

BRAINY HORMONES

THE BODY'S MESSENGERS

Hormones circulate through our endocrine system and perform important bodily processes that can affect how we feel and function. Some of these hormones are produced in the brain by the hypothalamus.

Visit hormone.org to learn more.

HORMONES PRODUCED IN THE HYPOTHALAMUS

Found deep inside the brain, the hypothalamus produces releasing and inhibiting hormones and controls the “master gland”— the pituitary. Together, the hypothalamus and pituitary tell the other endocrine glands in your body to make the hormones that affect and protect every aspect of your health.



ANTI-DIURETIC HORMONE
Regulates water levels in the body; affects blood pressure and volume

CORTICOTROPIN-RELEASING HORMONE
Drives the body's response to physical and emotional stress; stimulates anxiety; suppresses appetite

GONADOTROPIN-RELEASING HORMONE
Stimulates release of hormones that act on testes and ovaries to initiate and maintain reproductive function; levels increase in puberty to trigger sexual maturation (puberty depends upon the appropriate timing and release of hormones)

GROWTH HORMONE-RELEASING HORMONE
Controls normal physical development in children, metabolism in adults; increased by sleep, stress, exercise, and low blood glucose

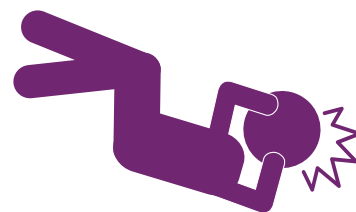
OXYTOCIN
Controls aspects of some human behavior (sexual arousal, recognition, trust, anxiety, and mother-infant bonding) and key aspects of reproductive system (childbirth and lactation in women, ejaculation and conversion of testosterone into dihydrotestosterone in men)

SOMATOSTATIN
In the central nervous system, works to inhibit other hormones, most notably growth and thyroid-stimulating hormones

THYROTROPIN-RELEASING HORMONE
Stimulates production of thyroid hormone, which plays important role in the body's metabolism, heart and digestive functions, muscle control, brain development, and preservation of bones

TRAUMATIC BRAIN INJURY can affect the production levels of hormones that originate in the brain and can lead to serious physical diseases and disorders.

Genetics can also play a role in causing these conditions, and others beyond the central nervous system. **See an endocrinologist to get tested!**



HORMONE	TOO HIGH	TOO LOW
ANTI-DIURETIC HORMONE 	Water retention, diluted blood, seizure	Dehydration, blood pressure drop
CORTICOTROPIN-RELEASING HORMONE 	Diabetes, high blood pressure, osteoporosis, abdominal obesity, acne, dysfunctional menstrual cycle, infertility, muscle loss and weakness (i.e. Cushing's syndrome)	Weight loss, low blood pressure, gastrointestinal distress, anorexia nervosa, increased skin pigmentation in areas not exposed to sun (e.g. hand creases, genitals)
GONADOTROPIN-RELEASING HORMONE 	Disrupted connection between the hypothalamus, pituitary gland, and gonads (i.e. menopause, removal of the testes or ovaries)	Poor bone health, no puberty, infertility (i.e. Kallmann syndrome)
GROWTH HORMONE-RELEASING HORMONE 	Abnormal enlargement of hands, feet, and skull which alter facial features (i.e. acromegaly), diabetes, menstrual disorders	In children—delayed physical growth, delayed puberty In adults—decreased muscle mass and increased body fat
OXYTOCIN 	Beyond the brain, linked to enlarged prostate resulting in urination difficulty	Linked to breastfeeding difficulty in women, and autism/poor social functioning in developing children
SOMATOSTATIN (aka GROWTH HORMONE-INHIBITING HORMONE) 	Beyond the brain, diabetes, gallstones, intolerance to fat in the diet, and diarrhea	Variety of physiological problems, including uncontrolled growth hormone secretion
THYROTROPIN-RELEASING HORMONE 	Weight loss, weak muscles, excessive sweating, excessive menstrual flow (i.e. hyperthyroidism)	Fatigue, depression, weight gain, feeling cold, constipation, dry skin and hair, hair loss, heart problems, dyslipidemia, irregular menstrual cycles (i.e. hypothyroidism)

You have questions. We have answers.

The Hormone Health Network is your trusted source for endocrine patient education. Our free, online resources are available at hormone.org.

Additional editing by Genevieve Neal-Perry, MD, PhD, University of Washington

