

**Reading Passage**

Gynecomastia is a common disease of the male breast where there is a benign glandular enlargement of that breast at some time in the male's life. It usually consists of the appearance of a flat pad of glandular tissue beneath a nipple which becomes tender at the same time. The development may be unilateral or bilateral. There is rarely a continued growth of the breast tissue; ordinarily the process is of brief duration and stops short of the production of permanent enlargement of the breast.

A great number of patients who suffer from this disease have a disturbance in the proper ratio of androgen and estrogen levels. The normal ratio of the two hormones in plasma is approximately 100:1. The etiology of gynecomastia in patients with a known documented diagnosis appears to be related to increased estrogen stimulation, decreased testosterone levels, or some alteration of the estrogens and androgen so that the androgen-estrogen ratio is altered. There are three factors that can be attributed to the cause of gynecomastia: physiological, pathological and pharmacological.

In the case of physiologic gynecomastia the disease can occur in a newborn baby, at puberty or at any time in a man's life. In the newborn, transient enlargement of the breast is due to the action of maternal and/or placental estrogens. The enlargement usually disappears within a few weeks. Adolescent gynecomastia is common during puberty with the onset at the median age of 14; in this case the breast is often asymmetrical and frequently tender. It regresses so that by the age of 20 only a small number of men have palpable vestiges of gynecomastia in one or both breasts. Gynecomastia of aging also occurs in otherwise healthy men. Upwards of forty percent of aged men have gynecomastia, and this may be attributed to the fact that there is an increase of the conversion rate from androgens to estrogens in glandular tissue within the elderly population. Drug therapy and abnormal liver functioning have also been suggested as causes of gynecomastia in older men.

**Questions**

1. According to the passage, what are the three factors that most often are attributed to the cause of gynecomastia?
  - a. endogenous, economical and environmental
  - b. physiological, pathological and pharmacological
  - c. neurological, pathological and environmental
  - d. endogenous, economical and proprietal
  - e. neurological, pathological and pharmacological

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2. Which of the following topics would most likely be the topic of the next paragraph?
  - a. An analysis of the androgen and estrogen ratio levels in the normal and pathologically infected patients.
  - b. A discussion and analysis of the pharmacological causes of gynecomastia.
  - c. The unilateral and bilateral development of glandular tissue in men over the age of 40.
  - d. An analysis of the permanent enlargement of the male breast and how current treatment options have paved the way for medical advancements.
  - e. An overview of how increased testosterone levels help to diminish elevated estrogen levels.

When the disease is pathologic, the patient can have increased estrogen secretions, increased conversion of androgens to estrogens, or decreased androgen activity due to a failure in protein receptors. Increased estrogen secretions are found in such diseases and disorders as Hermaphroditism, Klinefelter's syndrome, congenital adrenal hyperlasia, and adrenal carcinoma or testicular tumors. In the second case some examples are adrenal carcinoma, liver disorders, malnutrition and thyroidtoxicosis. Decreased androgen activity can be found in complete testicular feminization, incomplete testicular feminization and Reifenstein's syndrome.

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