Hormones and Aging/ The Neuroendocrine Theory of Aging

* First developed by Vladimir Dilman, Ph.D. in 1954.
* The neuroendocrine system is a complex system of biochemicals, which uses hormones to regulate many bodily functions.
* The hypothalamus controls the hormone levels throughout the body.
* The hypothalamus maintains homeostatis in the body, similar to a thermostat in a home.
* Hormones levels are a chain reaction, higher levels in one area of the body causes higher levels elsewhere.
* When we are young, our hormone levels are high, but they drop as we age.
* We also become less sensitive to these hormones, and the hypothalamus becomes less precise.
* Specifically, the body lacks growth hormones, which regulate muscle mass.
* Muscle mass decreases, leading to a lower level of bodily function.
* Other hormones help the body repair itself, and so this ability is lost as well.
* This lowered ability to self repair increases the body’s susceptibility to age related diseases.
* Lower levels of hormones in one area of the body cause lower levels in others parts of the body.
* Cortisol, a hormone linked to stress, is one of the few hormones known to increase with age.
* Cortisol is also known to cause damage to the hypothalamus, one result of this being more cortisol production.
* Recent research indicates that the hypothalamus may be regulated by the pineal gland, which is responsible for monitoring the 24 hour sleep cycle.
* Pineal gland function, specifically melatonin function, is known to decrease with age and lead to pineal gland desynchonization.
* Pineal gland desynchronization causes people to have trouble falling asleep, leading to fatigue in the day time.