

Workplace Insights

Tick Tock! Circadian Rhythms and Light

A 15-year veteran product manager of a software company, “Robert” loves the early morning when he first arrives at the office. He is always energized and typically at the top of his game. Robert knows though that every day around 2 p.m., he tends to get very drowsy if he’s at his desk. When that happens, he gets up, walks around, and tries to re-charge his brain to get him through the rest of his day.

What Robert is experiencing are the effects of his natural circadian rhythm: the internal clock we all have which regulates our sleep/wake cycle. Circadian rhythms are controlled by the hypothalamus – one of the most primitive structures in the brain – which is also responsible for autonomic functions such as breathing, sweating, and heart rate. These rhythms regularly tell our brains at certain points through the day whether we should be tired and sleepy or alert and awake. Multiple factors, including nighttime sleep, naps, exercise, and access to sunlight, can all play a major role in a properly functioning circadian rhythm.



Employees like Robert spend an average of 35-45 hours a week at their work, typically during daylight hours when the brain receives signals to stay awake. From a design perspective, this challenges us to find ways to help employees like Robert be as productive as possible. And one of the most powerful tools to assist in regulating circadian rhythms in indoor environments is lighting.

Both inadequate quantities of light, as well as extreme quantities of light, can interfere with the brain’s signals. Therefore, to help employees be as productive as possible, workspaces should be designed to maximize an individual’s exposure to natural daylight throughout the day. As the experts at sleep.org note, “Daylight is a powerful force in keeping your body clock on track, but it only works if you can see it.” A few key tools to use in open office designs are:

- Pull private offices to the interior of the building, allowing windows to be accessed by all open office areas.
- Incorporate glass office fronts or door sidelights for more visibility.
- Create open collaboration areas and informal meeting areas on perimeters to get people meeting and congregating near daylighting.
- Incorporate skylights where feasible to allow light to stream down into the center of the building.
- Design cubicles with openings that face toward the perimeter to capture light coming in from those areas.
- Place break rooms and cafeterias on perimeters.
- Create outdoor spaces for relaxation and decompression.
- Use products that can mimic the output of natural light: brightening spaces during peak hours for natural daylight, and dimming as the sun sets.

Techniques and tools such as these can help keep employees’ circadian rhythms in optimal condition.

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All in a Day's Time: Secrets to a Productive Workday

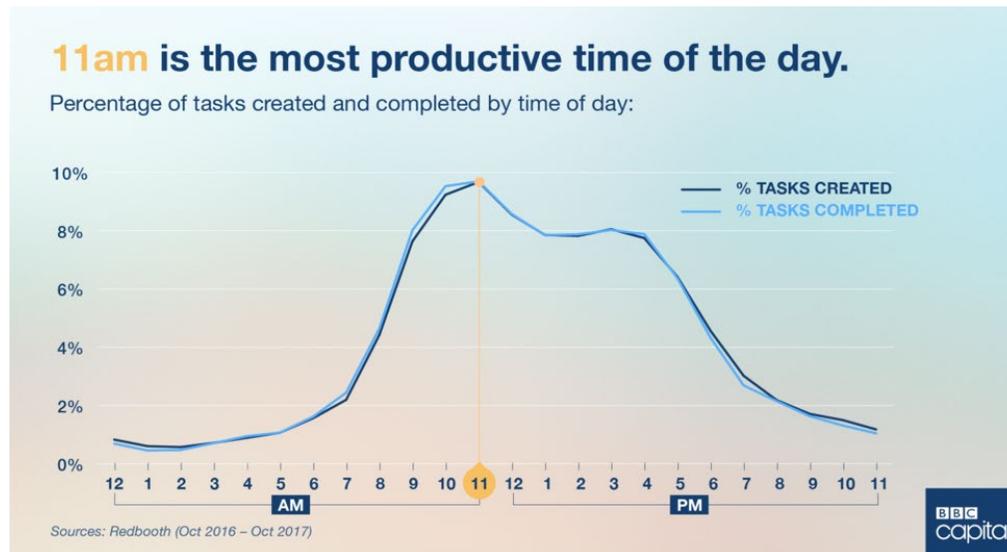
6 a.m. - 7 a.m. As the sun rises, our bodies signal that we need to wake. Experts suggest taking a morning walk to let the sunshine in and energize for the day ahead.

9 a.m. - 10 a.m. Mid-morning is when our bodies have achieved the highest levels of alertness-boosting hormones (cortisols), and melatonin – the sleep-making hormone – is at its low point. This is the optimal time to schedule meetings and discussions! “About 75% of people tend to be most mentally alert between 9 a.m. and 11 a.m.” says John Trougakos, an associate professor of organizational behavior at the University of Toronto in Canada.

11 a.m. to Noon. The levels of cortisol in our systems taper off but we are still very alert. In addition, our core body temperature peaks during this time, which experts believe may help brains focus and energize.

1 p.m. - 2 p.m. The daily dip in energy occurs right after lunch. This is the time to move around and increase access to sunlight. Take a walk outdoors to refresh and re-energize for the push through the final hours.

3 p.m. - 4 p.m. This is the ideal time for team-based problem solving. Also good: any work that requires greater coordination, since hand-eye coordination peaks at this time.



<https://www.bbc.com/worklife/article/20180102-is-this-the-best-time-for-productivity>

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