



HAVING A DIMMED ENVIRONMENT BEFORE BEDTIME

This strategy is suggested in the 16-18 BrainWaves lesson: **Sleep and teenagers**

About having a dimmed environment before bedtime

The indoor light environment in the bedroom affects sleep quality, as light is the most powerful influence on the human circadian rhythm. The colour of lights is categorised by Correlated Colour Temperature (CCT) and measured in kelvin (K). A standard light is about 3000K, while the bright headlights of some newer cars are 6000K.

Lights with high CCT are considered to affect the circadian rhythm negatively, suppressing the hormone melatonin and hence the effectiveness of sleep. To assist sleep, a dimmed environment could consist of LED light with a CCT of 2700K and below, commonly called 'warm white'. At this lower end of the spectrum, the 'warmer' light creates a relaxing, cosy feeling, like candlelight or incandescent lights.

The scientific evidence behind having a dimmed environment before bedtime

A study done on adolescents showed that subjects exposed to a low CCT light environment (2000K) in an hour before bedtime had better sleep quality, reduced next-morning sleepiness and slightly decreased fatigue, compared to those exposed to the traditional fluorescent lamp (with a high CCT of 6000K). The full study can be accessed below. Why high CCT lights can affect sleep is explained in the "Discussion" section of this article:

- Meng Wu et al. (2021) [The effects of different bedroom light environments in the evening on adolescents](#). Building and Environment, Volume 206, 2021, 108321, DOI: 10.1016/j.buildenv.2021.108321

Another useful article published in Sleep Medicine Reviews:

- Ricketts E.J. et al. (2022) [Electric lighting, adolescent sleep and circadian outcomes, and recommendations for improving light health](#). Sleep Medicine Reviews, Volume 64, 2022, 101667 DOI: 10.1016/j.smrv.2022.101667.

Further reading

'The Teens Bedroom Environment': <https://teensleephub.org.uk/bedroom-environment/>

Other sleep advice sheets from The Sleep Charity': <https://thesleepcharity.org.uk/>