

What Is the Brain Clock and Its 24-Hour Circadian Rhythm?

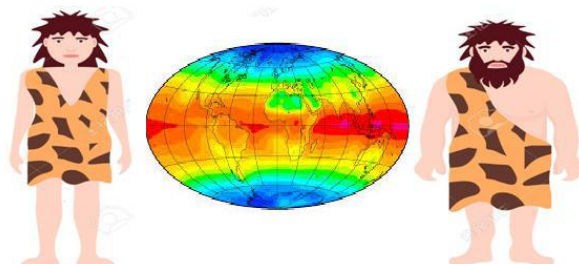
In October 2017, three medical Physiologists—Drs. Hill, Young, and Rosbash received Nobel Prize for their noteworthy discovery on “Molecular mechanisms controlling the Circadian Rhythms.” This discovery gave the world profound insights into the internal timing systems of living beings and how these control their survival behaviors. From plants to the tiniest living organisms, such as bacteria to complex living species such as humans, each has coordinated biologic routines or rhythms for survival. These rhythms are called the Circadian Rhythms, and these are under the control of the master clock located in the brain. The timer resets itself daily to the 24-hour cycle of the earth’s rotation on its axis. The three essential survival behaviors of humans under the influence of the circadian brain clock are:

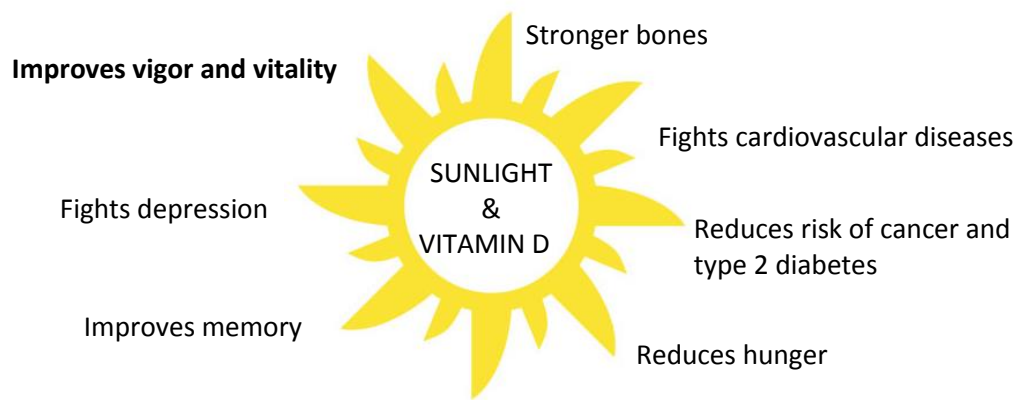
1. ***Sleep-Wake Cycle***
2. ***Fasting—Feeding Cycle***
3. ***Activity—Rest Cycle***

The sleep-wake cycle is the core survival behavior which regulates the other two cycles. If the sleep cycle gets disrupted, the other two survival behaviors invariably will get upset, causing loss of vitality and disease.

Humans feel sleepy during the night and hungry around lunchtime naturally because of the built-in circadian 24-hour rhythms. The natural 24-hour cycle of day and night as the earth rotates around its axis is the most fantastic feature of the planet earth. To adapt to the daily changes of the dark and light cycles of the environment, all living beings on Earth have developed an internal timing system. The word circadian comes from the Latin word “circa,” which means round, and “Diem,” which means the day. The daily changes in behavior, as well as the physiological activities of living beings, remain under the control of the internal clock system. Every organ in the human body such as heart, liver, digestive tract, kidneys, immune system, hormonal systems, functions at its peak during the daylight hours. The dark hours of the night are for rest, repair, and rejuvenation. Living in harmony with the natural circadian rhythms is critical to the health, well-being, and survival of all living beings.

The human race evolved near the equator, the region of planet earth where the intensity and the bioenergy of the sun are the strongest. As the humans moved away from the equator to higher latitudes, the human body adapted to capture the maximum energy of the sun and the daylight. This adaptation consisted of the skin, as well as the eye pigment, becoming lighter. The preindustrial humans lived close to nature, mostly in the outdoor setting, in harmony with the natural sunlight and daylight. There was no artificial light or blue light from digital devices and television screens. Preindustrial humans fasted/ fed, slept/woke up, and moved about according to the natural circadian rhythms in harmony with the cues (signals) of daylight and darkness.





Sun for Health and creating Vitamin D