Estimation of Estrogen and Progesterone

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Estrogen is a steroid hormone associated with the female reproductive organs and is responsible for developing female sexual characteristics. Estrogen or estradiol is the most common form of estrogen hormone for FDA-approved treatment as hormone replacement therapy (HRT) in managing symptoms associated with .menopause

The ovaries, adrenal glands, and fat tissues produce estrogen. Both female and male bodies have this hormone, but females create more .of it

Types of estrogen

Estrone

.This type of estrogen is present in the body after menopause

Estradiol

Both males and females produce estradiol, and it is the most common type of estrogen in females during their reproductive .years

Estriol

Levels of estriol rise during pregnancy, as it helps the uterus grow and prepares the body for delivery. Estriol levels peak just before .birth

Function

:Estrogen enables the following organs to function

.**Ovaries:** Estrogen helps stimulate the growth of the egg follicle

Vagina: In the vagina, estrogen maintains the thicknessTrusted

.Source of the vaginal wall and promotes lubrication

Uterus: Estrogen enhances and maintains the mucous membrane that lines the uterus. It also regulates the flow and thickness of .uterine mucus secretions

Breasts: The body uses estrogen in the formation of breast tissue. .This hormone also helps stop the flow of milk after weaning

Levels of estrogen

Normal level of estrogen: 30-400 pg/ml

:Factors that can affect estrogen levels include

pregnancy, the end of pregnancy, and breastfeeding-

puberty-

menopause-

older age-

overweight and obesity-

extreme dieting or anorexia nervosa-

strenuous exercise or training-

the use of certain medications, including steroids, ampicillin,-

estrogen-containing drugs, phenothiazines, and tetracyclines

some congenital conditions, such as Turner's syndrome-

high blood pressure-

diabetes-

primary ovarian insufficiency-

an underactive pituitary gland-

polycystic ovary syndrome (PCOS)-

tumors of the ovaries or adrenal glands-

Estrogen imbalance

:An imbalance of estrogen leads to

irregular or no menstruation-

light or heavy bleeding during menstruation-

more severe premenstrual or menopausal symptoms-

hot flashes, night sweats, or both-

noncancerous lumps in the breast and uterus-

mood changes and sleeping problems-

weight gain, mainly in the hips, thighs, and waist-

low sexual desire-

Some hereditary and other conditions can lead to high levels of :estrogen in males, which can result in

infertility-

erectile dysfunction -

larger breasts, known as gynecomastia-

Males with low estrogen levels may have excess belly fat and low .libido

:Estrogen products include

synthetic estrogen

bioidentical estrogen

Premarin, which contains estrogens from the urine of pregnant

.mares

Estrogen therapy

The treatment may consist solely of estrogen (estrogen replacement

therapy, or ERT), or it may involve a combination of estrogen and

.progestin, a synthetic form of progesterone

Hormone treatment is available as a pill, nasal spray, patch, skin

.gel, injection, vaginal cream, or ring

Food sources of estrogen

Some foods contain phytoestrogens, which are plant-based

.substances that resemble estrogen

:Foods that contain phytoestrogens include

cruciferous vegetables

soy and some foods containing soy protein

berries

seeds and grains

nuts

fruit

wine

Progesterone : Progesterone belongs to a group of steroid hormones called ‘progestogens’. Synthetic hormones that have a similar action to progesterone are called ‘progestins’. Progesterone is mainly secreted by the *corpus luteum* in the ovary during the second half of the menstrual cycle. It plays an important role in the .menstrual cycle and in maintaining the early stages of pregnancy

During the menstrual cycle, when an egg is released from the ovary at ovulation (approximately day 14), the remnants of the ovarian follicle that enclosed the developing egg form a structure called the 'corpus luteum', which literally translates as 'yellow body' due to its appearance. This releases progesterone and, to a lesser extent, oestradiol. The progesterone prepares the body for pregnancy in the event that the released egg is fertilised. If the egg is not fertilised, the *corpus luteum* breaks down, the production of .progesterone falls and a new menstrual cycle begins

If the egg is fertilised, progesterone stimulates the growth of blood vessels that supply the lining of the womb (endometrium) and stimulates glands in the endometrium to secrete nutrients that nourish the early embryo. Progesterone then prepares the tissue lining of the uterus to allow the fertilised egg to implant and helps to maintain the endometrium throughout pregnancy. During the early stages of pregnancy, progesterone is still produced by the *corpus luteum* and is essential for supporting the pregnancy and establishing the placenta. Once the placenta is established, it then takes over progesterone production at around weeks 8-12 of .'pregnancy 'luteo-placental shift

Function of progesterone: During pregnancy, progesterone plays an important role in the development of the foetus (it stimulates the growth of maternal breast tissue; prevents lactation; and strengthens the pelvic wall muscles in preparation for labour). The level of progesterone in the body steadily rises throughout .pregnancy until labour occurs and the baby is born

Although the *corpus luteum* in the ovaries is the major site of progesterone production in humans, progesterone is also produced in smaller quantities by the ovaries themselves, the adrenal .glands and, during pregnancy, the placenta

? what happens if progesterone is low

Because progesterone is so important in maintaining the early stages of pregnancy, low progesterone levels may make it hard for .you to conceive and may put you at higher risk for miscarriage

? what happens if progesterone is high

symptoms of high progesterone include fatigue, mood swings, bloating, weight gain, headaches or migraines, breast tenderness, changes in libido, and menstrual irregularities. These symptoms arise because progesterone affects various bodily systems, leading .to physical and emotional changes that can impact day-to-day life

Thank you for listening