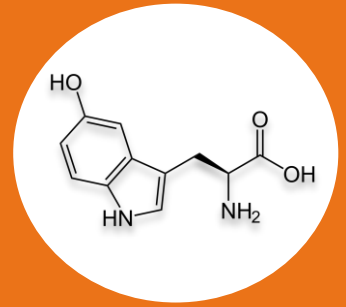
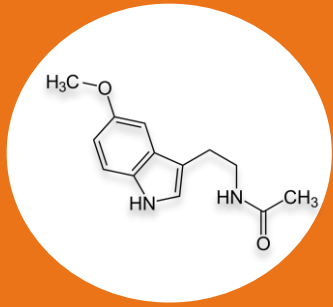


#Factsheet



Are you tired of not
sleeping well?



Why do we need to sleep?

Sleep allows to clean waste products that accumulate during daytime activities and excrete them in the urine.



Sleep helps improving your mood and increases your lifespan.



Sleep permits to develop new connections between nerve cells and to improve memory and thinking.



Sleep replenishes hormone and energy stores, depleted by daytime activities.

How many hours do you need to sleep?



Humans need to sleep between six and eight hours. People who become centenarians, proof that their health is better than average, sleep for a bit more than seven hours.

In the Ipsen Foundation's study (1990–2000), 80% of the 368 centenarians surveyed had a restoring sleep, according to their family. It is 4 in 5 centenarians.



More than seven hours of good quality sleep appears to be necessary to have a healthy long life.

What are the sleep disorders?

Sleep deprivation

Sleep deprivation, or sleep shortage is experienced when we cannot or do not allow ourselves a sufficient number of hours of sleep.

Poor quality sleep

Poor quality sleep includes difficulties in falling asleep or falling back to sleep when we wake up at night, superficial sleep, restless leg syndrome, non restorative sleep, snoring, or anything else that interrupts our sleep.

Delayed sleep phase syndrome

Delayed sleep phase syndrome is a sleep disorder that makes people fall asleep much later than the average person.



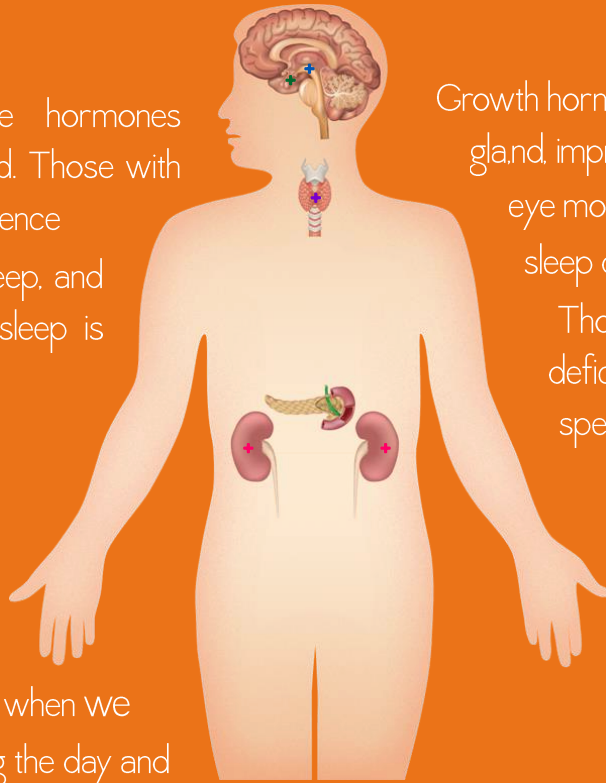
What are the hormone deficiencies and excesses that produce sleep disorders?

Pineal gland

Melatonin is one of the hormones produced by the pineal gland. Those with a melatonin deficiency experience great difficulties in falling asleep, and when they do sleep, their sleep is agitated and tense.

Thyroid

Thyroid hormones keep us slim and intelligent. In thyroid hormone deficiency, or hypothyroidism, we are tired in the morning, especially when we wake up, but feel better during the day and are at our best in evening.



Pituitary gland

Growth hormone, produced by the pituitary gland, improves the deep sleep and rapid eye movement stages, thereby making sleep deeper and with more dreams. Those of us with growth hormone deficiency suffer from too little time spent in the deep sleep and dream stage.

Adrenals

Cortisol, made from the adrenals, is a hormone that wakes us up and provides us with strong energy. A cortisol excess keeps us awake at night.

We feel agitated and have too much energy at the wrong time. Sleep is then hard to get and maintain.

What are the impacts of sleep disorders on your hormone levels and your mood?

The tiredness, irritability, and higher sensitivity to cold that we may experience after a too short or bad sleep are caused by the depletion of energy and by the appearance of **hormone deficiencies** that accompany sleep disorders.

Melatonin	Calms down anxiety and nervousness	Growth Hormone	Provides inner peace	Cortisol	Breaks down glycogen into glucose
Melatonin deficiency	Tenseness	Growth Hormone deficiency	Anxiety	Cortisol deficiency	Nervousness and anger

- + Depression is four times more frequent in people who sleep five hours or less.
- + Nicotine and alcohol dependence are twice as often found when sleep time is short.
- + The lower hormone levels of sleep-deprived adults may explain the higher risk of quarrelling and being selfish.

Which diseases are facilitated by a sleep disorder?



- + **Obesity:** According to the Belgian pioneer researcher Van Cauter (University of Chicago), sleep deprivation is a major cause of the obesity epidemic in the Western World. The hunger feeling after a bad night is produced by the imbalance between two hormones: leptin and ghrelin. This appetite is greater for sweet foods, which trigger the secretion of insulin, the hormone that makes us fat.

Studies are clear: five- to six-years-old children who sleep ten hours or less double their likelihood of being obese than children who sleep more; young adults who sleep less have about seven times the risk of being overweight.



- + **Diabetes:** Night owls often suffer from a degree of insulin resistance, a condition that may lead to diabetes. During the day, when insulin goes up, the sugar level goes down. In the evening, however, both sugar and insulin levels rise in the blood, a condition called insulin resistance. The inadequate high level of insulin in the presence of a high sugar level in the blood increases the likelihood of fat accumulation. This mechanism explains why our nutrition makes us fatter depending on the time we eat.

- + **Cancer:** A twofold higher risk of breast cancer has been found in women sleeping fewer than nine hours. Women who are predisposed to breast cancer should sleep more.

- + **Coronary heart disease:** People who sleep nine hours or more and people who sleep five hours or less have 40% increased risk of developing coronary heart disease, a disease in which the coronary arteries that bring blood to the heart become narrow by the appearance of atheroma plaques.



- + **Lifespan:** Higher risks of dying sooner are reported in both short and prolonged sleepers. Men who sleep fewer than six or seven hours double their risk of dying, seven to eight years sooner than those who sleep longer. However, women who sleep too long - nine hours or more - are 50% more likely of dying seven to eight years sooner.

Did you know that...

...snoring or « sleep apnea », is often caused by thyroid deficiency? Thyroid deficiency is a disease that accumulates waste products with a sticky mucous-like consistency (« mucopolysaccharides ») in the walls of the respiratory tract and thickens them. Thyroid therapy can decrease up to eight times the number of sleep apnea episodes in people with thyroid deficiency.

What can you do by yourself to sleep better?



Avoid any drinks and food that prevent you from sleeping well.

Calm down: Bedtime is not the time to discuss problems with your partner, to have challenging negotiations, or remind yourself of stressful events that occurred during the day.



Avoid eating the late at night: it is harder to fall asleep when you are still digesting. Go to bed three or more hours after supper.



Do some physical activity during the day, such as sports, to eliminate excessive tenseness.

How to stimulate the production of the sleep hormones?

- + **Increase melatonin levels:** sleep in a completely dark bedroom without any lights coming in from outside. Avoid also any electric wires near your bed: their electromagnetic fields reduce your melatonin production.
- + **Increase growth hormone levels:** avoid alcohol and caffeine as they reduce the levels of growth hormone.
- + **Increase sex hormones levels:** the consumption of protein-rich foods, such as meat, chicken and fish, and the intake of healthy fats, such as uncooked butter boiled in water, organic lard or bacon, and egg yolk, increase the levels of sex hormones.
- + **Increase the levels of the morning energy hormones – thyroid hormones and cortisol:** Eat fruits for breakfast or for a snack at 11.00 am or 3.00 pm.

Which nutrients that help us to sleep better?

Tryptophan and 5-hydroxytryptophan (5-HTP) are among the most efficient nutrients that help us sleeping better are. They are the precursors to the sleep hormone melatonin. The next table presents the hormones and herbs or micronutrients that may help you sleep better, with their indications, doses, and best time of intake. The most effective treatment is represented in bold letters.

Hormone and nutritional sleep treatments: indications, doses, and time of intake



Indication: Sleep disorder	Possible cause	Treatment	Daily doses	Time of intake	Therapy excess
Difficulties falling asleep and/or falling back asleep & Worries, anxiety at night	Melatonin deficit	Melatonin	Sublingual 0.1 to 0.5 mg	Before bedtime	Wake up after 4 hours with inability to fall back asleep before 2 hours, headaches in morning, prolonged sleep
		5-HTP	Oral 50 to 100 mg (from Griffonia or Safrane plant)	4 hours before bedtime	
		Tryptophan + cofactors	Oral 150 to 1000 mg/day	4 hours before bedtime	
	Growth hormone deficit	Growth hormone	Subcutaneous injections of 0.05 to 0.35 mg/day	Before bedtime	Swollen feet, hands
	Progesterone deficit	Progesterone	100 to 200 mg	Before bedtime (premenstrual phase)	Fatigue and/or dizziness in the morning
	Valerian	Several ingredients	400 to 900 mg	30 minutes to 2 hours before bedtime	Rarely: stomach-ache, apathy, mental dullness, or mild depression
Superficial, tensed, agitated sleep	Growth hormone deficit	Growth hormone	Subcutaneous injections of 0.05 to 0.35 mg/day	Before bedtime	Swollen feet, hands
	Melatonin deficit	Melatonin	Sublingual 0.1 to 0.5 mg	Before bedtime	See above
	Progesterone deficit (in men and women)	Progesterone	100 to 200 mg	Before bedtime (premenstrual phase)	Fatigue and/or dizziness in the morning
	Valerian	Several ingredients	400 to 900 mg	30 minutes to 2 hours before bedtime	Rarely: stomach-ache, apathy, mental dullness, or mild depression
Poor sleep in the second half of the night	Melatonin deficit	Tryptophan with cofactors	Oral 150 to 1000 mg/day tryptophan	4 hours before bedtime	See above: Melatonin excess
		5-HTP	Oral 50 to 100 mg	4 hours before bedtime	
	Valerian	Several ingredients	400 to 900 mg	30 minutes to 2 hours before bedtime	Rarely: stomach-ache, apathy, mental dullness, or mild depression
Delayed sleep phase syndrome	Melatonin deficit	Melatonin	Sublingual 0.1 to 0.5 mg	Before bedtime and not later than 11 PM	See above

Hormone and nutritional sleep treatments: indications, doses, and time of intake



Indication: Sleep disorder	Possible cause	Treatment	Daily doses	Time of intake	Therapy excess
Delayed sleep phase syndrome	Thyroid deficit	Preparation with both T3+T4 thyroid therapy	15 to 150 mg/day desiccated thyroid or 50/10 to 150/30 µg synthetic T3/T4	At wake up	Nervousness, palpitations, trembling fingers, etc.
	Cortisol deficit (in case of insufficient morning rise of cortisol to wake up)	Hydrocorti- <i>sone</i>	15 to 35 mg/day	At wake up and at lunch (½ of wake-up dose)	Swollen face, excess agitation, weight gain, etc.
Restless leg syndrome	Melatonin deficit	Melatonin	Sublingual 0.2 to 15 mg	Before bedtime	See above: Melatonin excess
	Magnesium deficit	Magnesium	Oral 0.5 to 20 mg/day*	2x/day: at wake up and before bedtime	Diarrhea
	Folic acid deficit	Folic acid	Oral 0.5 to 20 mg/day*		Neurological damage in case of vitamin B12 deficit, nausea, bitter taste in mouth
	Dopamine deficit	Tyrosine	500 to 2,000 mg/day		Stomach acidity, nausea
	Vitamin E deficit	Vitamin E	Oral 200 to 1,000 mg/day		Digestive discomfort, nausea, increased bleeding
	Iron deficit	Iron**	100 to 500 mg of iron complex (= 10 to 80 mg elemental iron)	After evening meal	Digestive troubles (constipation or abdominal pain)
	Progesterone deficit	Progesterone	100 to 200 mg before bedtime	Before bedtime (premenstrual phase)	Fatigue and/or dizziness in the morning
	Valerian	Several ingredients	400 to 900 mg	30 minutes to 2 hours before bedtime	Rarely: stomach-ache, apathy, mental dullness, or mild depression
	Caffeinated beverages	Stop caffeine			



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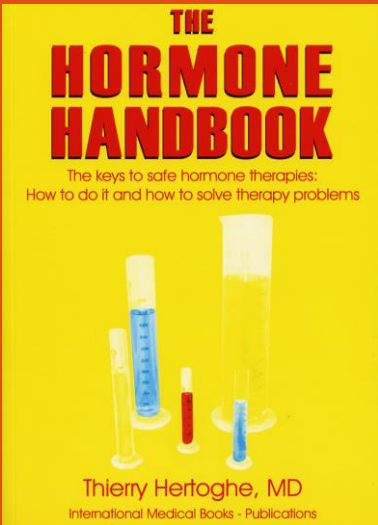
1. Stress effects on hormone levels
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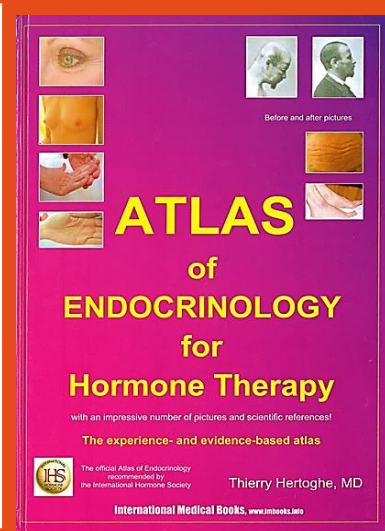
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