



# Vascular burden as a substrate for higher-level gait disorders in older adults. A review of brain mapping literature

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Résumé en anglais	<p>Vascular brain burden, evaluated as white matter hyperintensities (WMH), may explain in part the higher-level gait disorders found in older adults. However, the magnitude and location of WMH as a determinant of higher-level gait disorders remain unknown. The purpose of this review was to determine if the magnitude and distribution of WMH would be associated with the presence of gait disorders in older adults. Medline was searched using the following keywords: "gait", "gait disorders, neurologic", "walking", "cerebrovascular disorders", "leukoaraiosis", "leukoencephalopathies" and "aged". Additional references were reviewed from the bibliographies, and from citation searches on key articles. Observational studies, without language restriction, published between 1995-2011 and exploring simultaneously WMH on MRI and gait performance were selected. Twenty-one studies met the selection criteria. The number of participants per study ranged from 14 to 3301 (35% to 75% female). The total WMH burden was associated with gait disorders in all studies. The largest WMH fractions associated with gait disorders were found in the frontal lobe, the centrum semiovale, the posterior limb of internal capsule, the genu and the splenium of corpus callosum. Gait velocity, stride length and step width were the gait parameters most commonly affected in the presence of WMH. The brain mapping literature supports the hypothesis that a high WMH burden is associated with gait disorders in the course of aging. This could give rise to new strategies for the prevention of higher-level gait disorders and falls in the elderly based on the management of cerebrovascular disease.</p>

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### Liens

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