**ENDOCRINE SYSTEM AND THE SPECIAL CHEMICALS INVOLVED**

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| **GLAND** | **LOCATION** | **HORMONE** | **TARGET ORGAN** | **MAIN EFFECTS** | **GLAND** | | **HORMONES** | | | **TARGET CELLS** | **MAIN EFFECTS** |
| ANTERIOR LOBE OF THE PITUITARY |  | FOLLICLE-STIMULATING HORMONE (FSH) | OVARIES | GROWTH OF FOLLICLES | OVARIES | | OESTROGEN | | | MANY TISSUES | STIMULATES DEVELOPMENT OF FEMALE SEXUAL CHARACTERISTICS; REGULATES MENSTRUAL CYCLE |
| TESTES | PRODUCTION OF SPERM | TESTES | | ANDROGENS (TESTOSTERONE) | | | MANY TISSUES | STIMULATES SPERM PRODUCTION, GROWTH OF SKELETON AND MUSCLES, DEVELOPMENT OF MALE SEXUAL CHARACTERISTICS |
| LUTEINISING HORMONE (LH) | OVARIES | OVULATION AND MAINTENANCE OF CORPUS LUTEUM | OVARIES | | PROGESTERONE | | | UTERUS AND MAMMARY GLANDS | REGULATES MENSTRUAL CYCLE AND PREGNANCY; PREPARES MAMMARY GLANDS FOR MILK SECRETION |
| TESTES | SECRETION OF TESTOSTERONE | TESTES | | ANDROGENS (TESTOSTERONE) | | | MANY TISSUES | STIMULATES SPERM PRODUCTION, GROWTH OF SKELETON AND MUSCLES, DEVELOPMENT OF MALE SEXUAL CHARACTERISTICS |
| GROWTH HORMONE (GH) | ALL CELLS | GROWTH AND PROTEIN SYNTHESIS |  | | | | | | |
| THYROID STIMULATING HORMONE (TSH) | THYROID GLAND | SECRETION OF HORMONES FROM THYROID | THYROID | | THYROXINE AND TRIIODTHYRONINE | | | MOST CELLS | INCREASES METABOLIC RATE AND OXYGEN CONSUMPTION AND HEAT PRODUCTION |
| CALCITONIN | | | BONES AND KIDNEY | DECREASES CALCIUM AND PHOSPHATE LEVELS IN THE BLOOD |
| PARATHYROID | | PARATHYROID | | | BONES  KIDNEYS | INCREASES LEVELS OF CALCIUM IN BLOOD |
| ADRENOCORTICOTROPIC HORMONE (ACTH) | ADRENAL CORTEX | SECRETION OF HORMONES FROM ADRENAL CORTEX | ADRENAL CORTEX | | CORTICOSTEROIDS (ALDOSTERONE) | | | KIDNEYS | INCREASES REABSORPTION OF SODIUM IONS AND EXCRETION OF POTASSIUM IONS |
| CORTISOL | | | MOST CELLS | PROMOTES NORMAL METABOLISM; HELPS BODY DEAL WITH STRESS; PROMOTES REPAIR OF DAMAGED TISSUES |
|  | | ADRENAL MEDULLA | | ADRENALINE (EPINEPHERINE)  NORADRENALINE  (NOR-EPINEPHERINE) | | | MOST TISSUES | PREPARES THE BODY FOR FIGHT OR FLIGHT; REINFORCES THE EFFECTS OF THE SYMPATHETIC NS |
| PROLACTIN (PRL) | MAMMARY GLANDS | PRODUCE MILK |  | | | | | | |
| POSTERIOR LOBE OF THE PITUITARY |  | ANTIDIURETIC HORMONE (ADH) | KIDNEYS | REABSORP WATER |
| OXYTOCIN (OT) | UTERUS  MAMMARY GLANDS | CONTRACT UTERUS DURING CHILDBIRTH  RELEASE OF MILK |
|  | | | | | | PANCREAS | | INSULIN | MOST CELLS | | STIMULATES UPTAKE OF GLUCOSE; LOWERS BLOOD GLUCOSE LEVEL |
| GLUCAGON | LIVER AND FAT STORAGE TISSUES | | STIMULATES BREAKDOWN OF GLYCOGEN AND FAT; INCREASE BLOOD GLUCOSE LEVELS |
| PINEAL |  | MELATONIN | BRAIN | REGULATES SLEEP CYCLE |  | | | | | | |
| HYPOTHALAMUS |  | HORMONE | ANTERIOR LOBE OF THE PITUITARY | STIMULATES RELEASE OF HORMONES |
| POSTERIOR LOBE OF THE PITUITARY | STIMULATES RELEASE OF HORMONES |