A long sleep duration can be harmful for health

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Two studies from recently published were designed to investigate the effect of sleep duration on health. And both of them carry out bad news for those who like to sleep long.

Note

This article was exposed to the machine translation

Background

Sleep is an integral component of a large part of everyone's life. Therefore it is not surprising that its quality and duration can influence health. Usually, the phrase "adverse effects" associated with insufficient quality and duration of sleep. Indeed, such studies were carried out and confirmed the negative consequences of limited / deprived sleep on animal models and of its short duration in epidemiological studies.

In particular, experiments on animals have shown that even brief sleep restriction leads to a significant increase in cortisol levels and activity of the sympathetic nervous system. It means that the body interprets these restriction as a lot of stress with the respective potential effects on the body after prolonged exposure. And according to the epidemiological studies short sleep duration (≤6 h) increases the relative risk of metabolic syndrome by 74% and hypertriglyceridemia by 82%. In addition, every additional hour of sleep restriction increases the risk of coronary artery calcification by 33%.

However, the impact of long sleep duration on health is not studied well. Although percentage of people who sleep more than 9 hours a day is quite large and, for example, in Australia is near 33% of the total population, in Finland - 38%, Germany - 40%, Netherlands - 25.7%, US - 38%.

Last month were published two studies which evaluated the impact of long sleep duration/ The first provided the analysis its effects on mortality and morbidity, and the second - on the metabolic health.

The duration of sleep and most common diseases

First study was conducted by scientists from Nihon University Medical School (Nihon University), Japan. This work had a design of systematic review and meta-analysis of observational studies. A total of 3580 articles reviewed, of which were selected for further analysis 95 most relevant and well-designed studies.

One of the main problems in the analysis was that in various studies normal sleep duration was interpreted in different ways. Usually, it ranged from 6 to 8.9 hours a day or a night. That is, half of the studies were not taken into account the daily sleep. Accordingly, the definition of long sleep duration varied from ≥7 to ≥10 hours per day or night.
First, scientists analyzed in the impact of sleep duration on risk of premature death, diabetes, hypertension, cardiovascular disease, stroke, coronary disease and obesity. The main results are presented in Table 1. In accordance with these data sleep duration > 9 hours a day significantly increased relative risk (ie risk, compared with those who slept less) on mortality (34%), diabetes (33%), cardiovascular diseases in general (21%), stroke (36%), coronary disease (23%) and obesity (8%) and did not affect the risk on hypertension.

<table>
<thead>
<tr>
<th>Health indicator</th>
<th>Risk ratio (95% confident interval)</th>
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<tbody>
<tr>
<td>Mortality</td>
<td>1.34 (1.24-1.44)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.33 (1.09-1.63)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.00 (0.95-1.06)</td>
</tr>
<tr>
<td>Cardiovascular diseases</td>
<td>1.21 (1.09-1.34)</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.36 (1.11-1.67)</td>
</tr>
<tr>
<td>Coronary diseases</td>
<td>1.23 (1.03-1.46)</td>
</tr>
<tr>
<td>Obesity</td>
<td>1.08 (1.02-1.15)</td>
</tr>
</tbody>
</table>

Table 1. Effect of overtime on the duration of sleep the risk of various diseases. * The above analysis takes into account only those studies where long sleep duration was defined as more than 9 hours of sleep per day.

**Sleep duration and metabolic health**

Second study was conducted by the scientists from University of Leeds, United Kingdom. The study design was observational and included an analysis of data from the «National Diet and Nutrition Survey Rolling Programme» - UK’s special program on research how diet influences health, where, among other things, were collected data on the sleep duration. The total sample was consisted of 1692 persons.

According to data received sleep duration was not associated in any way with changes in dietary habits, such as total energy intake, but effected on body mass index and waist circumflex. Thus, each additional hour of sleep above average (7.2 hours / day) was associated with an increase in BMI by 0.46 kg / m^2 and waist size by 0.9 cm.

Association between other indicators of metabolic health (C-reactive protein, glycated hemoglobin, etc.) and duration of sleep was not established.

Note that both studies are freely available. Link to full text can be found in the reference list.

**References**