

Immune cells identified as the culprit linking hypertension and dementia

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Hypertension is a leading risk factor for dementia and other disorders associated with cognitive decline. Blood flow to the brain is tightly controlled by several mechanisms that malfunction when blood pressure is abnormally high. Better understanding of how these mechanisms become disrupted in individuals with hypertension may help identify preventative therapies to reduce their risk of developing dementia.

This week in the *JCI*, a team led by Costantino Iadecola at Weill Cornell Medical College found that hypertension activates immune cells in the brain called perivascular macrophages, leading to increased oxidative stress in the brain's blood vessels that is linked to dementia.

They determined that when angiotensin II, a hormone linked to [high blood pressure](#), activates the macrophages, it causes increases in [oxidative stress](#) that are linked to disruptions in blood flow as well as cognitive dysfunction.

Selectively removing these immune cells from the brain reduced damage to blood vessels and reduced signs of [cognitive decline](#) in mouse models of hypertension.

These findings suggest that targeting activators of perivascular macrophages is a potential approach for preventing dementia in individuals with high blood pressure.

More information: Giuseppe Faraco et al, Perivascular macrophages mediate the neurovascular and cognitive dysfunction associated with hypertension, *Journal of Clinical Investigation* (2016). [DOI: 10.1172/JCI86950](https://doi.org/10.1172/JCI86950)

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