



SLEEP

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Adequate **sleep** is essential for maintaining a good **physical** and **mental** health. It plays an essential role in our well-being, and accounts for approximately **1/3 of a person's life**. Sleep is defined as a **decrease in consciousness** between two periods of wakefulness, characterized by a loss of alertness, a decrease in muscle tone, a partial sensory perception and a reduction of the body's sugars consumption in preparation for a new day.



Sleep requirements change with age. On average, it is recommended that **adults** sleep between **7h and 8h30min** a night, and **older adults** between **6h and 7 h**.

The importance of sleep

Sleep is the ultimate form of **rest**. It allows the body to recover both physically and mentally, and influences many mechanisms in the body, such as the immune system and energy balance (balance between calorie intake and expenditure).

A lack of sleep can have a many deleterious consequences on the body, including:

- **Fatigue**
- **Concentration difficulties**
- **↑ irritability and emotional fragility**
- **Changes in eating behavior**
 - Changes in the concentration of hormones involved in food intake: leptin, ghrelin, etc.
 - ↑ sensitivity to food reward
- **Headaches**
- **↑ stress, anxiety and depression**
- **↓ immunity / ↑ risk of infections:** less than 7 hours sleep multiplies by 4 the risk of colds
- **Memory problems:** poor sleep (quantity and quality) is associated with higher levels of beta-amyloids, and high levels of beta-amyloids are associated with Alzheimer's disease
- **↑ risk of cardiovascular disease and hypertension**
- **↑ risk of metabolic disorders such as diabetes:** a sleep duration of less than 7 h could be associated with an increased risk of diabetes





Sleep contributes to many mechanisms in the body, including:

- Mood and stress regulation
- Hormone production (growth, eating behavior, etc.)
- Development of learning and memory mechanisms
- Maintaining the body temperature
- Immune defenses stimulation
- Maintaining alertness
- Toxins elimination
- Energy stocks replenishment (↓ basic energy expenditure)
- Energy mechanisms regulation (e.g. blood sugar levels)

What are sleep disorders?

The term "sleep disorder" covers over **80 different pathologies and manifestations**. Anyone can be prone to punctual sleep difficulties. When these difficulties multiply and affect daily tasks they are classified as **sleeping disorders**.



The international classification of sleep disorders distinguishes :

- **Insomnia**: poor nocturnal sleep, characterized essentially by difficulties in falling asleep, maintaining sleep and/or a feeling of non-restorative sleep.
- **Sleep apnea**: occurrence of an abnormal breathing patterns during sleep, characterized by reductions (hypopnea) or pauses (apnea) in breathing for brief periods while sleeping, leading to sleep disruption.
- **Hypersomnia**: excessive need for sleep and episodes of excessive sleepiness during the day, despite normal or high sleep duration.
- **Disorders of circadian sleep rhythm**: sleep schedule out of synch with the biological clock, i.e. no rhythm according to the cycle of light (day) and darkness (night).
- **Parasomnia**: confusional awakening (confusion or inappropriate behavior during the transition from sleep to awakening), sleepwalking, night terrors, nightmares, etc.
- **Secondary categories**: isolated symptoms such as snoring, somniloquy (sleep talking) and other sleep disorders.

Sleep, eating disorders and obesity



Approximately **57%** of people with an eating disorder have sleep disorders, such as difficulty falling asleep, parasomnia, hypersomnia and insomnia. Several studies have shown a correlation between reduced sleep quality and/or duration and **obesity**.

Shorter sleep duration has been associated with **increased daily calorie intake** and **energy density*** of foods consumed. Studies show that lack of sleep can lead to an **increase in brain activity** at the sight of energy-dense food (potato chips, cakes...) and to **hormonal disturbances**, which may justify the changes in eating behavior, including the increase in caloric intake. This increase in caloric intake could lead to weight gain, and is therefore a risk factor for obesity and hyperphagia (figure 1).

In addition to that **eating habits** can be affected by **the time we fall asleep**: for example, we are more likely to snack after dinner and skip breakfast if we fall asleep late. Moreover, a lack of sleep leads to increased **fatigue**, which can reduce **physical activity** and encourages a **sedentary lifestyle**, which constitutes also a risk factor for **obesity and eating disorders**.

Although sleep disorders can be a risk factor for obesity, studies suggest that, oppositely, **obesity can also be a risk factor for sleep disorders**. A 6-unit increase in body mass index is associated with a 4-fold increase in the risk of Sleep Apnea .

*Energy density: the quantity of energy or calories contained in a given weight (e.g. kcal/g) of food.

Figure 1: Potential risks associated with sleep deprivation



How to improve your sleep?

To improve your sleep, it's essential to adopt a good sleep hygiene.

Sleep hygiene tips :

- ✓ Identify your sleep needs: between **7 h and 9 h**
 - Have **regular** wake-up and bedtime **hours**
 - Exercise regularly, avoid exercising close to your bedtime (at least 1 hour before)
 - Create a **pleasant**, dark, fresh and calm sleeping **environment**
 - Adopt a **sleep routine** to teach your body, by setting up rituals, to recognize and prepare for bedtime. For example: open your window, close your shutters/curtains, get into your pyjamas, brush your teeth, refrain from using the bed for activities other than sleeping...
 - Use a **comfortable** mattress, pillow and bedding
 - Practice **relaxation/breathing** techniques before bedtime
- ✗ Avoid late afternoon/evening **naps** and long naps
 - Avoid **exposure to screen light** close to bedtime
 - Limit **caffeine** consumption in the afternoon and evening
 - Limit **alcohol** consumption
 - Avoid **heavy meals** and **foods rich in sugar and fat** in the evening



If you are suffering from a persistent sleep disorder that is affecting your daily life, we recommend that you seek **professional help**. To do so, first consult your **general practitioner**, who will assess the problem and, if necessary, refer you to a **sleep clinic** or another **healthcare professional**.

Conclusion

Sleep is essential for the proper functioning of the body. The best way to improve your sleep is to establish a good sleep hygiene and routine. If you are experiencing sleep problems, we **recommend that you make an appointment with your general practitioner**, who will be able to refer you to a qualified specialist if necessary.



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