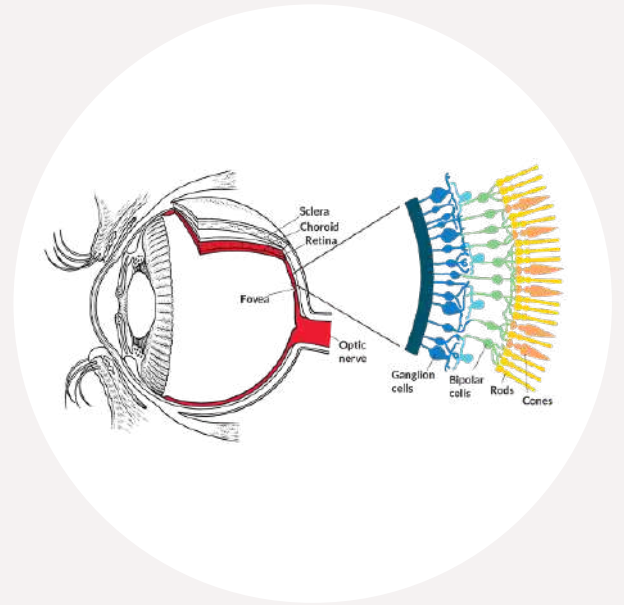


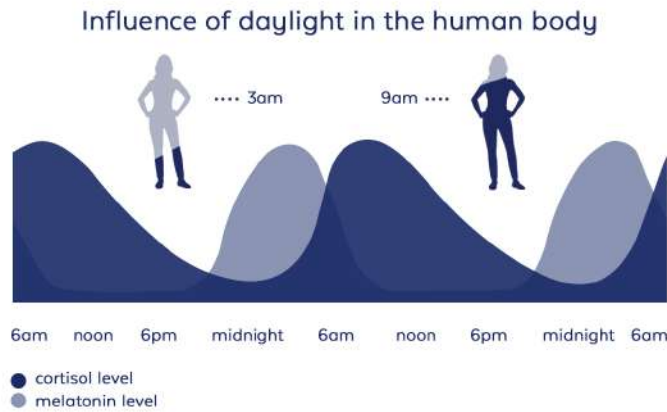
WHY IS BIOCENTRIC LIGHTING™ IMPORTANT?

IT ALL STARTS IN THE EYE

BioCentric Lighting™ is based on the understanding of how light affects our physiology. In the retina in the back of our eyes, we have rods and cones that help us interpret our surroundings: we call that the visual system. In addition to rods and cones, there is also a third type of photoreceptor, the retinal ganglion cells*. Many ganglion cells are involved in the visual system. A small proportion of these cells send signals to our internal master clock¹, which in turn regulates the timing of a variety of processes such as our sleep / wake cycle, our metabolism², our immune system³, etc. With the help of information in the influx of light via retinal ganglion cells, the production of melatonin is controlled, which in turn synchronizes the internal cyclic processes in the body. The graphic below describes the melatonin and cortisol levels based on a normal day with sunrise at 07.00 and sunset at 17.30.



*Some ganglion cells contain melanopsin which makes them sensitive to light.



THE CIRCADIAN RHYTHM

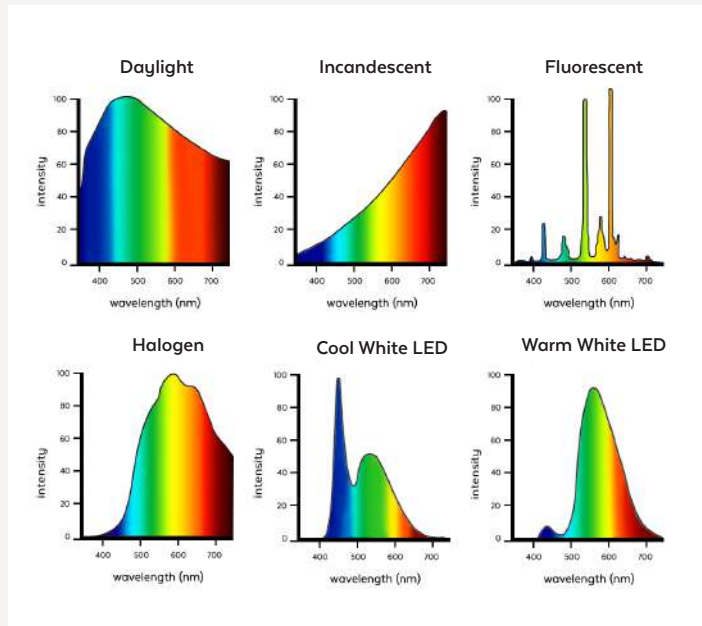
The timing of our body's internal processes is collectively called our circadian rhythm. Light information from the retinal ganglion cells is used to synchronize the circadian rhythm with our surroundings to avoid circadian misalignment and sleep deprivation.

THE IMPORTANCE OF DAYLIGHT

Increasing amounts of evidence reiterate the importance of daylight for our health, wellbeing and sleep⁴. Scientists agree that almost 50% of our protein coding genes follow the circadian rhythm^{5,6}.

Our modern society is often in conflict with our intrinsic biology. On average, we spend 21 of 24 hours a day indoors⁷ in lighting which often does not have the necessary properties to entrain the circadian rhythm.

For example, a sunny day outside might give over 100,000 LUX⁸, a cloudy day down to 10 000 lux⁸, whereas indoor light might give 100-500 lux⁸ with a suboptimal color spectra. As seen in the graphics on the right, daylight is rich in delivering light with full color spectra, including blue wavelengths, which fluorescent tubes, halogen lamps, or incandescent bulbs does not⁹.



BENEFITS OF BIOCENTRIC LIGHTING™

BioCentric Lighting™ environments by BrainLit directly counter the effects of circadian misalignment caused by lack of proper light exposure. As an intelligent lighting solution that accurately simulates natural daylight for human wellbeing, BioCentric Lighting™ uses algorithm-based light recipes to both balance and sustain the circadian rhythm.

BioCentric Lighting™ can have positive effects on cognition, alertness and sleep. A synchronized circadian rhythm, which BioCentric Lighting™ supports, may include benefits such as:

- Better sleep¹⁰
- Improved alertness¹¹
- Better cognitive function¹²

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