

Sleep problems

Children's sleep disorders are common, often worrying, yet largely ignored in medical and other professional education with the risk that they may well be imprecisely diagnosed and inadequately treated.

The range of such disorders is much greater than might be supposed from textbook accounts. This is evident from the *International Classification of Sleep Disorders: Diagnostic and Coding Manual* which, although based largely on adult sleep disorders, contains descriptions of many problems encountered in babies, children, and adolescents.¹ Across this wide age range, sleeplessness of one type or another is probably the single most common sleep problem for which medical help is sought, and night time episodes of disturbed behaviour is possibly the next. Excessive daytime sleepiness is a less well appreciated symptom but one which involves an important and wide ranging differential diagnosis.

This annotation contains an outline of these main clinical sleep problems. Other important aspects of sleep in paediatrics, such as the interesting connections with physical growth,² are outside the scope of this article. Further details of children's sleep disorders are available in recent general accounts and the references to specific aspects that are provided.³⁻⁵

Sleeplessness

This term covers various problems especially settling difficulties, recurrent waking, early waking, and short duration sleep. The causes and approach required vary with age, for example, colic and long continued night feeding in babies; lack of bedtime routine or inappropriate daytime naps in young children; and bedtime fears, and other worries or emotional upset in older children and adolescents. Very frequent night waking and settling problems are described in a fifth of toddlers,⁶ common causes being inappropriate bedtime procedures including inconsistency and inadvertent reinforcement of the troublesome behaviour. For such problems, behavioural treatments are relatively simple and effective⁷ and more appropriate than hypnotic medication which is best reserved for short term use in crisis situations before other methods are introduced.⁸ Training in such approaches needs to be more widely available to health visitors and others.

Night time attacks (parasomnias)

A major problem with recurrent episodes of disturbed behaviour appears to be the risk of misdiagnosis. Sometimes the term 'nightmare' is mistakenly used for any recurrent dramatic episode at night. In fact, the various forms of night time attack are different in their physiology and their management.⁹ Timing of attacks usually gives a clue to their nature.

Headbanging and other *rhythmic movement disorders* are quite common at night in young children. They often occur at sleep onset, or on waking during the night, and seem to facilitate sleep. If they persist during the day they can be a feature of severe learning disability or psychosis but in the vast majority of usual cases there is no evidence of developmental disorder. Parents can be reassured that this strange behaviour is not of psychological significance and that it will remit spontaneously by about 4 years of age. The same reassurance can be given in most cases of confusional arousals, night terrors, or sleepwalking. These 'arousal disorders' which are often familial, arise in deep non-rapid eye movement (NREM) sleep and therefore mainly occur in the first third of the night when this type of sleep is most

abundant. The child remains asleep during these episodes. True *nightmares* (frightening dreams) arise in rapid eye movement (REM) or dreaming sleep most of which occurs later in the night. The child is awakened by the frightening content of the dream and is able to describe its details. These various common forms of night time episode can be confused with *nocturnal seizures*,¹⁰ which tend to occur at any time of night and have a very different significance, usually requiring physical investigation and treatment.

Non-epileptic night time attacks are usually 'developmental', that is, they remit spontaneously in time and are not usually associated with psychological disturbance. This may not be the case when attacks are very frequent, if they persist beyond the age they would normally cease, if they start beyond that age, or if they follow a traumatic event.

Excessive sleepiness during the day

This problem may not be brought to medical attention because of being misconstrued as laziness or 'opting out' of boring or difficult situations. Alternatively, parents and teachers may be concerned about learning and behaviour problems without realising that they are the result of hypersomnolence.

Most causes, especially in adolescence, are likely to be the result of habitual lack of sleep for social reasons; in other cases there is actual insomnia that is usually psychological in origin. A more specific cause can be identified in other children, such as obstructive sleep apnoea that is increasingly being recognised from before the age of 5 years.¹¹ Salient features include snoring or other breathing difficulties during sleep, restless sleep, and bedwetting. Obesity is not at all an invariable feature, indeed the growth of some children is retarded. Enlargement of tonsils and adenoids appears to be the most common cause of obstruction and their removal often improves daytime functioning including learning abilities and behaviour.¹² The narcolepsy syndrome can be difficult to detect early in its development; the sleepiness may well not be recognised as pathological, and early cataplexy and sleep paralysis may produce only subtle changes initially. Accompanying psychological problems can easily obscure or complicate the picture.¹³

Children at special risk of sleep disorder

Sleep disturbance can also significantly complicate physical and psychological disorders in children.⁵ It can be caused in a variety of ways. Symptoms of *physical illness* may disrupt sleep or prevent its onset. Examples are painful or uncomfortable conditions (including middle ear disease that may well be overlooked) or where asthmatic attacks, seizures or nocturia repeatedly interrupt sleep. *Medication* is sometimes implicated such as antiasthma and some antiepilepsy drugs, as well as sedatives or hypnotics which can have paradoxical effects. Concern has been particularly expressed about the psychological and possibly physical effects of sleep deprivation in *intensive care units* caused by repeated procedures or by noise or other environmental factors. Sleep patterns may be seriously disturbed by the *stress* of the child's illness or being in hospital.

High rates of severe and persistent sleep disorder have been consistently described in children with a *learning disability*¹⁴ causing considerable additional demands on parents and other carers. Sleeplessness is the most usual form of the problem but additional and more specific types of sleep disturbance are described in certain syndromes: obstructive sleep apnoea in Down's syndrome and most

forms of mucopolysaccharidoses, and excessive sleepiness of uncertain origin in the Prader-Willi syndrome. Although there are relatively few research findings available, clinical experience indicates that certain *psychiatric disorders* are commonly associated with sleep disturbance, notably anxiety or depressive states, autism, and substance misuse.

Assessment

Clinical assessment of each child's recent sleep wake pattern needs to be comprehensive. A sleep diary kept by parents can be very instructive. Other relevant information may be contained in the medical history, findings on physical examination, and inquiries about the family circumstances and relationships.

A detailed clinical account and awareness of diagnostic possibilities is sufficient in most instances but, in selected cases, objective information from overnight video recordings or studies of sleep physiology will be required. The main conventional parameters for describing sleep structure are the electroencephalogram (EEG), electro-oculogram, and electromyogram. These measures permit NREM and REM sleep to be distinguished from each other and the EEG in particular allows NREM sleep to be graded into its four levels, the deepest levels usually being referred to as slow wave sleep. Overnight sleep consists of a series of NREM-REM cycles displayed diagrammatically as a hypnogram.

Special sleep studies do not necessarily involve expensive inpatient sleep laboratory facilities. Home videos taken by parents themselves can be very instructive about children's night time attacks. Recordings of sleep physiology, also carried out in the child's home or other non-specialised setting, are now possible by means of portable cassette systems which provide detailed information on sleep staging and other objective aspects of sleep. Such procedures can be used where necessary to provide an objective check on the accuracy of reported symptoms, to define the sleep disorder precisely by demonstrating abnormal sleep physiology, and also to evaluate treatment objectively.

Treatments for sleep problems

These are many and varied and, of course, need to be chosen according to the nature and origin of the problem or factors maintaining it. In general, medication has been overemphasised in the past; it is often ineffective and can itself give rise to problems, especially disturbed behaviour. Explanation, reassurance, and support can have a major role in management especially in the case of developmental problems where parents may well overstate the significance of their child's symptom or behaviour. For example, showing them norms concerning children's sleep requirements at different ages can be very helpful. More specific practical advice may well be needed such as making the environment safe for sleepwalkers to prevent accidental injury, or not

attempting to waken a child in the throes of a night terror as this will confuse and frighten the child, if successful.

In the case of chronic sleeplessness, it is not sufficient merely to reassure parents that the problem will resolve spontaneously because much harm can be caused in the meantime; the behavioural approaches mentioned earlier should be introduced. Several such approaches have been described mainly in the treatment of settling and night waking difficulties in toddlers. Each aims at changing the way parents deal with the problem. Those described by Douglas are: graded stages by which parents become less actively involved in getting the child to sleep; establishing a bedtime routine and teaching the child cues that it is time to go to bed and sleep; reinforcing settling and sleeping by means of rewards and incentives; and ignoring the difficult behaviour (an apparently quickly effective method but very difficult for many parents as the child may become so upset).¹⁵ The choice of approach and the way it is implemented depends on the particular family. Different techniques may be needed in combination.

Other examples of specific measures include adenotonsillectomy in obstructive sleep apnoea, and adjustment of sleep disturbing treatment, wherever possible, for children with a physical illness. If inquiries reveal that the sleep problem is only one aspect of the child's psychiatric disorder, or of a complicated family situation, professional help from child psychiatry or psychology will be required.

GREGORY STORES

University Section of
Child and Adolescent Psychiatry,
Park Hospital for Children,
Old Road,
Headington,
Oxford OX3 7LQ

- 1 Diagnostic Classification Steering Committee, Thorpy MJ, chairman. *International classification of sleep disorders: diagnostic and coding manual*. Rochester, Minnesota: American Sleep Disorders Association, 1990.
- 2 Taylor BJ, Brook CGD. Sleep EEG in growth disorders. *Arch Dis Child* 1986; **61**:754-60.
- 3 Ferber R. *Solve your child's sleep problems*. London: Dorling Kindersley, 1986.
- 4 Guilleminault C, ed. *Sleep and its disorders in children*. New York: Raven Press, 1987.
- 5 Stores G. Sleep disorders. *Current Paediatrics* 1992;**2**:145-50.
- 6 Richman N. A community survey of characteristics of one to two year olds with sleep disruptions. *J Am Acad Child Psychiatry* 1981;**20**:281-91.
- 7 Douglas J, Richman N. *My child won't sleep: a handbook of management for parents*. London: Penguin, 1984.
- 8 Simonoff E, Stores G. Controlled trial of trimeprazine tartrate for night waking. *Arch Dis Child* 1987;**62**:253-7.
- 9 Mahowald MW, Rosen GM. Parasomnias in children. *Pediatrician* 1990;**17**: 21-31.
- 10 Stores G. Confusions concerning sleep disorders and the epilepsies in children and adolescents. *Br J Psychiatry* 1991;**158**:1-7.
- 11 Guilleminault C, Winkle R. A review of 50 children with OSAS. *Lung* 1981; **159**:275-87.
- 12 Stradling JR, Thomas G, Warley ARH, Williams P, Freeland A. Effect of tonsillectomy on nocturnal hypoxaemia, sleep disturbance, and symptoms in snoring children. *Lancet* 1990;**335**:249-53.
- 13 Allsopp MR, Zaiwalla Z. Narcolepsy. *Arch Dis Child* 1992;**67**:302-6.
- 14 Stores G. Sleep studies in children with a mental handicap. *J Child Psychol Psychiatry* (in press).
- 15 Douglas J. Bedtime and sleep problems. In: *Behaviour problems in young children: assessment and management*. London: Routledge, 1989:116-34.

Routine discharge examination of babies: is it necessary?

The neonatal examination is an integral part of child health surveillance.¹ A thorough physical examination can be regarded as a screening procedure to check that the baby is normal, to look for congenital abnormalities, and as a reassurance for parents. The contact also offers an excellent opportunity for parents to ask questions, and for health promotion including especially a discussion on feeding

practices, immunisation, and reducing the risks of sudden infant death.

First neonatal examination

The first full neonatal examination has a high yield of abnormalities and is widely accepted as good practice. This