

The background features a large, abstract geometric design. It includes a large, light blue parallelogram and a smaller, magenta parallelogram, both tilted at an angle. Several smaller, bright blue rectangular bars are scattered around the larger shapes, some parallel to them and others at different angles, creating a sense of motion and rhythm.

RHYTHM

Your crash course in designing your sleep cycle

Contents

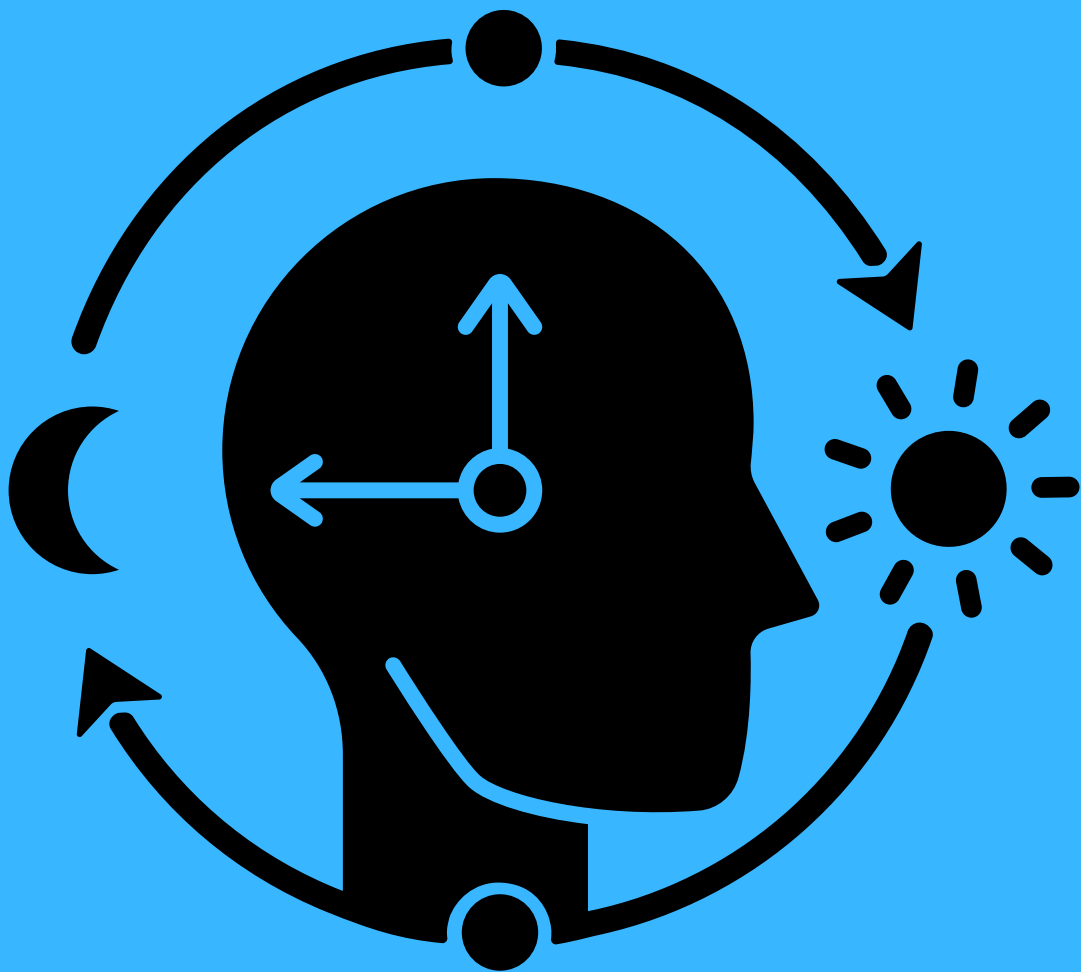
Understanding Rhythm

Part 1: Circadian Rhythm

Part 2: Light Information

Part 3: Organization and Application

Understanding Rhythm



Part 1: Circadian Rhythm

What is Circadian Rhythm?

Sometimes called the body clock, the circadian rhythm is close to 24 hours long. All life has a circadian rhythm of the same duration. This daily cycle influences brain-wave activity patterns, cell repair, and hormone levels. The cycle is built into all life, but changes in light levels and temperature conditions can have a direct effect on you.

Our CR is controlled and manipulated by our environment. Our eating, lighting, exposure to radiation, exercise, stress, and many other lifestyle behaviors influence our circadian rhythm. This cycle places an important role in our internal metabolic processes. There are other factors that have an influence on either synchronization or desynchronization of the clock, but they play a small part.

The Rhythm of Daily Life

Metabolism, cognition, and other physiological processes follow a circadian rhythm. Evening activities affect circadian rhythm. It is most important to monitor your activity between 6:00 pm and midnight.

Even before we wake up in the morning, our internal clock prepares our body for waking up. It begins to shut down the production of the sleep hormone melatonin from our pineal gland. Our breathing becomes slightly faster and our heartbeat picks up a few beats per minute as our blood pressure rises slightly. Our core body temperature notches up half a degree even before we open our eyes.

Our sense of health is determined by our daily rhythms. Feeling good in the morning comes from having sufficient sleep, and healthy bowel movements to eliminate the toxins we collected at night.

Shortly after we open our eyes, the adrenal glands produce more cortisol (stress hormone) to get us through the morning routine. The pancreas becomes primed to release insulin to handle breakfast.

After breakfast, the brain is primed for learning and problem-solving in the first half of the day. In the afternoon, we feel healthy if we have accomplished enough work to feel satisfied with our efforts. Without a good night's sleep, you have an overwhelming feeling that you are wasting the day. As time passes, muscle tone peaks. And as evening comes, body temperature drops, and the production of melatonin (sleep hormone) rises – and the body prepares for sleep.



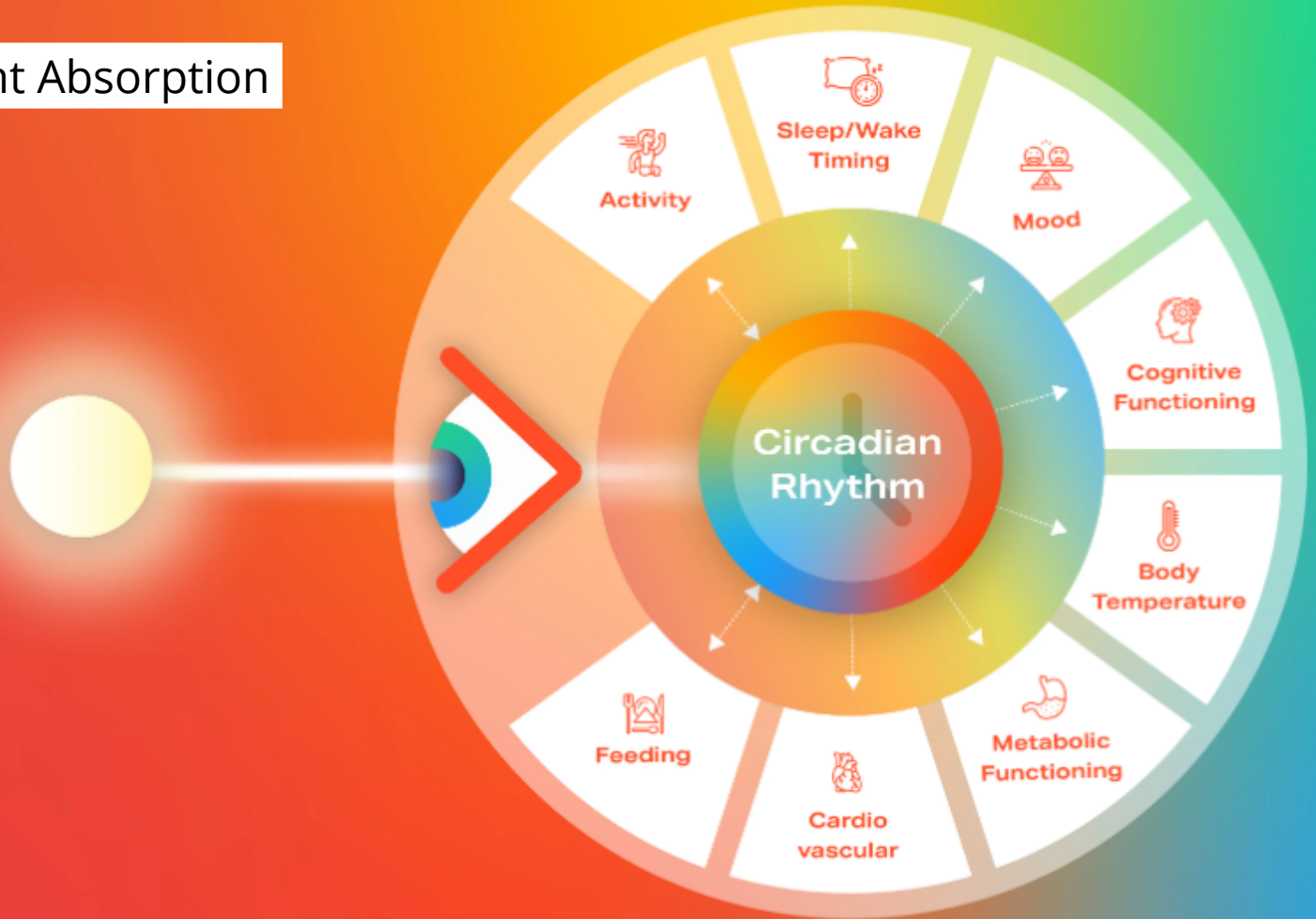
Part 2: Light Information

A Brief History of Harnessing Light

Human history can be summed up as our attempt to beat the clock. Our primordial rhythms were natural, they were derived from natural phenomenon (sunrise, sunset). Modern rhythms are out of sync with nature. They are aligned with an artificial environment, where sleep and eating schedules have become random and out of sync with our biology.

The influence of light is the foundation for your circadian rhythms, by controlling light you are directly influencing your human performance. Research has shown that mammalian circadian rhythms form an integral physiological system allowing for the synchronization of all metabolic processes to daily light/dark cycles, thereby optimizing their efficacy.

Light Absorption



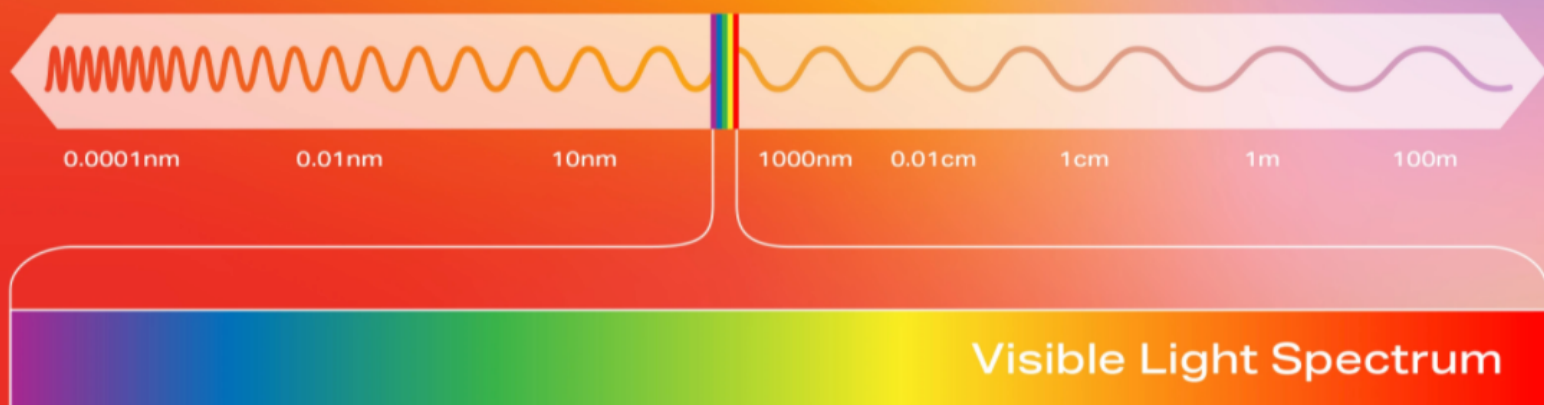
Part 2: Light Information

The Role of Light

Lack of light is linked to depression, and short winter days with less than 6 hours of sunlight are a major culprit. SAD (seasonal affective disorder) is a form of depression with symptoms including fatigue, hopelessness, and social withdrawal. Getting at least an hour of daylight exposure rebalances the brain chemicals.

Anything that has a profound effect on **ALL METABOLIC PROCESSES** is obviously important. Now you know the power of light.

If you are searching for the right answer or action to take regarding your own health and performance. Start with your light exposure. When circadian rhythms are disrupted, it upsets the physiology of your body. When the body is expecting bright light and instead is exposed to dimness or darkness, its attempts to resynchronize can cause cloudy thinking, fatigue, and even more destructive damage to the psyche and physiology.



Part 2: Light Information

Our bodies work best when we're getting restful sleep every day. But even if you're getting 7-8 hours, you may not be aligned with your body's optimal sleep cycle.

In the absence of technology like artificial lighting and screens, the human body will typically sync with the planet's day/night cycle: rising with the sun and sleeping when it's dark. We've come a long way from those origins, but our bodies are still designed to work with an abundance of light during the day, and restful sleep when it's dark at night. If you sleep from 3 am to Noon every day, you may get enough sleep, but the quality of your sleep will likely not be as good.

To test this theory, a researcher in 2013 brought a group of self-proclaimed "night owls" on a camping trip. Beforehand, the night owls monitored and recorded their sleep patterns. They even produced saliva samples to show when their body produced the most melatonin, the hormone that helps regulate sleep. Those results showed their bodies did indeed have a delayed onset for melatonin, producing the hormone around 10 pm, hours later than most people.

Then, the night owls camped for 2 days with no external stimulation like bright lights, coffee, or screens. They were tested again and their saliva showed after just two days in the wilderness, they were producing melatonin earlier in the evening, so they could fall asleep sooner. This is just one example of how most people's bodies work best when they sleep and wake closer to the natural pattern of the sun and the earth.

Part 2: Organization and Application

01

Find Your Optimal Rise Time

Resetting your sleep clock starts with getting up at the same time every day.

02

Let The Light In

Get into direct sunlight if possible or absorb light by a brightly lit window, an LED lightbox.

03

Train

Try working out first thing in the morning to signal to your body and brain that it's "wake up time."

04

Eat and Hydrate

Schedule your windows of fuel. Turn food and hydration into powerful tools that will send the right signals

05

Ambient Mode

Set the mood with dimming your environment and eliminating blue light exposure.

06

Find Your Optimal Sleep Time

Set the time you go to sleep, blackout your environment and recharge.

RISE AND FALL WITH THE SUN

[1] National Heart, Lung, and Blood Association. Sleep Deprivation and Deficiency.

[2] The State of Sleep Health in America.

[3] Michael I., Richard O., Judith Carroll. "Sleep Disturbance, Sleep Duration, and Inflammation: A Systematic Review and Meta-Analysis of Cohort Studies and Experimental Sleep Deprivation" Biological Psychiatry. 2016 July .

[4] Janet M., Norah S., Hans M., Monika H. "Sleep Loss and Inflammation" Best Practice & Research Clinical Endocrinology & Metabolism. 2010 Oct.

[5] Book: Satchin Panda, PhD. The Circadian Code: lose weight, supercharge your energy, and transform your health from morning to midnight. Rodale Books. Jun 12, 2018 | ISBN 9781635652437

[6] Killgore WD. "Effects of sleep deprivation on cognition" Progress in Brain Research. 2010

[7] Sheppard A and Wolffsohn J. "Digital eye strain: prevalence, measurement and amelioration." BMJ Open Ophthalmology. 2018 April.

[8] Jung C, Khalsa S, et al. Acute Effects of Bright Light Exposure on Cortisol Levels. Journal of Biological Rhythms. 2010 Jun.

[9] Harvard Health. Blue light has a dark side.

[10] N E Klepeis, W C Nelson, et al. The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants. The Journal of Exposure Analysis and Environmental Epidemiology. 2001 June.