

HOW THE BRAIN

SENDS MESSAGES

Our brain manages a number of complicated body processes, breathing, digestion, circulation, growth, reproduction, and repair. The brain utilizes two separated systems to control these processes, the nervous system and the endocrine system.

The nervous system is the fastest out of the two. To send a message fast, the brain uses the nervous system. The messages are generally brief (such as a few thousandths of a second). The nervous system employs electrical impulses that travel through nerve cells as fast as 650 feet (200 meters) per second.

The endocrine system sends most messages slowly. It uses hormones to produce more long lasting effects. Hormonal messages travel through the blood stream. It may take several hours or days to reach the destination or to effect a change. Endocrine system is a collection of ductless glands throughout the body that secrete hormones directly into the blood stream. These glands include the pituitary, thyroid, thymus, adrenals, pancreas, ovaries or testes, and many others. The function of these glands is to control the internal environment of the entire body.

Hypothalamus is known as the brain behind the endocrine system. The main vehicle used by hypothalamus is the pituitary (a pea sized gland that sits under the hypothalamus) to control other glands. The hypothalamus weighs a fraction of an ounce. It is about the size of the tip of our thumb.

For example, when hypothalamus determines that the level of thyroid hormone in the blood needs to be increased, it releases a hormone to the pituitary gland instructing it to convey the message to the thyroid gland. The pituitary immediately sends a thyroid stimulating hormone to the thyroid instructing it to release more thyroid. When thyroid receives this message, it will start releasing the thyroid hormone called thyroxine. When this happens, the metabolic rates are speeded up. In the same fashion, hypothalamus controls the other endocrine systems, thus controlling such things as the sugar level in the blood, the body temperature, etc.

Pineal Gland is a tiny pine-cone shaped (the name is from the resemblance of the shape of the organ to the pine cone) organ located at the back of the brain, just above the brain stem.

Many scientists believe that pineal gland is the "aging clock" for the body. It appears to act as the body's timekeeper by keeping the body in sync with the most constant environmental cue we have: the light-dark cycle.

It is the pineal's job to announce to the rest of the body that it is dawn or dusk, time for the body to be awake and alert, or time to prepare for bed and a rejuvenating sleep. This crucial signal sets complex processes into motion, a cycle that is designed to remain relatively regular and balanced. The circadian rhythm (see below for an explanation) lies at the heart of the state of internal balance and harmony we know of as health. When it becomes disrupted over a long period of time, there may be serious physical and psychological consequences.

The pineal gland helps to decongest the emotional body. As we develop faith we develop the pineal gland. To stay well the pineal gland must be open. When a person is very sick, get them to laugh to open the pineal. Coffee and the color blue stimulate the pineal gland. Hold hands in the prayer position over the top of the head to open the pineal gland and shout, "open, open, open!" (Repeat two times).

Pituitary Gland gland is the master gland and controls complex functions in the body. It controls chemical balance, heartbeat, body temperature, blood pressure, nerve impulses, the endocrine system and it's secretion of hormone and enzymes.

When the issue maybe adrenal or thyroid and balancing those organs is obtaining the result work with the pituitary gland. Brown flappy moles indicate pituitary trouble. Take 7 drops of Wild Cherry Bark twice daily. Coffee and the color green stimulate the pituitary gland. To stimulate the pituitary gland: hold the center of your forehead and one inch below the sternum for 30 seconds.

Melatonin is produced by the pineal gland. Scientists believe that the pineal gland and melatonin are the body's primary timekeepers-its clock and calendar-imparting information about the time of day, season of the year, and phase of life to the brain and throughout the body. Melatonin is believed to influence the internal processes so that all of the body's systems work together, in coordination. Should this internal structure become disorganized in any way, the body becomes more susceptible to disease.

Melatonin is produced almost exclusively at night or in a light-free environment. (In fact, it is nicknamed "the chemical expression of darkness" by scientists because of its nocturnal habits.) Blood levels of melatonin are up to ten times greater at night than during the day. This high concentration of nocturnal melatonin led scientists to conclude that the production of this hormone signals to the rest of the body that it is time to sleep. Indeed, melatonin supplements have been used for decades to treat sleep-related problems, such as insomnia, sleep apnea, and jet lag.

In the morning, when we perceive that it is light, melatonin secretion ceases, which stimulates the production of other hormones and hence other body activities to begin. This orderly daily rhythm is of prime importance to our physical condition, intellectual capabilities, and emotional health.

The ways in which these seasonal patterns affect human behavior is under intense investigation. Some researchers believe that seasonal melatonin levels may help to explain Seasonal Affective Disorder. Chronobiology is a new science that is concerned with identifying our cycles and internal clocks and seeing how they interact. Such natural rhythms as temperature fluctuations, weather systems, patterns of light and dark are studied to explore how it affects the life cycle of men and women.

Melatonin and Serotonin

Melatonin affects the production and subsequent action of several other hormones in the body. It works in sync with serotonin, a powerful neurotransmitter from which it is derived. Serotonin is involved in several central physiological processes, including pain perception, temperature and blood-pressure regulation, and several neuropsychological functions such as appetite, memory, and mood. Like melatonin, serotonin levels influence a myriad of endocrine activities, including those performed by the hypothalamus and pituitary gland.

Generally speaking, melatonin and serotonin are not active in the body at the same time. As mentioned earlier, melatonin is active at night; serotonin is active in the daytime. Although both tend to moderate endocrine functions, serotonin may also have a negative effect on the cardiovascular system if its levels are too high in the bloodstream. It has been known to cause blood clotting and narrowing of the blood vessels, among other problems. And, unlike melatonin, serotonin levels in the body do not decrease as we age, but instead increase in relation to other hormones and neurotransmitters. Scientists who specialize in the study of elderly and the aging process believe that this age-related imbalance between serotonin and melatonin may play as important a role in the aging process as the lack of melatonin itself, particularly in relation to heart disease. Without melatonin to act as a free-radical scavenger during the night, more damage may occur to blood vessels, thus stimulating the release of more serotonin.