

# The extended scope of neuroimaging and prospects in brain atrophy mitigation: a systematic review

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## Abstract

Brain atrophy is a condition associated with a reduction of brain volume. It is a common manifestation of aging even though it occurs in some childhood conditions and carried forward to pre-senile middle age.

There are several causes of brain atrophy resulting in different patterns of brain volume loss which spans from focal, global, central, cortical, and hemiatrophy. These conditions are commonly associated with other neurodegenerative changes that lead to different dysfunctions.

Neuroimaging is critical for the diagnosis, evaluation of lesions and quantification of the atrophy. However, radiological quantification of brain volume is done by both automated and manual methods to study brains basing a wide variation of cranial sizes and shapes. A multidisciplinary approach is the future of brain atrophy management. An extended scope of knowledge beyond image interpretation is inevitable.

## Keywords

BrainAtrophy; Neuro-Imaging; Brain volume; Brain mapping and neurodegenerative changes