

# Introduction

Writing a book about sleep, to help our children sleep, is a passionate challenge. Sleep is one of the fundamental facets of life. Sleep is as important as being conscious, both consciousness and sleep are essential because they are inseparable in life.

This book is dedicated to those responsible for our youngest and most beloved children's sleep. The objective is to teach educators how and where to act to improve "normal" sleep. In this way, prevent worsening a bad habit and perpetuating what may become a serious disorder. Some disorders originate from inadequate conduct; others manifest during sleep and must be treated. The majority of these disorders must be consulted on by your family physician, pediatrician or sleep specialist. Reading this book will serve to help parents and guardians make clear and easy distinctions between one situation and another; helping the dialog with physicians to benefit our children.

Finding just measures for difficult things are difficult. Our skill to educate doesn't solely

depend on what we've learned from our parents and teachers during infancy. Our most treasured memories, even the things we learned not to repeat, modified our ability to educate based on our experiences. To educate is, learned thanks for the first things we learned from infancy. The knowledge we're going to acquire through trial and error, is like a teacher.

Our behavior isn't stable, and varies over time. The beliefs we share before we have to educate a child for the first time; "I couldn't...", "I wasn't allowed to...", "When I have kids I'm not going to..." are often thought or said when we visit someone with children. This radically changes when we are faced with the reality and discover how difficult is to educate children.

To reach this just measure isn't easy: any unyielding sin with our consent on how we handle our own child; to know how to establish limits; demand without asking for more than they are capable of their age and a long list of others that dizzily reflect on the parents. All we are learning about our baby's development, physical and psychological, helps us in our task. This isn't because we can teach sleep, teething or breastfeeding but because we know we can demand what the child needs and hope to learn in each stage of development. We will calmly face our child's education without committing errors. To know normal behavior (statistically speaking)

and know how to distinguish the symptoms, which indicate how we must proceed, not forsaking discipline before guaranteed protection.

These pages are dedicated to the parents, grandparents and all who are in charge of children. Far from being a book of pediatric sleep medicine, we are just trying to teach how to prevent and correct sleep disorders, joining knowledge and the wonderful tool, which is common sense. Any criticism by parents, teachers, lecturers or doctors, which help us improve, will always be well received.

# Sleep



## Sleep

Not so long ago it was believed that sleep was a steady, quiet, simple and passive state. With the invention of the EEG in the 1920s, it was found that during sleep, changes were registered in the EEG layout recording translating brain activity into potentials recorded by a polygraph. From that discovery numerous research on sleep was conducted, however until the 1950s it was not considered a medical specialty.

**Today sleep is considered an active and complex state. It is an innate form of behavior characterized by minimal physical activity and almost total disconnection to the outside world removing the individual from the environment.** A reversible disconnect mode, regulated by circadian rhythms (24-hour cycle).

**Sleep has a restorative function** as this helps to conserve energy. It is a period of physiological and psychological restoration and is beneficial for mental activity. We know that, unlike fatigue due to physical activity, which we recover after rest, recuperation of mental activity is sleep. All the functions of sleep are not known, but what is clear is that it is a necessity. When we lack sleep

we do not feel well. However, not all people need to sleep the same amount of hours. There are adults who only need to sleep three hours a day without apparent adverse health effects, and we all know adults who need ten hours to feel fully rested.

## What should we know about sleep?

The social changes imposed in today's society cause behavioral changes that cannot always meet the needs of our body. We have already seen that sleep is not a way to disconnect or a comfortable way to disrupt the daily routine but a way to rejuvenate our daily mental and physical energy. For this reason **we must be aware of the importance of our sleep. The time taken away from rest to work or spend a few hours in leisure means exposing our bodies to unprepared stress. If this becomes a common practice it can impose certain risks to our health.** Poor sleep quality has all kinds of implications. It affects our mood; it may cause a negative impact on our health and increases the risk of accidents.

**There are over 80 sleep disorders** that deplete the quality of sleep and reduce consciousness resulting in associated medical disorders. In this book we will only refer to those that occur in children, helping parents to differentiate between behavioral problems and symptoms that facilitate a specialist's consultation. Sleep disorders can be

difficult in the initiation and/or the maintenance of regular sleep/wake cycles. Our sleep can also be altered by parasomnias (somnambulism, bruxism, night terrors, etc.).

## Our sleep is also important

The things we do every day become routine after dealing with them from an ignorant standpoint so we judge them as normal or not, depending on our personal experience. **Our expectations depend on our experience and learning.** If we knew about sleep and its mechanisms, our perception of what is normal would improve and we wouldn't be influenced by society. **The myths that have been created around sleep often make it difficult to objectively assess our own health.** We can only know our daytime symptoms due to the consequences of a poor night's sleep.

We've all heard of someone criticized for being lazy because he spends all day sleeping or praised for working half the night. Likewise, we all heard of someone sleeping soundly. All adults have, at some time, envied children's sleep, which can win out against the attack of any noise. But what do we know about sleep? What can we expect from it? How many hours should we sleep?

**Clinical experience suggests that the perception of sleep and its quality improves when we know what we can expect from it. How could we improve it, what to avoid or how popular beliefs**

**are wrong.** Hence we discover when something is not right and are aware that you don't have to learn to live with insomnia (or its opposite, hypersomnolence) or with other sleep disorder symptoms, thus knowing when to consult a specialist.

There are three fundamental pillars of life: food, water, sex and sleep. However sleep specialists generally agree that this shouldn't be the order of our three basic needs. So let us write them again: sleep, food, water, and sex, issues which medical experts do not always ask patients.

The reason we reverse the order is; people can choose to stop eating or drinking until they die or avoid sexual intercourse, but the **need for sleep is beyond our control. Even if we choose not to sleep we will reach a point when our brains go through a phase of sleep no matter what we do to prevent it.**

In 1965 Stanford University conducted a study on sleep deprivation. Randy Gardner, a 17 year old student, managed to stay awake 264 hours and 12 minutes. When they did let him sleep, he slept for 14 hours and 40 minutes. The next night he slept only eight hours and his sleep normalized. Earlier studies involving animals showed that older individuals could not sustain extended consciousness; however this may not be a problem for young people.

These studies provided information about the existence of so-called microsleeps; momentary lapses of sleep that occur during prolonged consciousness of which we are not aware. **The entrance into sleep is not gradual. It occurs at a given time.** Microsleeps, to which we are referring, appear even if we do not want to sleep however tired you may be. **Although the amount of sleep varies depending on age and other personal characteristics, most adults require about eight hours of good quality sleep each night. This changes during one's lifetime** since sleep is not static or uniform any one night. **Sleep quality does not depend on the number of hours slept but its effectiveness; that is, how rejuvenating it is, if all stages appear and are not fractioned, etc.** **Our sleep architecture follows a stable pattern, although this is modified throughout life as our requirements change. It alternates between REM and NREM periods throughout sleep and the durations vary as well.**

The discovery of the two types of sleep occurred almost accidentally at the University of Chicago in 1952. Dr. Kleitman had one of his students, Eugene Aserinsky; monitor the slow movement of the eyes through closed eyelids during sleep using a polygraph. The student soon discovered a type of eye movement that was very different and very fast. **REM, the term means (Rapid Eye Movement).** When these movements are not present it is called **NREM (Non Rapid**

**Eye Movement).** The two types of sleep (REM and NREM) are important for the quality and effectiveness of sleep.

## NREM

NREM occupies 75% of nighttime sleep in a healthy adult. When we fall asleep we enter stage 1 NREM sleep. There are four stages:

- **Stage 1.** A light sleep in transition from consciousness to sleep. If you wake a person who is in stage 1, often they will deny having been asleep, but certainly recognize having had strange thoughts.
- **Stage 2.** Sleep is established. The body temperature drops, breathing and heart rate are regular.
- **Stages 3 and 4.** Correspond to more restful sleep. Growth hormones are secreted. This type of sleep declines as we age.

## REM

This sleep phase corresponds to 25% of the total time. The first REM usually appears 90 minutes after sleep begins. It is necessary for good brain activity and certain cognitive and memory processes depend on it. The body is still and relaxed. Breathing and pulse become irregular. This phase of sleep is one in which if we are

awakened, we can remember complex dreams and have structured arguments. Spontaneous erections occur also.

## Sleep needs throughout life

Sleep needs throughout life modify, although there are personal variations according to age:

Age	Hours of Sleep
Newborns/infants from 0 to 3	16 to 18
Children 4 to 12 months	14 to 16
Children 1 to 2 years	13 to 14
Children 2 to 4 years	12 to 13
Children 3 to 5 years	11 to 13
Children 6 to 12 years	10 to 11
Children 12 to 18 years	9 to 9½
Adults	7 to 9

As we age it may seem as if we sleep fewer hours in a row during the night. It is believed that when we are older it is normal to take catnaps during the day, which balances total sleep time hours. As we have explained, **sleep needs are individual and depend on many factors.** Human sleep physiology **does not vary from one race to another, but our habits can modify its architecture;** for example, changes due to culture or climate.

People, who are in the habit of napping, have the same amount of total sleep time, but it is split into