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Perspective

Resting on a Mattress Cover with Temperature Control Enhances Your Sleep Experience

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INTRODUCTION

For the best sleep, body temperature has to be strictly controlled. Nonetheless, a number of internal and external variables can change body temperature as you sleep. We compared the effects of sleeping for a week with and without an active temperature-controlled mattress cover (the eight sleep pod) to see how these factors influenced both cardiovascular health measures and sleep quality. A total of almost 300 nights were spent by 54 participants wearing a Home Sleep Test device (HST) with and without the pod. During this time, their sleeping Heart Rates (HR) and Heart Rate Variability (HRV) were recorded. Men's deep and light sleep grew by 14 and 23 minutes, respectively, while women's REM sleep rose by 9 minutes when the pod was used. HR (-2%) during sleeping and HRV (+7%) considerably increased when pod was turned on. This is the first study to our knowledge that demonstrates the following three benefits of a continuously regulated bed surface: 1) Altering the amount of time spent in different sleep stages at different times during the night; 2) Enhancing thermal comfort and perceived quality of sleep and; 3) Improving cardiovascular recovery (HR and HRV) during sleep.

DESCRIPTION

For the best quality of sleep, body temperature must be strictly controlled. It is important to keep skin temperatures between 33.5°C and 35.5°C while you sleep, since going over or below this range might cause sleep disruptions, inhibit deep sleep and shorten Total Sleep Time (TST). Perceived sleep quality is favorably correlated with thermal comfort during the night as well. In order to improve thermal comfort and subjective sleep quality, ambient temperature has been adjusted in previous research depending on sleep phases. Still, upholding an If bedding, clothing and/or HVAC systems are unable to counteract the hot or cold ambient bedroom temperatures, it may be challenging to maintain the ideal skin temperature range while you sleep. Furthermore, thermoregulatory capacities can be altered by ageing and certain disorders like narcolepsy and significant depression, which makes it harder to have a decent night's sleep. Numerous techniques have been used in previous research to alter body temperatures in order to induce sleep and/or enhance the quality of sleep. These techniques include adjusting the room temperature, warming the extremities, changing the layers of clothing or bedding, using electric blankets, wearing a thermal suit while sleeping, cooling the head and resting on a mattress with a high heat capacity.

Thermal comfort and thermal perception during sleep have a significant influence on the quality of sleep, according to prior study. According to both genders, they felt more at ease with their body temperature when they slept with the pod turned on as opposed to off and they felt colder all around when using the pod on. Everybody has various temperature requirements depending on their unique body temperature pattern, therefore the pod let everyone sleep at the temperature that was most pleasant for them. As a result, the individuals reported that falling asleep was simpler and that their sleep was more peaceful. Light sleep, TST and SE were greater in those who felt more at ease with their body temperature. As a result, individuals' thermal comfort was enhanced by the pod's constant temperature control, which raised both the quantitative and qualitative aspects of their sleep quality.

CONCLUSION

Through a two-week period of bed temperature alternating, we were able to evaluate the effects of a temperature-controlled mattress cover (the eight sleep pod) on cardiovascular and sleep-related parameters, as well as how well participants felt they slept. This is the first study that we are aware of that demonstrates how regulating the temperature of the sleeping surface at specific times of the night may enhance deep, light and Rapid Eye Movement (REM) sleep phases as well as enhance cardiovascular recovery by lowering heart rate and raising heart rate variability. Men and women both had substantial increases in deep sleep and REM sleep when they slept at lower temperatures throughout the first half of the night. When it came to the second portion of the night, men who slept in higher temperatures slept lighter than those who did not regulate their temperature. Thermal comfort, subjective sleep

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quality and pleasure all significantly improved as a result of these adjustments, which also produced a more balanced sleep architecture.