Occasional Review

Sleep disturbance in the young child

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Parents report two common problems about their child's sleep in the early years of life. The first is difficulty in getting the child to go to bed, although subsequently he sleeps on through the night. The second is the problem of the child who goes to bed but then wakes during the night. The two, of course, often co-exist, but I am going to concentrate on the second problem, which is usually the more serious. By night waking I mean not only that the child wakes—everybody wakes up at night—but that the child wakes and then wakes up the family.

Rates

The rates of waking of young children during the first five years of life are about 20% up to the age of 2, a slight decline at 3 and 4, but still a common and important problem in perhaps 10% of families at 4½ years. Of interest is how many of these are persistent and how many are new problems at different ages. We looked, for example, at our 1-year-old night wakers and then again at 18 months and 2 years. Of the night wakers at one year, 40% were still waking at 18 months and 40% at 2 years, although not necessarily the same 40%. We looked at our 18-month-old night-waking group and found that 54% were still waking at 2 years but only 23% were waking at 3. Clearly therefore, throughout the early years of life there is consistency in the pattern of a child who does night wake but equally there are new cases cropping up all the time. Around the age of 5 the problem begins to lessen although many young school children still wake their parents at night.

Natural history of sleep

An enormous amount of research has been done on sleep in recent years, but in the young child at least research has tended to concentrate on the first 10 days of life, when it is easy to study the child in hospital.[3] Certainly, when he is born the child's sleep pattern is different from the adult pattern and he spends more time in "random eye movement" sleep than he does in more deep sleep: the adult spends about 20% of time in light sleep and 80% in deep sleep while in the baby the proportion may be half and half. Sleep follows a distinctive pattern: the adult usually drops into deep sleep initially then comes into light sleep and wakefulness after some hours. The cycles may vary in how long they run but most adults come up into a period of wakefulness at least two or three times a night. The baby probably has shorter cycles and wakes more often but his waking does not necessarily mean he demands attention. He may, as most adults do, simply turn over and go to sleep. He must learn that this is expected.

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The total amount of time the baby sleeps is stated by many authors but few actual all-night records have been taken to confirm these figures. In general babies sleep much less than their parents, and quite often their doctors, expect them to. 12 to 14 hours in the early weeks of life is perhaps common but the amount of sleep taken drops towards 10-12 hours certainly by 6 months, and many 2-year-olds, although they may take a short nap in the afternoon, will be sleeping for only 10 hours or less at night. Dropping down to the adult level of around eight hours takes place at puberty. There is enormous individual variation. It is rare for a child under 5, unless he has been forcibly kept up by his parents and kept awake, to suffer from a shortage of sleep. A tired toddler simply lies down where he is and goes to sleep. Parents often worry that their night-waking child is not getting enough sleep, but one can usually point out to them that during the day the child is active and energetic and does not appear to be sleepy.

Apart from the physiological aspects of sleep there are also social aspects. In many cultures it is common for infants and young children to share their parents' bed, and where this occurs not only do the children not get suffocated but night-waking problems are not reported. If the infant is restless at night the mother usually puts the baby to her breast, and I have watched babies reach out for their mother's breast in the night and suckle while she goes on sleeping. It might be said therefore that night waking is a "disease" of the so-called "developed" world.

In most developed countries parents do not expect their child to sleep in their bed. Many find it more convenient, or expect, to have the infant, particularly if still feeding at night, sleeping in a cot in their own room. This also depends on their housing. Equally, at least one baby book says that the child should not sleep in the parents' room, and recommends a separate bedroom from soon after birth. This does not mean that the parents are inattentive to their child during the night, rather the reverse. The least cry from a distant bedroom probably wakes them, and some parents have loud-speaker systems to ensure this. Parents who have the child in their own room often complain that the child is very restless, and they are clearly alert to the least movement the child makes at night. Many baby books in the past have ascribed sleep disturbances largely to parental management of the child's sleep patterns, and it is often difficult to understand the reason for this. Perhaps some parents do encourage night waking in their child by rushing to attend him every time they hear the child move or turn over when he may be coming up into one of his periods of random eye movement sleep or wakefulness. It is certainly worth discussing the child's sleep patterns with the parents and telling them about "active" sleep so that they do not do this. Obviously parents ought to have free and early access to information about this aspect of the child's development (as all other aspects) both before and after their first child is born. Nevertheless, some babies are more predisposed to wake at night than others, and some of the factors responsible for this have been studied.[4] Brain-damaged children, who are often described as having cerebral irritation, may of course cry during

the early stage of the illness, and night waking is reported by the parents of handicapped children. It is not clear whether it is commoner in these children or simply that it persists beyond the age when it tends to die out in normal children. Certainly, however, some children are at risk, and the fact that some children who night wake early in life continue to do so later supports this; it also suggests that biological features in the children lead to night waking.

Prevention

Any child that wakes at night is ipso facto at risk of continuing to do so, so identification of babies aged about 3 months who are night waking (apart from those who are still feeding in the middle of the night) is potentially useful. Identification will pick up those children in whom there are possible associated factors, though in practice those children will usually have been identified already. Having identified the child early treatment is possibly preventive.

Investigation

One can hardly yet speak of the diagnosis of sleep disturbance in a child but one can at least think about various aspects of the child's situation that may be important. A developmental and medical history should be taken and the baby adequately examined and the central nervous system assessed. In the future it may be possible to take a night record at home and look at the child's sleep patterns, but this is hardly a practicality at the moment except during research. Some assessment of the individual characteristics of the baby should be attempted by the examiner, and the work of authors like Chess *et al*[5] and Carey[4] is important here. Their work has established that there are consistent patterns of behaviour in babies—some children are definitely quieter and less active than others, and clearly, therefore, a consideration of what type of personality the baby is developing may be important to the sleep disorder.

The family must then be assessed—the parents' circumstances, the degree of stress they are under, and their marital status. Occasionally, this provides the clue to the problem—recently I saw a child on two or three occasions with the mother complaining of his night waking. I discovered that the father was about to take his final accountancy exams and demanded complete quiet during the evening while he worked and also a quiet and uninterrupted night's rest. I arranged to see the mother and baby again a week after his exams, and I was not surprised to find that the problem had miraculously and suddenly disappeared.

The physical environment in which the child is living also needs studying. The sleeping arrangements of the family, available space, noise from neighbours, or anxieties about being worried by noise—they could all be important.

Finally, a diary of the child's life needs keeping not only to make it quite clear when he is sleeping and for how long, but also for details of feeding, when he has his bath, etc, and what sort of activities the parents allow or encourage. How much time does he spend sitting up in the reclining chair or being carried? For the older children—what do they do during the day; are they spending any time in a playgroup, and so on?

Management

The main purpose of this article is to discuss the management of sleep disorders rather than give a full view of the natural history of sleep and its origin but from what has been said already, the sleep disorder is clearly an interactive problem affecting the family and not simply the child. Consequently the management of the problem must always be directed at the entire family. In practice, however, the manoeuvres carried out often concentrate either on the manipulation of the baby, such as giving him a drug, doing something about the parental behaviour, or in a broader way looking at the whole environment.

MANAGEMENT OF THE DAILY PROGRAMME

Sometimes quite simple procedures like the moving of bathtime from morning to evening, slightly altering the feeding arrangement, or reducing the period of sleep during the day may considerably improve matters. Sometimes parents who have a lot of sleepless nights are so relieved to have the child sleeping for two or three hours in the morning and afternoon that they allow him to do this. One can show them the number of hours the baby is sleeping and point out that the only way to move some of the daytime sleep to the night is to cut down the daytime sleep and wake the child sooner. Babies sleep sometimes after they have been rather more energetic. For the young infant particularly a major time of activity is associated with his bathing and play moments, and a feed afterwards may induce a longer sleep. As every adult knows a heavy meal will encourage one to sleep well initially but one may wake later in the night. Many parents, however, have found that giving the baby an extra bottle helps and in fact the somewhat dubious practice of thickening the feed last thing at night does sometimes improve the baby's sleeping pattern. In a 4-, 5-, or 6-month baby it does seem reasonable therefore to try giving the baby cereals at night rather than with his major feeds somewhat earlier in the day, and this again is a manoeuvre that has proved clinically successful in the past. As time is always on one's side with a sleep disorder and there may be spontaneous remission it is worth trying some of these tricks initially.

CRYING OUT

The classic recommendation of Dr Spock is that the way to treat sleep disturbance is to ignore it and leave the child to cry out: within three nights he will stop night waking[6]. Again, while this form of treatment undoubtedly works with many children, it is totally impracticable where the child is in a small flat or sleeping in the parents' room, as the parents will either be worried about the neighbours or when the child is in the same room they will find it impossible to lie still with a screaming child near them. This emphasises what seems to be a reasonable theoretical objection to this sort of treatment—that it is going very much against the parents' biological instinct. The cry is a most powerful biological signal; it is a signal of distress and to ignore it is very hard and possibly training the parents to be insensitive rather than sensitive to their children. Again, though, it is a form of treatment for use at certain times. Some parents I knew got into the habit of bringing their child downstairs to show him off at ten in the evening when he was about 3 months old, and of course he soon got into the habit of this and did not want to go back to bed. In this instance not bringing him down at 10 pm but leaving him up there after his feed and letting him cry out worked effectively within three days as Spock has said. So sometimes where the parents have conditioned awakening it may be appropriate to help them recondition the child.

DRUGS

A hypnotic drug can be given to the baby, and commonly tried ones ones are phenergan and chloral. Again, this treatment works sometimes but very often does not. The child may tolerate quite large doses. It is sensible to give a larger dose initially rather than do what many doctors have done in the past—tried a small dose the first night and if that did not work increased it the second night. It is a useful treatment when something has disturbed the child's sleep pattern and it seems the child needs some help towards regaining it—for example, after the child

has had an infection and perhaps coughing has woken him or after a short stay in hospital and he is mildly disturbed. Start with a reasonable dose which is appropriate to his age and, rather than increase the dose the next night, as soon as the child starts sleeping decrease the dose and wean the child off the drug as quickly as possible. Increasing the drug nightly means the child quickly becomes habituated to the drug and many babies will take spoonfuls of a drug like phenergan with no apparent effects. Some babies become restless or sleep worse on these drugs, in which case it is pointless to continue with them.[7]

INTO THE PARENTS' BED

Taking the child into the parents' bed is probably the most common treatment in the end, although parents are sometimes reluctant to mention it as they think it is something they should not do. It invariably works—the child usually sleeps straight away, although there are some complaints that he wriggles about a lot, and the parents themselves are disturbed. There are also worries that the child might be suffocated. There is no evidence that this ever occurs. The problems are, of course, that once the child gets used to sleeping in the parents' bed he will not want to sleep on his own again; one can try after two or three months moving him back to his own bed but the parents are going to have to accept the fact that they are going to have the child with them for some time. They may find this very disturbing, and one or other may object and will simply refuse to allow it to go on. They may feel that the child interferes with their sex life, and it has been said that mothers use their children as a form of birth control.

All these issues should be ventilated with the parents, but in general it is often a great relief to them to be told that it is a reasonable solution and that once the child has established a pattern of sleeping through the night he may, if he starts off in his own cot, to their surprise suddenly one night sleep through. If he is going to be lifted back into his own bed success depends on his own cot being warm because what often happens is that he is put back into a cold cot and then wakes up again. It is worth suggesting to the parents that they keep a hot water bottle in the cot to keep his bed warm while he is not in it, though there are practical problems about this.

ADMISSION TO HOSPITAL IN-PATIENT UNIT

Admitting the child to hospital is nearly always effective—the child usually sleeps through the first night. The knowledge that you are prepared to admit the child makes the parents think that you take their problem seriously, so I often mention the possibility. It is not, however, something one wants to do very often. While it may help, and the child may start sleeping better for a period after he has been admitted, there is often a relapse afterwards, and I reserve it for the most difficult cases. Most of the children I have admitted in this way have been children of single-parent families, where usually the mother has had no relief from her crying child and there are serious risks of depression or possible abuse.

NON-SPECIFIC INTERVENTION

All the manoeuvres discussed so far have been directed at doing something for the child to help with the problem of night waking but as I have stated the problem is an interactional one and usually more general changes may help. Bad housing is undoubtedly sometimes the cause of sleep disturbance, and where the mother and father and two, and sometimes three, infants share the same room night crying is often a problem. Probably the parents are aware of the least movement of their children and being sensitive and concerned about their accommodation it is not surprising to hear them reporting that the children are night waking. Rehousing will not only provide the child with a suitable sleeping space of his own but also more room in which to display his energies and abilities during the day and may therefore be very important and help. Sometimes a physical change within existing housing may help and even the substitution of a bed for a cot at the age of 2 may lead the child to have the security he needs—he can get out and find his parents if he wants to—and he may start sleeping through.

But changes in the physical environment are probably less important than changes in the social adult environment around the child. It is not uncommon for parents to report that if they leave the child overnight with the grandparents there are no problems—very irritating for young adults who well may be feeling insecure and anxious about their roles in any event. It is important therefore to get them to see this event in a relaxed way and recognise that the child's need for them is such that when he wakes at night he calls for them but if he really knows they are not there he manages without them. Their anxieties, which they undoubtedly communicate to the child, must play a part here, and rest and reassurance for the parents may be of more importance in treating some night wakers than anything one does with the child.

Undoubtedly there are parents who, through their own anxieties, play a large part in stimulating their child's night waking. Thus a single parent mother came in repeatedly with her baby complaining that the child was awake all night but miraculously, as soon as she acquired a new boyfriend, the child's night-waking pattern ceased. Clearly, there are many reasons why this may have occurred but the simplest and perhaps the kindest would be to assume that the mother felt more relaxed with her child and that this feeling of confidence communicated itself.

Stress and depression are also common in parents with young children, and they are not helped by a lack of sleep. Parents who themselves have not slept are often unable to think rationally about ways of coping with their child's night waking. A couple of nights' sleep may enable them to cope without any further help from the doctor. One can reassure the parent that the night waking will in time cease but at the same time one must not reassure oneself too much. Night waking, undoubtedly, is a trigger for abuse on some occasions, and the problem is one that all doctors should take seriously.

References

1 Jenkins, S, Bax MCO, Hart H. Behaviour problems in preschool children. *J Child Psychol Psychiatry* 1980;**21**:5-17.

2 Bernal JF. Night Waking in infants during the first 14 months. *Dev Med Child Neurol* 1973;**15**:760-9.

3 Petre-Quadens O, Schlag JB, eds. *Basic sleep mechanisms*. London: Academic Press, 1974.

4 Carey WB. Night waking and temperament in infancy. *J Pediatr* 1974; **84**:756-8.

5 Thomas A, Chess, S, Birch HG. *Temperament and behavior disorders in children*. New York: NY University Press, 1968.

6 Spock B. *Baby and child care*. London: Bodley Head, New York: Pocket Books, 1978.

7 Camfield CS, *et al.* Side effects of phenobarbital in toddlers: behaviour and cognitive aspects. *J Pediatr* 1979;**95**:361-5.

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Is there a carcinogenic risk from living close to a radar establishment?

Radar consists of locating distant objects by bouncing radio waves off them. The radiation is non-ionising but of relatively short wavelength (that is, a centimetre or two). Such waves generate heat, and at points close to the source there could theoretically be some danger of cataract from long-term exposure. Current safety regulations, however, ensure that this risk is not real. There is no evidence that radio waves increase the risk of cancer and no theoretical reason why they should do so. The answer to the question is, therefore, "No."