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FINLAND'S PRIORITIES IN SCIENCE POLICY

HANNA KOSONEN, MINISTER OF SCIENCE
AND CULTURE, FINLAND, DETAILS FINLAND'S
PRIORITIES IN SCIENCE POLICY

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Featured eBook

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Sleep is the best medicine: The repair programme that strengthens resilience

In this article, Dr Hans-Günter Weeß explains the connection between sleep, mental health and strengthening resilience

What does sleep have to do with mental health and resilience? How does the “most important third” of our life affect not only the immune system of our body but also that of our mind and soul?

Dr Hans-Günter Weeß has a degree in psychology and in Germany he is an absolute expert in sleep research. He is the head of the interdisciplinary sleep centre at Pfalzkrlinikum, Klingenstein.

“People with chronic sleep disorders have more than double the risk of developing depressions than people with a healthy sleep. The probability of developing anxiety disorders and addictions is also higher.”

Sleep is a highly active process. Sleeping people consume only slightly less energy than people who are awake. Recent sleep research clearly shows that sleep is a human being’s most important regeneration and repair programme. Nevertheless, more than 80% of the Germans use an alarm to get up in the morning and terminate their most important regeneration programme prematurely before it has fulfilled all its tasks. Human beings are the only beings on our planet who shorten sleep artificially and do not sleep in.



Sleep supports regeneration and learning processes

Sleep has irreplaceable functions for the human body and a well-balanced psyche: for instance, it strengthens the immune system.

Several studies have shown that in cases of enough healthy sleep, natural defence cells are built in a larger quantity and it is easier to fight bacteria and viruses. One night without sleep, for example, already leads to a reduction of the function of T-cells (T-lymphocytes or for short T-cells form a group of white blood cells helping the immune defence), which search infected cells and kill them. In some studies, human beings were given cold viruses and a

connection between the duration of sleep and the onset of a cold was revealed. Shorter sleep was associated with an increased probability of catching a cold.

During deep sleep the hypophysis releases growth hormone. It has growth and metabolism-enhancing effects. Growth hormone mainly works by activating growth factors on muscles, liver, bones and on the cells of the fatty tissue. It is responsible for energy storage processes at the cellular level and, thus, a key element of physical and mental regeneration.

Sleep is also a decisive factor for the formation of the memory. During

sleep the information newly acquired over the day is transferred from the short-term and working memory into the long-term memory and unnecessary information is rejected. For this reason, sleep experts advise us to take a regular afternoon nap of 10 up to a maximum of 20 minutes, especially for active learners but basically to ensure a healthy and long life. Studies demonstrate that a short nap between learning phases helps memorize factual information more easily.

Sleep is important for the mental well-being

Sleep does not only help people who are learning, but also regulates emotions. The advice to “sleep on it for a night” is legitimate, as even in case of difficult emotional situations information that is less important for the cause is filtered out of the memory during sleep. The next morning, we can simply think and judge more clearly. A lack of sleep, however, makes you more reckless and more willing to take risks and leads to more errors in case of complex decision processes. That puts a completely different perspective on certain decisions made in politics and business after long night sessions.

People with chronic sleep disorders have more than double the risk of developing depressions than people with a healthy sleep. The probability of developing anxiety disorders and addictions is also higher.

The importance of a healthy sleep is already revealed in early childhood

and adolescence. Children and teens who sleep well and sufficiently are more stable regarding their ability to regulate emotions and more balanced when dealing with other people. In turn, young people who sleep badly all the time tend to show rather dissociated, excited and impulsive behaviour and an impeded social development. Each hour of sleep deprivation heightens the risk of leading an unhealthy lifestyle with insufficient physical activity and weight gain, as well as increased consumption of fast food, nicotine and caffeine. Even with one hour of sleep less than preset by our genes the probability of overweight increases by 23%.

Sleep protects against age-related diseases

During sleep, waste products generated by neurons in the brain over the day, so-called amyloid plaques, are degraded again so that the human brain maintains its functionality. For this reason, enough sleep enables people to grow old successfully while enjoying good health and reduces the risk of age-related diseases, such as dementia and Parkinson’s disease.

Sleep makes us alert and productive. Often, we only realise how important it is when we do not get enough sleep. Depending on the study, up to 43% of the Germans feel “quite often”, “mostly” or “always tired” during the day and not well rested (DAK health report 2017). The consequences of sleep deprivation on the psychosocial level of performance, however, are not always apparent, but they can

have disastrous consequences because sleep deprivation, like alcohol, slows down the reaction time. Lethal traffic accidents on German roads are twice as often a result of lack of sleep than of alcohol consumption.

“Recent sleep research clearly shows that sleep is a human being’s most important regeneration and repair programme.”

Consequently, whoever sleeps sufficiently and well is not only physically and mentally fit but also has a better mental balance and resilience. Vice versa physical and mental well-being results in a more relaxing sleep. It constitutes a cycle that provides many reasons to attach more importance to sleep and to sleep soundly again.



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