

The Role of Adaptogenic Herbs in Combating Stress: A Review of Scientific Evidence

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Abstract: *Adaptogens are bioactive compounds which allow the body to cope with stress, to be on homeostasis again. Its history dates back thousands of years, when Ayurvedic and Traditional Chinese Medicine developed knowledge on adaptogenic compounds and functions, specifically on modulatory aspects of the hypothalamic-pituitary-adrenal axis and of cortisol regulatory pathways. The present review explores the history and classification of adaptogens as well as the underlying mechanisms, including hormone modulation, neurobiological pathways, and antioxidant activity. Botanical examples are Withaniasomnifera and Rhodiolarosea, as well as some non-botanical adaptogens including fungi and nutraceuticals. Preclinical and clinical evidence is presented as proof of the efficacy of the substances in diminishing stress, augmenting cognitive ability, and promoting physical endurance.*

Discussions on modern trends of formulations like teas, capsules, and functional foods in relation to practical uses regarding stress management and maintenance of psychological well-being and avoidance of burnout will be covered. Although generally safe, adaptogen risks include high dose toxicity and inter-medication interactions. Current challenges include variability in standardization of preparations and limitations in understanding long-term effects and associated molecular mechanisms. This review draws attention to the potential therapeutic role of adaptogens in modern life, provides insights into their safe and effective use, and points out areas for further work. Specific practical recommendations are given for how to select and combine adaptogens tailored to individual stress profiles, thus paving the way for their further integration into health care and wellness practice.

Keywords: Adaptogens, Stress management, HPA axis, Cognitive resilience, Herbal medicine