

## muscle physiology lecture 2.1

endocrine system - hormones, system of glands and some other cells that secrete different types of messenger molecules generally into blood to regulate cells, tissues, organs, systems, etc. pituitary, thyroid, adrenal, gonad, pancreas.

neuroendocrinology - neuroendocrine system, brain, hypothalamus

hypothalamus releases growth hormone releasing hormones which signals the pituitary to release growth hormones, which affects the liver.

neuroendocrinology refers to the interaction of the two "organ systems"

example - epi is a messenger molecule secreted upon CNS stimulation

chemical messengers. short range versus long range.

chemical messenger - a compound that transmits a message. hormones have a kind of long range for communication and neurotransmitters do communication to cells that are adjacent to them. (example - serotonin)

neurotransmitters - all or none principle communication, immediate  
hormones can affect the body differently depending on concentration.

they are chemical messengers that are synthesized, stored, and released into the blood by endocrine glands and certain other cells.

endocrine and chemical signals can be blended with each other if the definition of hormone is very inclusive (chemical messengers OR signal molecules) main hormones - pituitary gland, parathyroid glands,

ovaries (female), adrenal glands, thyroid gland, pancreas, testes (male)

the hypothalamus is considered to be the link between the endocrine system and the nervous system. releases - growth hormone from

growth hormone releasing hormone, thyroid-stimulating hormone after thyrotropin releasing hormone, prolactin by TRH, oxytocin, etc. inhibited

hypothalamus - links NS to endocrine system, pituitary - growth hormone,

vasopressin, thyroid - thyroxine, parathyroid - PTH, adrenal glands -

cortisol, epinephrine, pancreas - insulin, glucagon, testis/ovaries -

testosterone, estrogen.