New insights into the effect of aging on cardiovascular disease

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Aging adults are more likely to have—and die from—cardiovascular disease than their younger counterparts. New basic science research finds reason to link biological aging to the development of narrowed, hardened arteries, independent of other risk factors like high cholesterol.

Senior author Daniel Goldstein, M.D., of Michigan Medicine's Frankel Cardiovascular Center, says his team's new *Circulation Research* paper is the first to dissect the biological effect of aging from hyperlipidemia on atherogenesis.

"We identify a novel pathway within the aorta by which mitochondrial dysfunction and the pro inflammatory cytokine IL-6 co-exist in a positive feedback loop with aging to promote atherosclerosis," Goldstein says of the team's work using mouse models of cardiovascular disease and aging.

The researchers report aged mice had more severe atherogenesis than young mice, even when both groups had similar cholesterol levels for the same time period.

Future research, then, might investigate therapies to mitigate against the effects of vascular aging before high cholesterol becomes a problem, with the goal of reducing the development of atherogenesis in the first place, Goldstein and colleagues say.

More information: Daniel J Tyrrell et al, Age-Associated Mitochondrial Dysfunction Accelerates Atherogenesis, *Circulation Research* (2019). DOI: 10.1161/CIRCRESAHA.119.315644

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