



Figure 1-2. Summary of hypothalamic-pituitary-gonadal interactions in reproduction. The hypothalamus produces the neurohormone GnRH, which induces the anterior pituitary gland to produce the gonadotropic hormones FSH and LH. Gonadotropins stimulate the endocrine and gametogenic functions of the testes and ovaries. Gonadal steroid hormones prepare the reproductive tract to process gametes, influence secondary sex characteristics (pattern of hair growth, deposition of protein and fat, voice, etc.), and mediate sexual behaviors. Hormones secreted by the gonads ultimately control their own production by adjusting secretory activities of the hypothalamic-pituitary axis by "long-loop" feedback. Gonadal steroid hormone feedback can be exerted at the level of the hypothalamus and(or) anterior pituitary gland. In males feedback is negative. Steroid feedback in females is usually negative - it only transiently switches to positive with the approach of spontaneous ovulation. Inhibin acts directly on the pituitary gland to suppress secretion of FSH.