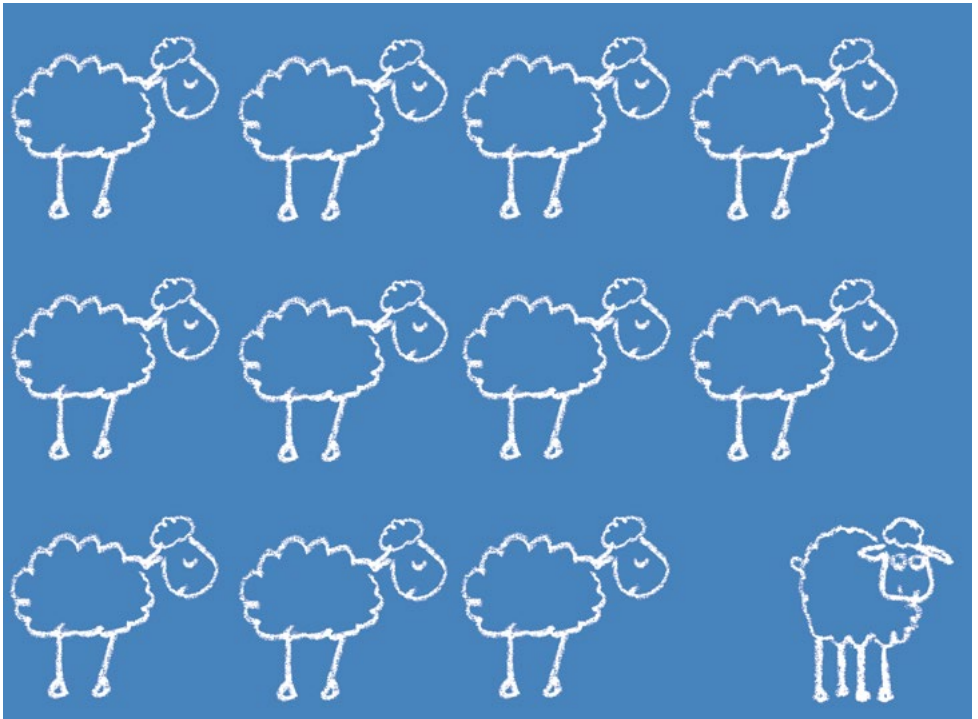


INFORMATION FOR  
PARENTS

# Sleep Disorders in Children

A Guide for Parents



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## **Introduction**

Sleep disorders in children are widespread. 15 to 30% of all preschoolers have problems falling asleep or staying asleep (Jenni et al., 2005).

In most cases sleep problems are transitory without being pathological. Such behavioural disorders are not harmful for the child, but can be very stressful for the family. They don't need special medical clarification, but rather an explanatory consultation by a health care professional. The occurrence of symptoms such as nocturnal breathing disorders that require medical treatment are much less frequent.

## **Normal sleep in children**

Knowledge of the normal development of sleep in children is helpful for parents so that they can better understand their child's sleep behaviour and adequately react when sleep is disturbed.

Children are not just little grown-ups, who sleep a little longer but otherwise are no different in their sleep behaviour. The maturation of the brain and social development lead to age-specific characteristics of children's sleep.

## **Basics of sleep**

Sleep is divided into two phases, REM and Non-REM sleep. In REM (Rapid Eye Movement) sleep you can see the rapid eye movements behind the closed lids. Breathing is irregular. The muscles are relaxed. Dreams are more commonly remembered in this sleep phase. In Non-REM sleep the eyes do not move. Breathing is regular. REM and Non-REM sleep are differentiated by the pattern of electrical activity of the brain, muscles, and eyes. Both stages alternate cyclically during the night. This differentiated sleep structure develops during the first year of life and reflects brain maturation processes. In infants, REM sleep is also called active sleep. Babies move around a lot and are easier to wake up. In contrast, they are quite still in Non-REM sleep (quiet sleep).

## **Development of the sleep-wake rhythm**

In the first weeks of life, sleep and wakefulness in the newborn is distributed irregularly across day and night. The infant has not yet adapted its rhythm to the light-dark environment, but continues, to a certain

extent, life in the womb. In the first months of life, sleep and wake phases become redistributed to attain a sleep period of 6 or more hours at night (Jenni et al, 2006).

Most children have a strong urge for regularity. Often they demand breastfeeding or the bottle at the same times each day. But there are children who have difficulties in developing a rhythm of their own. These children need a regular daily routine given by the parents. In addition to the influence of light, this social rhythm (activity, rest, eating) helps the child set his internal clock.

## Individual sleep needs

In the first year of life, the duration of nocturnal sleep increases at the cost of daytime sleep, while slowly decreasing again during the second to fifth year. There are large individual differences in the amount of sleep both children and adults need. The difference can be up to 6 hours between children of the same age. (Figure 1).

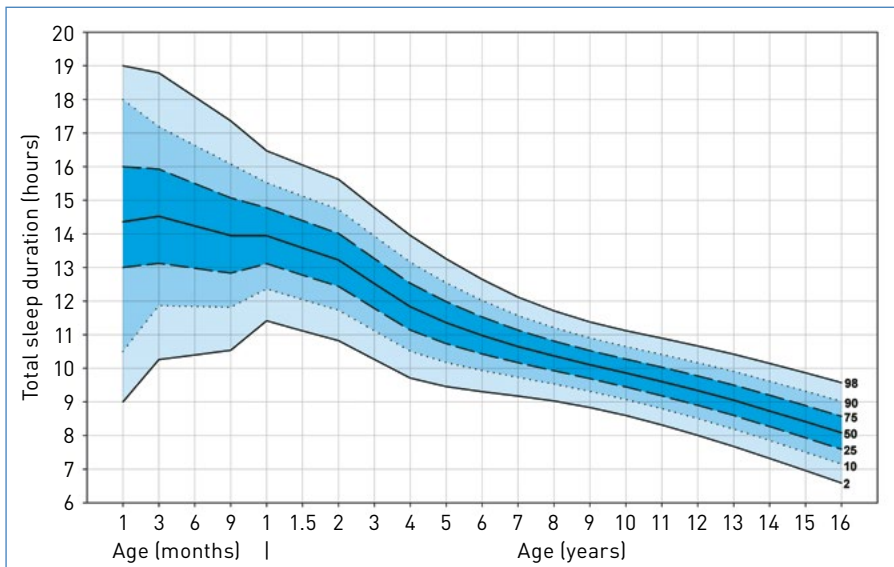


Figure 1: Total sleep duration in the first years of life (Iglowstein et al., 2003)

In the individual child, sleep duration is fairly stable. Children who sleep little in the first years of life tend to do this in the following years as well (Jenni et al., 2007). A child can only sleep as much as his body needs. If the child spends more time in bed than is needed for sleep, this may lead to age-dependent difficulties in falling or staying asleep.

The individual sleep need of a child can be found out by keeping a sleep log for 10-14 days (see example on the last page), and the length of time in bed adjusted to fit the sleep need. How often and how long an individual child should sleep during the day depends on the child and the parents' needs. It is important that the day-time sleep of a child is sufficient for it to be happy when awake and interested in its environment. Switching to a new sleep plan requires a period of 7 to 14 days. In order that the child adheres to the new bed times, the parents must consistently maintain the regimen.

## **Meals at night**

In the first weeks of life breastfeeding is surely the form of nutrition that is best for the child. During the first 6 months of life children adapt their sleep-wake behaviour to the day-night cycle. They begin to sleep longer and in parallel their feeding shifts more and more into the day. After 6 months a healthy, normally developed child is no longer reliant on the nightly food intake. However, the child has possibly got used to breastfeeding or a bottle at night – it has developed a learned appetite behaviour which leads to regular awakening. In breastfed children it is often difficult for the mother to change this nocturnal behaviour. She should stretch the breastfeeding intervals during the day to 4 – 5 hours, so that the child learns to drink larger amounts at one time in order to cover its caloric needs during the day. For bottle-fed children a step-by-step approach is recommended, to dilute and reduce the night portion.

## **Sleeping rituals and sleep aids**

A regular bedtime ritual helps the child fall asleep and stay asleep. Already in the first year of life they need a fairly stable pattern to which they can orient. An important role is played by regular procedures and rituals that signal to the child what comes next. Events become predictable and convey thereby security and feelings of safety. The pre-sleep ritual should lead the child to fall sleep. Falling asleep should occur as independently as possible, at most with the help of a dummy or pacifier. Babies and toddlers wake several times at night. That is normal sleep behaviour. How the child falls asleep in the evening determines its behaviour when waking up at night. A child that has learned to fall asleep by itself in the evening will find sleep again at night by itself. When parents lie down with their children, stroke them or sing them to sleep, the ritual turns into a sleeping aid. The child connects falling asleep with the proximity of the parents, with being held and cradled. Since it can only fall asleep at night with the help of parents, it demands their presence. This can be very tiring for parents.

Sleeping habits that have become established require a lot of patience and consistency to change them. Advice and support from a health care professional, maternal counselor or psychologist can be helpful.

## **Sleeping position and sleeping comfort in infancy**

The number of children who die from Sudden Infant Death Syndrome (SIDS) has declined in recent years. The decisive measures for risk reduction in SIDS are to sleep on the back, on a firm mattress, in a smoke-free environment (already during pregnancy), avoiding overheating (optimal nighttime room temperature of 18 °C/64°F), breastfeeding in the 1st year of life and using a pacifier as required.

The safest place for an infant to sleep is its own cot in the parents' bedroom. A sensible alternative are cots that can be fixed to the parental bed. Sleeping together in the parental bed places demands on the parents. The infant needs enough space to sleep, the bed accordingly must be large enough and the mattress should be firm. The use of pillows, sheepskins or similar should be avoided. If the parents are smokers, or have taken

in alcohol, medication or drugs, are themselves ill or exhausted, then bed sharing increases the risk of SIDS and should be avoided.

### The child in the parents' bed

During the second year of life many children suddenly don't want to sleep alone any more (Figure 2). There are different reasons for this. If the parents don't feel disturbed there is nothing against the family bed. There is no reason to assume that such sleep behaviour is to the detriment of the child. If the parents feel disturbed by the presence of a child or have educational concerns, a mattress next to the parents' bed can be helpful or the siblings sleep together.

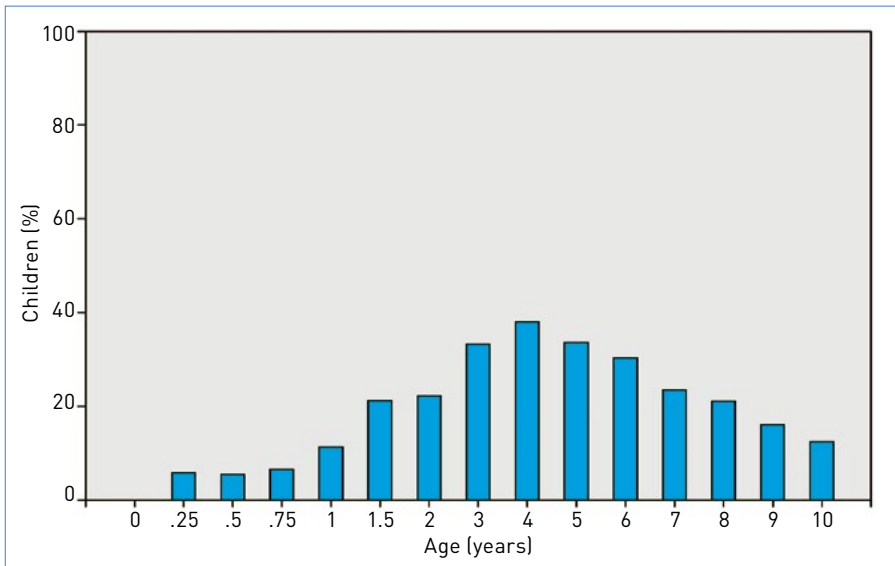


Figure 2: Children in their parents' bed (Jenni et al., 2005)

## Rhythmic movements

From the 6th month of life many children exhibit rhythmic movements when they fall asleep (head shaking, body rolls or rocking), which have no actual disease value and belong to normal development. Already from the 2nd year of life these rhythmic movements diminish in frequency again (Figure 3).

## Delayed sleep phase

Children may be born with a tendency to early awakening («larks» or morning children) or falling asleep late («owls» or evening children). Evening children often show problems falling asleep and have trouble getting up in time for morning school (delayed sleep phase). Behavioural therapy interventions, light therapy, and in rare cases medication can be helpful.

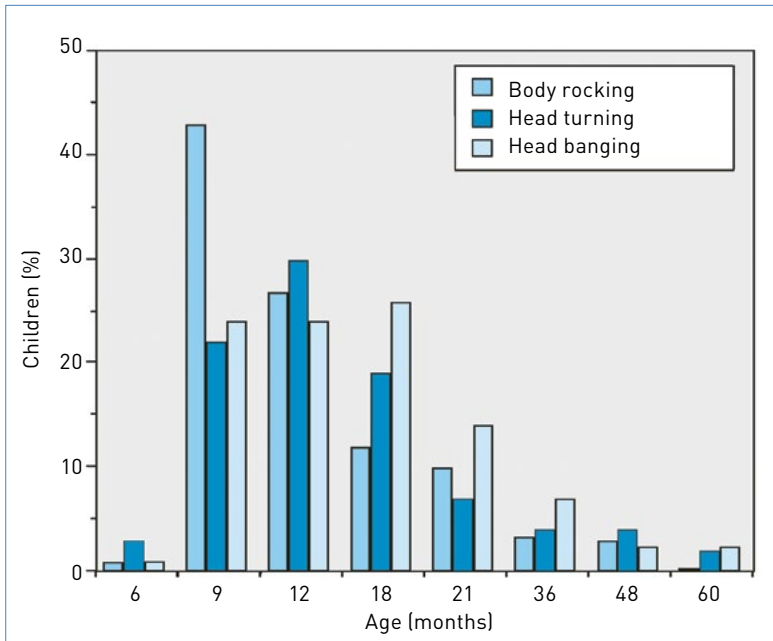


Figure 3: Rhythmic movements in the first years of life (After Klackenberg, 1982)



## Arousal disorders (incomplete awakening)

Arousal disorders are an incomplete awakening from deep sleep. They occur typically in the first few hours after falling asleep and are common and harmless sleep phenomena during a particular age range. It often runs in families.

To the arousal disorders belong the night terrors or pavor nocturnus (toddlers) and sleepwalking (school age). During the night terrors the child thrashes wildly, screams terribly, sweats and often has a bizarre

facial expression. It is unresponsive and cannot be woken up. After 5-10 minutes the episode is over, the child immediately falls asleep again, and doesn't remember in the morning what happened. During such an episode the parents should stay with the child and protect it from injury, but they shouldn't try to hold it or even try to wake it up.

Sleepwalking children are mostly calm, get up and move around. They can also open windows and

	<b>Night terrors</b>	<b>Anxious dreams</b>
Sleep phase	Partial awakening from deep sleep.	Anxiety-inducing dream in REM-Sleep, followed by waking up.
Temporal occurrence	1 to 4 hours after falling asleep.	In the second half of the night.
First impression (child)	Wide open eyes, beside himself, cannot be woken up.	Wakes up, cries, calls for parents.
Child's behavior	Sits in bed, lashes out, facial expressions shows fear, anger, or confusion.	Cries, scared. Fear persists after waking up.
Behavior towards parents	Deosn't notice the parents. Cannot be calmed down. Screams and thrashes when held.	Recognizes the parents immediately. Wants to be comforted.
Falling asleep again	Quickly.	Takes some time.
Memory	None.	Remembers the next day.
What should parents do?	Wait, don't try to wake the child. Protect from injury.	Affection. If necessary, talk to the child about dreams.

Table: Difference between night terrors and anxious dreams

doors. That's why it is important that parents secure possible sources of danger and inform caregivers when the child sleeps away from home. Lack of sleep, irregular rhythm, emotional stress, but also other sleeping disorders can favour waking-up disorders. If they last over a longer period or manifest special forms, further clarification is indicated.

### **Anxious dreams (nightmares)**

In contrast to night terrors, anxious dreams occur in the second half of the night and in REM sleep. The child is apparently awake, crying or screaming, calls for the parents and seeks comfort. The trigger is a frightening dream which the child often remembers. It is important for parents to show love and comfort.

### **Teeth grinding**

Nocturnal teeth grinding is quite common but harmless. In long-lasting cases an orthodontic treatment may be necessary to avoid heavy wearing down of the teeth.

### **Talking in sleep**

Talking in sleep is a common and harmless phenomenon.

### **Obstructive sleep apnea syndrome (OSAS)**

Obstructive sleep apnea syndrome (OSAS) is a breathing disorder during sleep that is caused by a narrowing of the upper respiratory tract. Affected children snore, have repeated breathing pauses, sweat and sleep restlessly. Sometimes there is only one heavy and loud inhalation that is recognisable by the pulled-in chest. About 10% of children snore while sleeping, but only 1% have a sleep apnea syndrome. Daytime drowsiness or hyperactivity that leads to loss of performance and school difficulties are common side effects. The breathing pauses can induce lack of oxygen with effects on brain and heart. The diagnosis is made by wearing an apparatus monitoring breathing while asleep. Frequently, removal of the tonsils suffices to eliminate the sleep apnea and prevents its serious consequences.

## **Narcolepsy**

Narcolepsy is a rare disturbance of sleep-wake regulation (0.1% of the population). It occurs seldom at school age. The disease manifests itself with an unusual tendency to fall asleep (sleep attacks), short-term loss of muscle tone (cataplexy), daytime sleepiness, hallucinations, and immobility when half asleep, though not all symptoms necessarily occur at the same time. The diagnosis is made in a sleep laboratory and following laboratory tests.

## **Medication for sleep disorders**

Sleeping pills are not appropriate for normal and healthy children with functional sleep disorders. Occasionally treatments such as melatonin or other medications for children with developmental disabilities can be helpful.

## **Restless Legs Syndrome (RLS)**

This disease manifests itself through tingling, pain and a strong urge to move the legs. These unpleasant sensations occur mainly at night during sleep and longer periods of rest. Sleep disturbances and daytime sleepiness can be the result. School children and teenagers rarely suffer from restless legs syndrome. The complaints concern nocturnal leg pain and difficulties in falling or staying asleep. Depending on severity, drug treatment can be indicated.

