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## The role of genes and environment on brain alterations in Major Depressive Disorder: a review of twin studies.

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**Keywords:** twins, major depressive disorders, structural and functional alterations, genes, environment.

### Abstract

#### BACKGROUND

Although it has been consistently reported the important role of genetic and environmental risk factors on structural and functional alterations in Major Depressive Disorder (MDD), the mechanism and the magnitude of the interactions between specific genetic and/or environmental risk factors on brain structures in this disabling disorder are still elusive. Therefore, in the last two decades an increased interest has been devoted to neuroimaging investigations on monozygotic and dizygotic twin samples mainly because their intrinsic characteristics may help to separate the effects of genetic and environmental risk factors on clinical phenotypes, including MDD.

#### METHODS

In this context, the present review summarizes results from structural and functional Magnetic Resonance Imaging studies that investigated twin samples in correlation with MDD.

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<sup>1</sup> The two authors contributed equally to this work.

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