

# Title Review of Aging-Related Changes to the Neuroendocrine System and Implications for Older Caregivers

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## Abstract

The aging process causes multiple changes to the neuroendocrine system. In particular, it is well-established that there are changes in levels of sex hormones as adults age that can impact energy, mood, and cognition. In parallel, there is also growing evidence for age-related changes in hormones associated with the stress response, such as cortisol. To counteract these effects, some older adults undergo testosterone or estrogen replacement therapy. While aging-related changes to sex hormones have been characterized, little is known about how these changes may impact older adults experiencing chronic stress, such as older caregivers to a family member with a chronic disease. Caregivers often experience high levels of chronic stress as a result of the daily physical and emotional challenges that accompany the caregiving process. This review will examine aging-related changes to sex hormones and interactions with hormones involved in the stress response. Furthermore, the review will explore potential implications for older populations engaged in highly stressful roles, such as family caregivers. Ultimately, characterizing these changes will be a first step in developing tailored interventions to support caregivers through hormonal changes due the aging process.