



## Brain development using magnetic resonance imaging in healthy children

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Brain development continues throughout childhood and adolescence. It has been revealed that human brain development is structurally and functionally a non-linear process. In this review, we reviewed the studies of brain development in healthy children, from the viewpoint of structure and perfusion of gray matter and white matter. The trajectory of gray matter volume with age shows increase then decrease, and the age at peak volume is different among brain regions in the first and second decades of age. On the other hand, white matter volume increases mostly linearly during those periods. As for the fractional anisotropy, most regions shows exponential trajectory with age during those periods. In addition, the correlation between cerebral blood flow and age showed similar tendency of that of the gray matter volume. In addition, there are gender differences of brain structure and brain perfusion in regions such as the precuneus. Still, there are number of uninvestigated important issues, and future studies are expected to solve these issues.

### References:

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