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Petr Zach
Charles University, Czech Republic

Effect of stress on structural brain asymmetry

There is a growing body of evidence that stressful events may affect the brain not only as a whole, but also in multiple laterality aspects. The present study is aimed at discussing the effect of stress and stress hormones on structural brain asymmetry. Differences and crossroads of functional and structural asymmetry are briefly mentioned throughout the document. The first part of this study summarizes major findings in the field of structural brain asymmetries in animals and humans from the evolutionary perspective. Additionally, effect of stress on animals is discussed generally. The second part then explores asymmetrical effects of stress on structural changes of principal brain areas; amygdala, hippocampus, neocortex, diencephalon, basal forebrain and basal ganglia from the point of normal lateralization, steroids, trauma and genetic factors. At the end is presented hypothesis why stress appears to have asymmetrical effects on lateralized brain structures.

Biography

Petr Zach is an Associate Professor of Anatomy and Head of the Institute of Anatomy at the Third Faculty of Medicine, Charles University, Prague, Czech Republic. His research activities cover field of neuroanatomy, psychiatry, micro-CT of soft tissues and neuroscience.

zach.petr@post.cz

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