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1: [J Neuroimmunol.](#) 2003 Jul;140(1-2):78-87.

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Dysregulation of the hypothalamic-pituitary-gonadal axis in experimental autoimmune encephalomyelitis and multiple sclerosis.

[Foster SC](#), [Daniels C](#), [Bourdette DN](#), [Bebo BF Jr.](#)

The Neurological Sciences Institute, Oregon Health and Science University, Beaverton, OR 97006, USA.

The ability of sex hormones to regulate cytokine production is well established, but the ability of cytokines to regulate sex hormone production has only begun to be investigated. We measured sex hormones in mice with passive experimental autoimmune encephalomyelitis (EAE) and in multiple sclerosis (MS) patients with sexual dysfunction. Abnormally low serum testosterone levels were found in male mice with EAE and in male MS patients, while serum estrogen levels in female mice with EAE were normal. An inverse relationship between cytokine and testosterone levels in male mice with EAE, coupled with an increase in serum luteinizing hormone (LH) levels, suggests that inflammatory cytokines suppress testosterone production by a direct effect on testicular Leydig cells. Gender differences in the sensitivity of the hypothalamic-pituitary-gonadal (HPG) axis to inflammation may be an important factor regulating the duration and severity of central nervous system (CNS) autoimmunity.

PMID: 12864974 [PubMed - indexed for MEDLINE]

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