

Disorders of Sex Hormones

Definition

- The sex hormones are a group of hormones responsible for controlling puberty, reproduction, birth and lactation.
- Sex hormone disorders, also referred to as reproductive hormone disorders, are medical conditions that affect the different glands and organs of the body responsible for the production of the sex hormones.
- It is either an overproduction or underproduction of the hormones responsible for sexual characteristics and development.

- In females – estrogen produced by ovaries.
- In males – testosterone produced by testicles.
- Testosterone are also produced by females, but if it is not in balance then women may experience symptoms including menstrual cycle irregularities, hirsutism (extra hair growth), and acne.
- When males do not produce enough testosterone they may experience a decline in libido (sex drive), erectile dysfunction, loss of muscle and loss of body hair.

Sex hormone disorders

Females

Polycystic ovarian syndrome

Hirsutism

Androgen excess

Menopause

Turner's Syndrome

Premature Ovarian Failure

Amenorrhea

Males

Hypogonadism

Erectile dysfunction

Gynecomastia

Klinefelter's Syndrome

Sex Hormone Disorders in Females

1. Polycystic Ovarian Syndrome

- This disorder is characterized by oligomenorrhea (irregular menstrual cycles) or amenorrhea (no menstrual cycles) with symptoms of hyperandrogenism (extra male like hormones) such as acne and hirsutism.
- This is the most common endocrine disorder in young females.
- Cysts may be present on the ovaries.
- **Cause:** Insulin resistance (poor response of body tissues to insulin).
- PCOS can result in obesity, infertility, diabetes, heart disease and uterine cancer.
- Exercise, weight loss and medications can be used to improve insulin sensitivity. Menstrual cycles can also be regulated with birth control pills.

2. Hirsutism

- It is growth of excessive hair in a male pattern. This would include face, chest, abdomen and back.
- This is usually due to the increased production of androgens (male hormones).
- **Treatment:** topical treatment and laser can be used to reduce hair growth.

3. Androgen excess

- Androgen excess refers to the overproduction of male hormones. This can result from ovarian or adrenal tumors.
- In women androgen excess can cause hirsutism (excessive hair growth), acne, male pattern baldness, menstrual cycle irregularities and infertility.

4. Menopause

- Menopause is defined as the cessation of menstrual cycles. This usually occurs at about the age of 50 in most women.
- For 2 to 8 years preceding this, menstrual cycles may be irregular. This is referred to as the menopausal transition or perimenopause.
- As estrogen and progesterone levels decline.
- **Symptoms:** sleep disturbances, fatigue, irritability, decreased sex drive, vaginal dryness and depression.
- Long term estrogen deficiency can result in osteoporosis (thinning of the bones).

5. Turner's Syndrome

- It is an inherited condition in which female is partly or completely missing one X chromosome.
- **Symptoms:** short neck, low-set ears, short stature, & swollen hands & feet are seen at birth. They develop menstrual periods and breasts only with hormone treatment, and are unable to have children without reproductive technology.

6. Premature Ovarian Failure (POF)

- It is also called as Premature Menopause.
- It is the loss of function of ovaries before the age of 40.

7. Amenorrhea

- It is the absence of menstrual period in women of reproductive age.

Sex Hormone Disorders in Males

1. Hypogonadism

- Hypogonadism refers to the decreased production of testosterone.
- This can result from the pituitary gland not stimulating the testicles to make testosterone or the failure of the testicles to produce adequate testosterone.
- Symptoms: decreased libido (sex drive), erectile dysfunction, decreased energy, decreased muscle mass and thinning of the bones.
- Testicle size may also decrease and sperm count decrease.
- **Treatment:** Testosterone injections, gels or patches.

2. Erectile dysfunction

- This may also be referred to as impotence.
- Erectile dysfunction is the inability to acquire or maintain an erection that is satisfactory for sexual intercourse, because of decreased blood flow to the penis.
- **Causes:** smoking, diabetes, high blood pressure, alcohol and depression, some prescription medications.

3. Gynecomastia

- The increase in breast tissue in a man is referred to as gynecomastia.
- This can occur during puberty and resolve on its own.
- **Causes:** medications, hypogonadism, thyroid disease, malnutrition, testicular cancers, adrenal cancers, liver disease or kidney disease.

4. Klinefelter's Syndrome

- It is 2 or more X Chromosomes in males i.e: XXY.
- **Symptoms:** weaker muscles, greater height, poor coordination, less body hair, breast growth, and less interest in sex, reading difficulties and problems with speech are more common.
- Symptoms are typically more severe if three or more X chromosomes are present.

Other Sex Hormone Disorders

1. Hermaphroditism

- It is the condition of having both male and female reproductive organs.
- It is referred as Intersex.

2. Delayed puberty

- It is the condition with no physical or hormonal signs at the age of puberty.

3. Precocious puberty

- It is the condition where puberty occurs at unusually early age.

4. Multiple endocrine neoplasia

- Tumours of endocrine gland.