

Body Rhythms



Do you feel jetlagged, like the body is out of sync?

Our physical bodies are a lot less solid than they seem. They are not fixed isolated objects. Biological molecules and systems are made up of moving energies that constantly interact, participating in the ongoing processes of life. These energies flow in time.

Body Rhythms

To make its functions run smoothly in the flow of time, the body relies on rhythms. These body rhythms happen on different time scales. Some are really tiny, like molecules vibrating. Others are bigger, like the heart pumping. Hormones, which are like chemical messengers in the body, are released in rhythmic pulses. The brain sparks to the beat of brain waves. We also have a daily rhythm that makes us go from being awake to being asleep.

All these rhythms are connected. They sync up with each other and with things in the world around us. You can think of the body's rhythms like an orchestra. The functions in our body are like the musicians. They each play their own tune, but they stay in sync by listening to each other.

These rhythms are really important. They help the right things happen at the right time in our body. When these rhythms work well together, our nervous system can send messages more effectively. Overall, rhythm is the foundation that helps our body and brain work smoothly and communicate precisely. The rhythms and cycles of the body naturally fall in sync with each other, if given space to do so. Having a regular baseline rhythm allows other rhythmic functions to sync on top.



The Circadian Rhythm

One important baseline rhythm is the circadian rhythm. This rhythm follows a daily pattern that matches up with the sun's cycle. This 24 hour rhythm coordinates many things like brain activity, metabolism (how our body uses energy), hormone release, mood and energy levels, and when our bowels and bladder are active.

Relative to other rhythms in the body, scientists understand the circadian rhythm quite well. When beginning to study the circadian rhythm, researchers found a group of special cells in the brain that can sense light. These cells have their own internal clock that runs close to 24 hours. This cluster of cells is known as the Supra-Chiasmatic Nucleus (SCN).

At first, we thought the SCN conducts all the circadian rhythms in the body. But then it was discovered that almost every cell in our body has its own clock that runs close to 24 hours! From our heart to our toes, these clocks help decide which genes make proteins and which proteins are present in our cells throughout the day. You can think of the SCN as the conductor of the body's orchestra of clocks.

Medical investigations

When rhythms in the body are out of sync, this is largely invisible to medical science.



Samples sent to medical laboratories, where they are checked for disease, are no longer part of an alive, moving body. Medical tests and scans usually show still pictures, fragments of the body frozen in time. They are not good at showing rhythms in motion.

Rhythms and symptoms

The impact of out-of-sync rhythms on our health can be seen when we look at what happens when rhythms are disrupted. Most of us have experienced Jet-lag, when our bodily rhythms cross time-zones and fall out of sync with the sun. Shift-workers experience similar symptoms. Common symptoms are fatigue, insomnia, digestive problems, and problems with mood and attention.

Although it's not easy to study these rhythms, some doctors and researchers believe that some of the most common functional symptoms, like fatigue, have a lot in common with jet lag. This theory is supported by many people's experience that a routine that can entrain the circadian rhythm, helps recovery from functional symptoms.

Entrainment

Bringing bodily rhythms back in sync is called entrainment. Research tells us that to get our rhythms back on track, we need to expose our bodies to certain cues at the same time every day for several days.



Bodysymptoms.

The good news is that the most powerful cues to entrain body rhythms are widely available and free. Morning sunlight, especially the blue light from the sun in the first three hours after sunrise, is a crucial cue that resets the SCN.

Clocks in different parts of the body respond to different cues. For example, movement entrains circadian clocks in the muscles. The time we eat entrains the clocks in the liver.

Spending most of the day indoors has become so normal in modern life, that we don't think about how this weakens the circadian cues our bodies receive.

Getting into the habit of taking a morning walk outside can do wonders. Even on cloudy days, spending about 30 minutes outside in the early morning can help reset your body's rhythm.

If you can't go outside, having breakfast by a large bright window is a substitute. You can also use a therapeutic light box, which gives the same wavelength of light as the sun.

This is just the beginning. Once your circadian rhythm is back on track, other body rhythms will be able to fall in sync. We can help our bodies get back to their natural rhythms. Following a routine can help us do this. This is why getting into a routine is an important part of recovery. Our bodies function better with predictable rhythms. Daily routines help our body regulate and coordinate, allowing different processes to work together more efficiently.

This reset requires a few weeks of sticking to a routine, so be patient.



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