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Perspective

Androgen in Male and Female Reproductive System

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DESCRIPTION

Androgens are a hormone class. They aid in the initiation of puberty and play a role in reproductive health and body development. They influence male characteristics and reproductive activity. Androgens are sometimes referred to as "male hormones," but don't be misled by the name. Androgens are produced by both sexes, but men produce more. Androgens are produced by both men's and women's bodies, albeit in different amounts. In fact, androgens have over 200 actions in women and are present in higher concentrations than oestrogens.

They are, of course, much more prevalent in men and play an important role in male characteristics and reproductive activity. These hormones are also produced by the adrenal glands, which are located on top of each kidney.

The primary androgens found in both males and females are testosterone and androstenedione. Dihydrotestosterone (DHT), dehydroepiandrosterone (DHEA), and DHEA sulphate are some other androgens (DHEA-S). Androgens help with bone density, muscle development, puberty, red blood cell production, sexual desire and function in both genders. To measure androgen levels, doctor will use a formula known as the Free Androgen Index (FAI). FAI begins with a blood test to determine: SHBG is a protein in the blood that transports androgens (testosterone and DHT) and oestrogen. To determine the FAI or amount of androgen in the blood, provider compares total testosterone to SHBG. Androgens are produced by the female reproductive system's ovaries.

Androgen levels can fluctuate throughout the day. They naturally deteriorate with age. Hormone levels can also be influenced by a woman's age, menstrual cycle stage, or menopause status. One of the primary functions of androgens in a woman's body is to be converted into female hormones known as estrogens.

The interstitial cells of Leydig, which are found in the connective tissue surrounding the sperm-producing tubules of the testes in males, are in charge of testosterone production and secretion. The testicles in the male reproductive system produce androgen. Leydig cells are abundant in the testes of male animals that breed only seasonally, such as migratory birds and sheep, but they are greatly reduced during the nonbreeding season. LH from the pituitary gland regulates the actual secretion of androgens by these cells. Prior to puberty, only a trace amount of androgen is secreted. Puberty is associated with an increase in adrenal androgen production in both boys and girls. This "adrenarche" contributes to pubertal maturation, specifically the growth of axillary and pubic hair. Androgens are also required for the development of the male reproductive system. Males who have been to adolescence and sexual maturity require testosterone injections to develop functioning adult reproductive organs.

Androgens given to normal males tend to increase the size of the reproductive organs. Castration on mature males, on the other hand, causes the organs to shrink and stop functioning. Androgens are also required for the formation of sperm cells as well as the maintenance of sexual interest and behaviour.

Androgens have a variety of other effects on the male body. Androgens influence the growth of pubic, facial, and chest hair, as well as the regression of scalp hair, or baldness. Androgens lengthen and thicken the male vocal cords during adolescence, causing voice deepening; they also promote bone growth and increase the number and thickness of muscle fibres in the male body.

Other growth patterns stimulated by androgens include kidney weight and size, an increase in protein in bone tissue, the regeneration of red blood cells (erythrocytes), the presence of pigments in the skin, and increased activity of sweat and sebaceous (oil-producing) glands.

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Received: 10-Feb-2023, Manuscript No. ANO-23-21845; **Editor assigned:** 13-Feb-2023, PreQC No. ANO-23-21845 (PQ); **Reviewed:** 27-Feb-2023, QC No. ANO-23-21845; **Revised:** 06-Mar-2023, Manuscript No. ANO-23-21845(R); **Published:** 13-Mar-2023, DOI:10.35248/2167-0250.23.12.281

Citation: Harry T (2023) Androgen in Male and Female Reproductive System. Andrology. 12:281

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