

Case Study: Benefits of Bedding with Outlast® Thermo-Technology

THG SleepView



Situation

On average, about one-third of our lives are spent in bed which is why it's important to recognize the benefits of a comfortable sleep environment. This can help mitigate sleep disturbances that interfere with a good night's rest, such as incompatible sleep temperatures with a partner or menopause.

A person's quality of sleep depends on the external environment and bedding is a key element that makes up this environment, as it directly touches the body.

Objective

Outlast commissioned c.russ NETCONSULTS to conduct a study that would demonstrate how humidity—specifically absolute humidity—develops when using bedding products with and without Outlast® technology. The study was conducted using THG Sleep View micro-climate measurement technology. This test serves to illustrate the effects of imbalanced body temperature on sleep disturbances, while supporting the development of sleep and bedding systems with high comfort potential.

Methodology

Live, and almost in real time, THG Sleep View technology, measures the microclimate of a person's sleep environment (the development of heat and humidity), making it visible to the naked eye.

With this special technology, an image of heat and humidity interactions around the body is created. The result is offering hints on its need for more or less heat.

The participant in study was given two duvets that contained SleepView. Over the duration of two nights, participant slept under a different duvet each night.

Duvets provided to the participant:

- Standard Control – 100% cotton outer fabric, 55 oz. 100% PES fiberfill
- Outlast® Fiberfill – 100% cotton outer fabric, 55 oz. 50/50 Outlast® polyester fiberfill/PES fiberfill

To note, there are no other testing systems other than THG Sleep View technology that work with the absolute humidity.



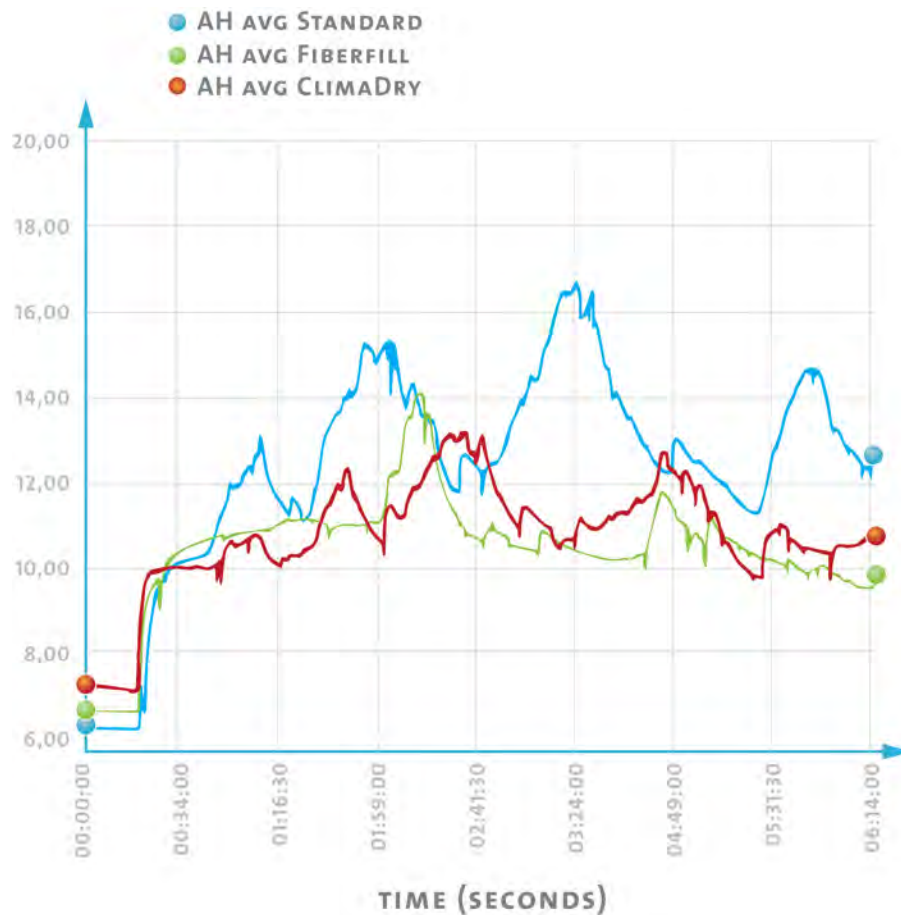
Results/What Did We Learn:

The human body regulates temperature naturally to maintain a perfect balance between heat gain and heat loss. When balance is affected due to an increase in heat, the body sweats to manage temperature. In this test, sweat was measured in terms of humidity.

Accumulated humidity that transpires between the body and the sleep area, such as with a duvet, expresses the body's intent to cool. However, excessive humidity in this well-insulated area reduces the effect of the body's intent to cool, therefore causing stress that disturbs sleep cycles. The consequences can include waking phases during sleep and severe skin tissue damage.

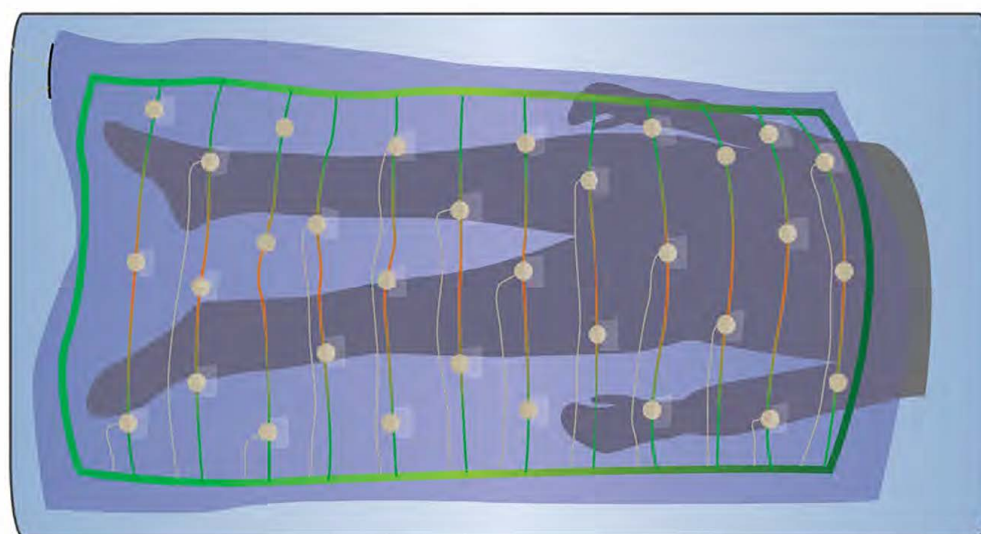
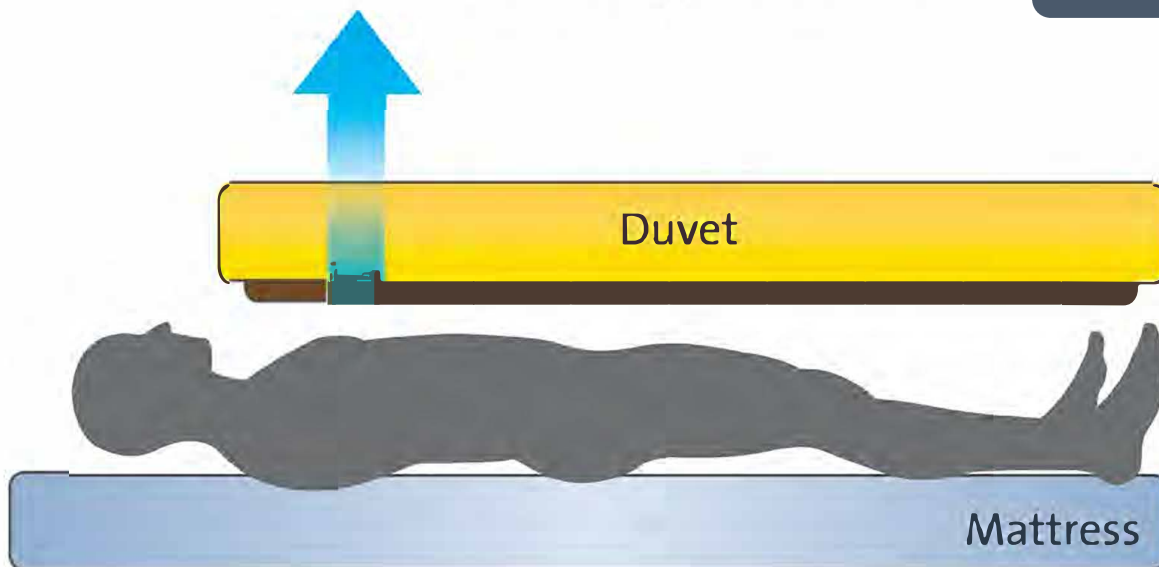
Outlast® thermo-technology materials yielded lower humidity and temperatures than the control materials. These improved microclimates, due to the use of Outlast® thermo-technology, produced better quality and deeper sleep than the control material. The control material caused excessive body movement (tossing/turning) to alleviate increased temperature and humidity developed in an environment using the control material.

With the help of THG Sleep View technology, researchers determined that individual comfort is considerably affected by the microclimate around the body during sleep. Increased humidity that develops in a closed environment created discomfort and caused stress for the test subjects. The use of Outlast® thermo-technology in bedding, such as duvets, can help mitigate the build up of humidity for increased comfort.





THG SleepView (45 + 1 sensors)



SleepView (70 x 140 cm, 45 + 1 sensors)