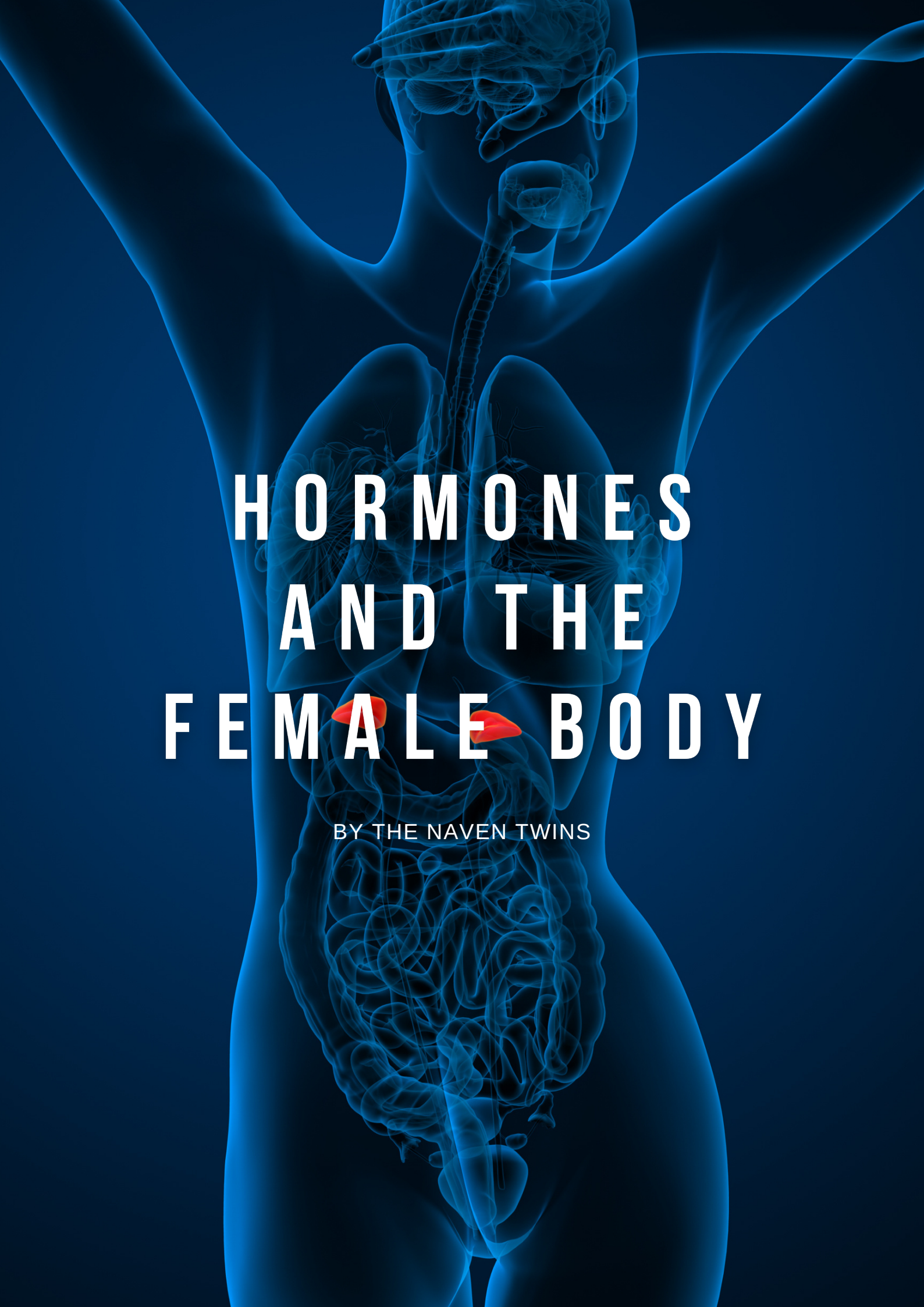




HORMONES AND THE FEMALE BODY

BY THE NAVEN TWINS

HORMONES

What are hormones?

- A hormone is a chemical messenger produced by glands in the endocrine system and released into the bloodstream. Hormones play a crucial role in regulating various physiological processes and maintaining homeostasis (balance) in the body. They act on target cells or organs, where they exert their effects by binding to specific receptors and triggering cellular response

Why are they so important?

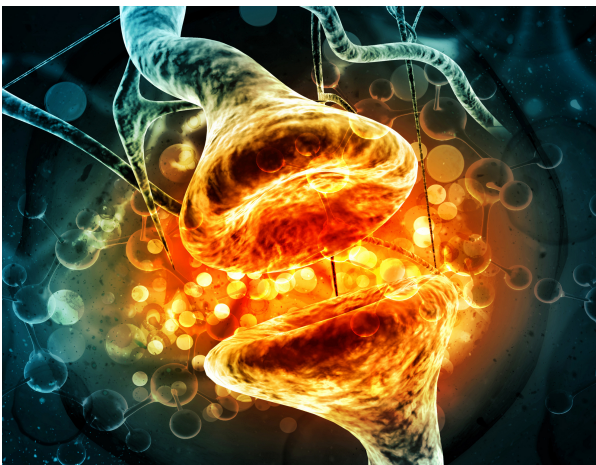
- Hormones play a vital role in regulating virtually every aspect of human physiology, from growth and metabolism to reproduction, stress response and maintaining homeostasis. Imbalances in hormone levels can lead to various health problems and disorders, highlighting the importance of maintaining hormonal balance for overall health and well-being.

What are some of the functions of a hormone in our bodies?

- **Regulating Metabolism:** Hormones such as insulin, glucagon, thyroid hormones, and cortisol play crucial roles in regulating metabolism, including the breakdown, utilization, and storage of nutrients such as glucose, fats, and proteins.
- **Controlling Growth and Development:** Hormones like growth hormone, insulin-like growth factors (IGFs), and thyroid hormones are involved in regulating growth, development, and tissue repair throughout life, from fetal development to childhood growth and adult maintenance.
- **Maintaining Fluid and Electrolyte Balance:** Hormones such as antidiuretic hormone (ADH), aldosterone, and atrial natriuretic peptide (ANP) help regulate fluid balance, electrolyte levels, and blood pressure by influencing water reabsorption, sodium and potassium excretion, and vascular tone.
- **Regulating Reproduction:** Hormones such as gonadotropin-releasing hormone (GnRH), follicle-stimulating hormone (FSH), luteinizing hormone (LH), estrogen, progesterone, and testosterone play key roles in regulating reproductive processes, including puberty, menstrual cycles, ovulation, sperm production, and pregnancy.

HORMONES

- **Supporting Immune Function:** Some hormones, such as cortisol and epinephrine, have immunomodulatory effects and play roles in regulating immune function, inflammation, and the body's response to stress, infection, and injury.
- **Affecting Mood and Behavior:** Hormones like serotonin, dopamine, norepinephrine, and oxytocin influence mood, behavior, and emotions by acting as neurotransmitters or neuromodulators in the brain's limbic system and other regions involved in emotional processing.
- **Regulating Stress Response:** Hormones such as cortisol, epinephrine (adrenaline), and norepinephrine (noradrenaline) play central roles in the body's response to stress, helping mobilize energy resources, increase alertness, and modulate immune function during times of threat or challenge.
- **Modulating Sleep-Wake Cycles:** Hormones like melatonin, produced by the pineal gland, help regulate sleep-wake cycles (circadian rhythms) and promote sleep onset by signaling darkness and promoting relaxation.
- **Controlling Blood Sugar Levels:** Hormones such as insulin, glucagon, and cortisol help regulate blood glucose levels by promoting glucose uptake into cells, stimulating gluconeogenesis (glucose production), and mobilizing glucose from stores during periods of fasting or stress.
- **Supporting Bone Health:** Hormones like estrogen, progesterone, testosterone, parathyroid hormone (PTH), and calcitonin play roles in maintaining bone density, bone remodeling, and calcium balance, influencing bone growth, repair, and remodeling throughout life.



WOMEN'S LIFE CYCLE

Reproductive Years: Spans from puberty, when menstruation begins, until menopause, when menstruation ceases

Perimenopause: Also known as the menopausal transition, is the period leading up to menopause and typically begins several years before menopause. During perimenopause, hormone levels fluctuate, and menstrual periods may become irregular, lighter, or heavier. Women may also experience symptoms such as hot flashes, night sweats, mood changes, vaginal dryness, and sleep disturbances during perimenopause. Perimenopause can last for several years and is characterized by hormonal changes and symptoms that vary in severity and duration among women.

Menopause: Menopause is a natural biological process that marks the end of a woman's reproductive years. It is defined as the cessation of menstruation for 12 consecutive months and typically occurs around the age of 45 to 55. During menopause, the ovaries gradually decrease their production of estrogen and progesterone, leading to changes in the menstrual cycle and eventually the cessation of menstruation altogether.

Postmenopause: Postmenopause refers to the period of time after menopause. Once a woman has gone through menopause and has not had a menstrual period for 12 consecutive months, she is considered postmenopausal. During postmenopause, hormone levels stabilize at lower levels, and symptoms such as hot flashes and night sweats may diminish.



THE STAGES OF YOUR MENSTRUAL CYCLE

Menstruation typically begins during puberty, and continues until menopause, which typically occurs around the age of 45 to 55. Menopause marks the end of a woman's reproductive years and is defined as the cessation of menstruation for 12 consecutive months.

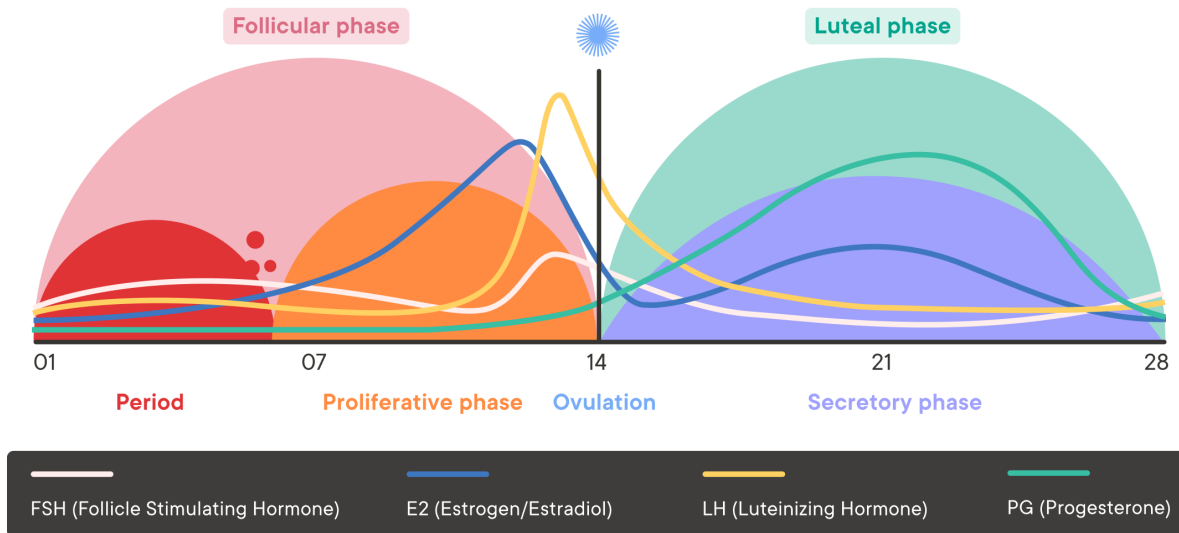
Your menstrual cycle typically consists of four main phases:

- **Menstrual Phase (Days 1-5):** The menstrual cycle begins with menstruation, which typically lasts for about 3 to 7 days. During this phase, the lining of the uterus sheds, and menstrual blood is expelled from the body.
- **Follicular Phase (Days 1-13):** Following menstruation, the follicular phase begins. During this phase, follicle-stimulating hormone (FSH) stimulates the development of follicles in the ovaries, each containing an immature egg. As the follicles grow, they produce estrogen, which thickens the uterine lining in preparation for ovulation.
- **Ovulation (Day 14):** Ovulation usually occurs around day 14 of the menstrual cycle, although it can vary from woman to woman. Ovulation is the release of a mature egg from one of the ovarian follicles. This typically occurs midway through the menstrual cycle.
- **Luteal Phase (Days 15-28):** After ovulation, the luteal phase begins. During this phase, the ruptured follicle transforms into a structure called the corpus luteum, which produces progesterone. Progesterone helps maintain the uterine lining and prepare it for possible implantation of a fertilized egg. If fertilization does not occur, estrogen and progesterone levels decline, leading to the onset of menstruation and the start of a new menstrual cycle.

This cycle typically repeats every 21 to 35 days, with variations in cycle length and timing of ovulation among individuals. It's important to note that the menstrual cycle is influenced by various factors such as hormones, stress, diet, and exercise, and may vary from month to month. An irregular cycle can point to underlying concerns.

YOUR MENSTRUAL CYCLE

Complete Menstrual Cycle



What To Know About Your Menstrual Cycle

