

Findings Identify Age-Related Cause of Arterial Dysfunction



Cardiovascular disease continues to remain the leading cause of death worldwide. The world's elderly population is expected to double by 2050 and it is now becoming increasingly important to understand how ageing affects the body.

Researchers from the University of Missouri have identified an age-related cause of arterial dysfunction that could lead to the development of treatments for some forms of vascular disease. The study, "Depressed Perivascular Sensory Innervation of Mouse Mesenteric Arteries with Advanced Age," is published in *The Journal of Physiology*.

"Ageing affects everyone and causes changes throughout our bodies," said Erika Boerman, PhD, a post-doctoral fellow in the Department of Medical Pharmacology and Physiology at the MU School of Medicine and lead author of the study. "The purpose of our study was to understand how blood vessels are affected by this process. We found that older arteries had a significantly lower number of sensory nerves in the tissues surrounding them and they were less sensitive to an important neurotransmitter responsible for dilation."

The study focused on mesenteric arteries of mice that were 4 months and 24 months old (which correspond to human ages of early 20s and mid-60s respectively). The diameter of the blood vessels without any stimulation of both younger and older mice was the same. But when stimulated to induce dilation, the differences between the two groups were quite visible.

The younger arteries dilated but when the stimulation was performed on the arteries of older mice, the vessels did not dilate. The investigators noted a 30 percent decrease in the amount of sensory nerves surrounding the older arteries as compared to the younger arteries. They also found that when the older mesenteric arteries were exposed to defined amounts of the neurotransmitter calcitonin gene-related peptide (CGRP), the arteries' ability to dilate declined significantly.

The researchers thus conclude that poor neurotransmitter function and reduced presence of sensory nerves surrounding older vessels leads to arterial dysfunction. This discovery could help identify why this happens and how it could be prevented. Further research needs to be conducted as to why ageing affects sensory nerve distribution and neurotransmitter performance and new studies should be conducted that could lead to the treatment of health issues such as stroke and cardiovascular disease.

Source: [University of Missouri Health](#)

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