect of Age on Survival in Parkinson's Disease: A Population-Based Cohort Study
4. Higher serum cholesterol and decreased Parkinson's disease risk: A statin-free cohort study
5. Ambient temperature and age-related notified Campylobacter infection in Israel: A 12-year time series study

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