Dementia affects almost 50 million adults worldwide, and is a major cause of death and disability. Vascular risk factors, such as hypertension and high-dietary salt, have gained importance since up to 50% of clinically diagnosed Alzheimer disease have a mixed pathology at autopsy including cerebrovascular lesions. Thus, elucidating novel mechanisms by which hypertension negatively impacts neurovascular and cognitive function is a necessary step to develop new approaches to protect the brain from hypertension. We have identified two distinct immune mechanisms, involving brain resident perivascular macrophages and circulating IL-17, contributing to cognitive impairment in mouse models of hypertension.