# Chapter 11 Evolutionary Origins and Functions of the Stress Response System

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# Abstract

Evolution is the process in which traits such as physiological stress response systems (SRSs) are shaped by natural selection. A full understanding of any trait requires knowing its evolutionary history, how it has given a selective advantage, and the trade-offs and costs involved. Stress-related mechanisms emerged early in the history of life. Like all traits, they have costs as well as benefits. Because the stress response is so often associated with negative events, its utility has often been neglected. This chapter reviews the phylogeny and functional significance of the SRS, with a special focus on how selection has shaped the mechanisms that process environmental information to regulate the stress response, and how the stress response influences other traits such as risk-taking and sexual behavior.