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# Risk of cognitive decline reduced for people 85 and older with high cholesterol

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People aged 85 and older whose total cholesterol had increased from their levels at midlife had a reduced risk for marked cognitive decline, compared with those a decade younger whose choles-terol was similarly elevated, Mount Sinai researchers report in a new study.

The results of the study will be available online by *Alzheimer's & Dementia: The Journal of the Alzheimer's Association* as an article in press corrected proof on Monday, March 5, at 10 a.m.

The researchers found that people aged 85-94 with good cognitive function whose total choles-terol increased from midlife had a 32 percent reduced risk for marked cognitive decline over the next ten years, compared with people aged 75-84, who had a 50 percent increased risk.

The researchers said that the results did not suggest that those 85 and older should increase their cholesterol for better cognitive health, but rather that those in that age cohort with good cogni-tion and high cholesterol probably also had some protective factor that someday could be identi-fied and studied.

The research team evaluated the association of five total cholesterol values with a substantial de-cline in cognitive function from normal function, called marked cognitive decline. The five values were midlife (average age 40) total cholesterol, late-life (average age 77) total cholesterol, mean total cholesterol since midlife, linear change since

midlife (in other words, whether it was in-creasing or decreasing), and quadratic change since midlife (whether the linear change was accel-erating or decelerating). Data were obtained from the original Framingham Heart Study, a long-term, ongoing cardiovascular cohort study on residents of Framingham, Massachusetts. That study began in 1948 with 5,209 adult subjects and is now on its third generation of participants

The team assessed whether marked cognitive decline was associated with the five cholesterol values, and whether the associations with those values changed depending on the age of cogni-tive assessment. They found several cholesterol values including high last cholesterol, increasing levels, and decreasing acceleration were predictors associated with increased risk of a marked cognitive decline, that were associated with increased risk of a marked cognitive decline. How-ever, as the outcome age increased, some associations were reduced, or even reversed. Further-more, in the subgroup of cognitively healthy 85-94 year olds, a high midlife cholesterol level was associated with a reduced risk for marked cognitive decline. This contrasts with samples in other studies that have focused on elderly subjects primarily below age 75, where midlife cholesterol was associated with increased risk of cognitive decline.

"Our results have important implications for researching genetic and other factors associated with successful cognitive aging," said the study's first author, Jeremy Silverman, PhD, Professor of Psychiatry, Icahn School of Medicine at Mount Sinai. "The data are consistent with our protect-ed survivor model - among individuals who survive to very old age with intact cognition, those with high risk factor levels are more likely to possess protective factors than those with lower risk factor levels. Long-lived individuals who are cognitively intact despite high risk should be tar-geted in research studies seeking protective factors, which could help identify future drugs and therapies to treat dementia and

Alzheimer's disease."

Dr. Silverman notes that these results do not imply that those 85 and older should increase their cholesterol. His research team will next study other risk factors for cognitive decline, including body mass index and blood pressure..

"We don't think high cholesterol is good for cognition at 85, but its presence might help us iden-tify those who are less affected by it. We hope to identify genes or other protective factors for cogitive decline by focusing on cognitively healthy very old people who are more likely to carry protective factors."

Provided by The Mount Sinai Hospital

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