

# Epigenetic alterations related to early-life stressful events

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**Objective** Early stress events severely impact brain and behaviour. From a neurobiological point of view early stress influences neuroanatomical structures and is associated with a dysregulation of the hypothalamic-pituitary-adrenal axis. The objective of this article is to review the epigenetic alterations implicated in brain adaptation to early stress events. **Method** A review of empirical research of epigenetic alterations associated to early stress events was performed. **Results** Neuroanatomic and epigenetic alterations have been observed after early stress events. Epigenetics alterations include DNA methylation, histones modifications and microRNA (miRNA) expression. The most studied is largely the former, affecting genes involved in neuroendocrine, neurotransmission and neuroplasticity regulation after early stress exposition. It includes glucocorticoid receptor, FK506-binding protein 5, arginine vasopressin, oestrogen receptor alpha, 5-hydroxy-tryptamine transporter and brain-derived