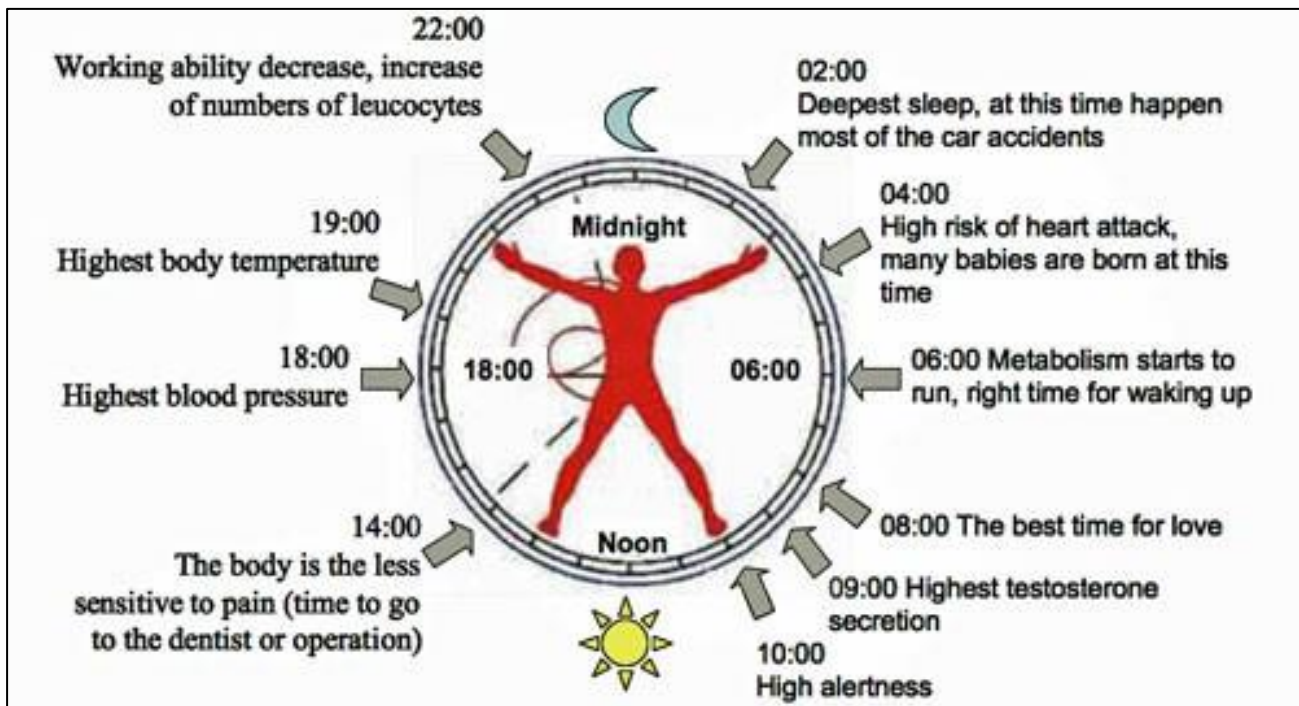




## Circadian Rhythms Information Sheet



### What are circadian rhythms?

Circadian rhythms are physical, mental and behavioural changes that follow a roughly 24-hour cycle, responding primarily to light and darkness in an organism's environment. They are found in most living things, including humans, animals, plants and many tiny microbes. The study of circadian rhythms is called chronobiology.

### Circadian rhythms, biological clocks?

Circadian Rhythms are part of our biological clock. The biological clocks that control circadian rhythms are groupings of interacting molecules in cells throughout the body. A "master clock" in the brain coordinates all the body clocks so that they are in synch. The "master clock" that controls circadian rhythms consists of a group of nerve cells in the brain called the suprachiasmatic nucleus, or SCN. The SCN contains about 20,000 nerve cells and is in the hypothalamus, an area of the brain just above where the optic nerves from the eyes cross.

### How does circadian rhythm research contribute to human health?

Understanding what makes biological clocks tick may lead researchers to treatments for sleep disorders, jet lag and other health problems.





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Learning more about the genes responsible for circadian rhythms will also enhance our understanding of biological systems and the human body.

### **How do circadian rhythms affect body function and health?**

Circadian rhythms can influence sleep-wake cycles, hormone release, body temperature and other important bodily functions. They have been linked to various sleep disorders, such as insomnia. Abnormal circadian rhythms have also been associated with obesity, diabetes, depression, bipolar disorder and seasonal affective disorder.

### **Sources of information:**

**Circadian Rhythms Fact Sheet**

[https://www.nigms.nih.gov/education/pages/Factsheet\\_CircadianRhythms.aspx](https://www.nigms.nih.gov/education/pages/Factsheet_CircadianRhythms.aspx)

**Controlling the body clock**

<https://www.sciencedaily.com/releases/2016/12/161222131636.htm>

**Way to control internal clocks**

<https://www.sciencedaily.com/releases/2014/12/14122312224.htm>

**Altered circadian rhythm worsens Parkinson's disease**

<https://www.sciencedaily.com/releases/2016/04/160405093112.htm>

### **Company Profile:**

Our flagship Care3® is our SENIOR care, health and wellness public-sector brand. Care3® is an end-to-end ecosystem and medically - T2, CE approved (NICE approval pending) wearable which maintains the user's health and wellbeing, linked to an NHS triage monitoring centre. It uses over 30+ algorithms and offers an ethical IoT option. The plug and play equipment can connect to any diagnostic or independent living device, peripheral and IoT- smart home technology. It also collects Big Data. Our end to end, pull technology gives the user easy access to care and support: like they are wearing the NHS and Social Services on your wrist. There is no other end-to-end TECS that exists in the UK which offers this level of service integration, non-invasive medical diagnostic, health and wellbeing monitoring solution.



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