

# **Follicle Stimulating Hormone (Fsh) and Luteinizing Hormone (Lh) Encyclopedia Article**

## **Follicle Stimulating Hormone (Fsh) and Luteinizing Hormone (Lh)**

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

# Contents

<a href="#">Follicle Stimulating Hormone (Fsh) and Luteinizing Hormone (Lh) Encyclopedia Article.....</a>	<a href="#">1</a>
<a href="#">Contents.....</a>	<a href="#">2</a>
<a href="#">Follicle Stimulating Hormone (Fsh) and Luteinizing Hormone (Lh).....</a>	<a href="#">3</a>



# Follicle Stimulating Hormone (Fsh) and Luteinizing Hormone (Lh)

Luteinizing hormone (LH) and follicle stimulating hormone (FSH) are compounds that can effect the **physiology** and behavior of the organism in which they are present. More specifically, LH and FSH are gonadotrophins, because they stimulate the **gonads** in the male and ovaries in the female. The **hormones** FSH and LH are necessary for successful reproduction.

Both LH and FSH are composed of subunits of glycoprotein. One of these subunits made up of 89 **amino acids** is identical in both hormones. The other subunit that is the same length but has a different amino acid make-up in LH and FSH allows LH and FSH to recognize and bind to different receptor molecules. For LH, the receptor is located on Leydig cells and Theca cells. Leydig cells are located in the testes. LH binding to these cells stimulates the production and release of **testosterone**. The testosterone acts on the sperm-producing cells in the testes and, along with FSH, stimulates the production of **sperm**. Theca cells are located in the ovary. LH binding to them stimulates the secretion of estrogens. In females, LH is required for the continued development and activity of specialized cells in the ovary called corpora lutea. The maintenance of **pregnancy** depends on the properly-working corpora lutea.

FSH stimulates the maturation of ovarian follicles, which then release an oocyte. **Fertilization** of the oocyte commences embryonic development. A dramatic demonstration of the power of FSH is seen when the hormone is deliberately administered. "Superovulation" results in more than the usual number of oocytes, which can lead to a pregnancy resulting in multiple offspring. Recombinant FSH produced in the laboratory has been successfully used to stimulate superovulation.

Both LH and FSH are produced one region (the anterior lobe) of the pituitary gland, a pea-sized structure located at the base of the **brain**. Their production is regulated by another hormone called gonadotrophin-releasing hormone. The production of the regulatory hormone is itself under the regulatory control of many other hormones from the **hypothalamus** of the brain.

The diminished production of LH and FSH can result in malfunction of the gonads (termed hypogonadism). In males hypogonadism can be evident as a decreased sperm count. In females, the monthly reproductive cycle will stop, which is a normal part of post-menopausal life.