

*Balance your  
screen time  
at night*

In collaboration with  
UNIVERSITY OF  
COPENHAGEN



Danica Pension



## Collaboration between the University of Copenhagen and Danica Pension

Naja Hulvej Rod is a professor at the University of Copenhagen, and she studies the health consequences of stress, sleep problems and social factors. In her research, Naja focuses particularly on how smartphones and tablets affect our sleep and what long-term consequences this can have.

In this booklet, Danica Pension and Naja will share the findings of these studies and show you what you can do to improve the quality of your sleep.

*Your bedtime  
routine affects  
your energy level  
tomorrow*



Your sleep impacts your decisions, actions and mood during your waking hours. But what does this mean, exactly?

If you do not sleep enough or if your sleep is interrupted, it affects your mood, responsiveness, concentration, performance, your memory and your ability to

make decisions. Your hunger and satiety hormones are also negatively affected when you do not get enough sleep, and you will often eat more - and also more sweet and unhealthy foods. In other words, a good, productive and balanced daily life begins when your head hits the pillow and you close your eyes at night.

# Screens affect your brain

Recent studies show that more than 40% of all Danes suffer from sleep problems to a smaller or larger degree. This has both health and socio-economic consequences. Most of us are able to fall asleep within minutes, but one reason that this is not always the case is that many of us use the bedroom for other purposes than those intended.

As a rule of thumb, the bedroom should be used for sleep and intimacy only. It should not be used as a TV lounge, an office or for other purposes.

These days, almost everyone has a smartphone, which we carry everywhere – and often also to bed. As a result, modern technology in the shape of computer, tablet and smartphone screens

increasingly plays a part in unhealthy sleep patterns. Sleep is disturbed by the sound of notifications and by the blue LED screen light.

The screen light reduces the release of the sleep-inducing hormone melatonin. Melatonin is naturally released in our brain in the evening when night falls, but if we are looking at a screen after dark, the brain is tricked into thinking it is still daytime. This reduces the release of melatonin, disturbing the body's natural clock, which can have severe health consequences.

**40%**

of all Danes suffer sleep problems to a smaller or larger degree.

Source: The National Health Profile, 2017



## Are you getting enough sleep?

To function optimally, most adults need 7-8 hours' sleep. Generally speaking, small children need 14-17 hours of sleep per day, and schoolchildren and young adults a little less.

### Is it normal to wake up during the night?

Most of us wake up a number of times at night without registering it. When it comes to registered awakenings, most people experience two to three per night, but the majority quickly fall asleep again. If you find that you are unable to fall asleep within 30 minutes over a long period of time, you should contact your doctor. Prolonged sleep disturbance may be caused by illness.

18% of participants in the SmartSleep Experiment\* state that they have checked their smartphone every night, almost every night or a few nights a week in the past three months. Also, 55% use their smartphone or tablet just before going to sleep.

*\*SmartSleep is a University of Copenhagen research project studying how smartphones affect and disturb our sleep. Another part of the research programme is to study the long-term health consequences of the use of smartphones during the night.*

# *Potential consequences of prolonged sleep problems*

## **1: Reduced brain activity**

Sleep cleans the brain of toxins, and without regular sleep these accumulate and begin to break down brain cells.

## **2: Mood**

You become more emotional, have a shorter fuse and find it harder to stay focused.

## **3: Mistakes and accidents**

Sleep deprivation affects your ability to focus, your sense of balance and your coordination. This increases the risk of accidents and mistakes.

## **4: Depression**

Long-term effects of sleep deprivation include anxiety and depression.



### **5: Immune system**

Sleep strengthens your immune system's defence against e.g. bacteria and viruses.

### **6: Weight gain**

Sleep deficiency increases your appetite as the production of the hormone cortisol increases and the production of the hormone leptin, which tells your brain when you are full, falls.

### **7: Higher risk of type 2 diabetes**

Sleep deprivation makes your body release higher levels of insulin, and this boosts the accumulation and storing of fat. This increases the risk of type 2 diabetes.

### **8: Stress**

Stress and sleep deprivation – what is cause and what is effect? Whatever the case, stress and sleep deprivation are inextricably linked. Your nervous system is impaired and the level of stress hormones rises.

### **9: Pain**

Existing pain is worsened. Sleep restores the body and repairs the wear you expose it to – both your muscles and your brain.



# *How to balance your screen time and protect your sleep*

The best strategy to improve your sleep in this digital age is to introduce some sleep rituals and to make simple changes to your sleep environment. Even small changes may have a surprisingly strong effect on the quality of your sleep. Remember that prioritising a good night's sleep is beneficial to your health, your looks and your intelligence.

Sleep problems can have many causes, and digital devices are not necessarily the only culprit. Parents of small children often have their sleep disrupted, and while this may be difficult to cope with, it is quite natural.

Sleep problems may be so severe that they require treatment with e.g. sleep medication or sleep therapy. Sleep medication is not a long-term solution, however. The so-called benzodiazepines - the type of sleep medication that has been on the market the longest - are addictive, and Danish researchers have recently demonstrated a link between the use of sleep medication and elevated mortality. Sleep therapy treatment has proven at least as effective as sleep medication. It usually combines various therapeutic techniques and lifestyle advice.

# *5 tips to protect your sleep*

## **Ban your smartphone from the bedroom and get an alarm clock**

With an alarm clock, you will not be disturbed unnecessarily during the night or be tempted to check your phone if you wake up.

## **Try to go to bed at the same time every night**

Get up and go to bed at the same time every day - including the weekend. This helps you balance your body clock and accustoms your body to feeling tired at the same time every night.

## **Avoid non-sleep-related activities in the bedroom**

It is a bad idea to work or answer e-mails in bed. The activation of your brain com-

bined with the artificial screen light can prevent you from falling asleep. The bed should only be used for sleep - with the exception of sex, of course.

## **Be physically active during the day**

When we are physically active, it helps improve the quality of our sleep. However, vigorous physical activity just before bedtime does not facilitate sleep.

## **Make sure your bedroom is dark and not too hot**

Investing in blackout curtains and ensuring a cool temperature are a very good idea. The darker your surroundings are when you go to sleep, the deeper your sleep will be.



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*If these tips do not help you within three to four weeks, you should see a doctor. Contact Danica Healthcare on +45 70 25 02 03 to learn about your options of referral to relevant treatment.*

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Sources:

Vidensråd for forebyggelse, søvn og sundhed, 2017

Why we sleep, Matthew Walker, 2017

<https://www.sleep.org/>

The SmartSleep Experiment, Professor Naja Hulvej Rod, 2019