



“A healthy sleeping baby is key to a flourishing family. Our sleep strategy combines medical research with practical routines which assist parents achieve optimum sleep, feeding, growth and happiness in babies and children.

Background series

sleep patterns: babies and toddlers

A block of sleep contains multiple sleep cycles. These occur even in the womb. For babies one sleep cycle is approximately 45 minutes and in toddlers these can lengthen to about 60 minutes.

Please note that the following is a very simplified summary of complex physiology. Despite this simplicity, the recommendations which the analysis leads to, work well for the vast majority of families.

“Minimise cues of sleep achievement that are parent-dependent ... aim for a ‘parent-lite’ approach instead.”

Light sleep	REM (Rapid Eye Movement Sleep)	Deep sleep (Non REM Sleep)
What is it?		
This is a transition phase between wakefulness and sleep and during this time we can be easily woken.	<p>During REM sleep the brain is highly active.</p> <p>In babies this is a time of active body movement as well as sleep. It is likely that this will be the time that you see your baby smile for the first time.</p> <p>REM sleep is important in many ways but one function appears to be the transfer of short term to long term memory</p>	<p>During non REM sleep the baby is at their most still.</p> <p>Breathing is often regular. They are amazingly pleasant to watch. Babies are easy to love when asleep.</p> <p>Non REM sleep has some major functions. For example growth hormone is only secreted in one component of non REM sleep.</p> <p>In many ways non REM sleep is felt to have a range of restorative functions.</p>

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sleep patterns: babies and toddlers

Going to sleep is a learnt behaviour and encouraging your baby to learn to fall asleep independently is one of the most helpful things you can do. It is also the first true skill that you teach your baby. Becoming overtired will decrease the baby's ability to achieve and maintain sleep efficiently. The graph represents sleep for a child (simplified).

Sleep is cyclical. During a block of sleep, it is normal and healthy to awaken and resettle multiple times. For a newborn baby these cycles are about 45 minutes long. The waking events will last generally 30-90 seconds. The majority should be silent and you will be unaware that they occur. In very overtired babies they may wake at the 45 minute mark and have trouble getting back to sleep. Thus if your baby is calling for assistance every 45 minutes it may be a sign of fatigue.

Cues of sleep. It is useful to think of the sleep achievement event as being driven by a combination of tiredness and external cues of sleep ie. the things which are going on around the baby at the time. When a baby or child is first put to bed, tiredness dominates. Cues of sleep achievement are outweighed by tiredness and they are more likely to achieve sleep efficiently. As sleep progresses tiredness reduces and the cues of sleep become more important in the return to sleep event.

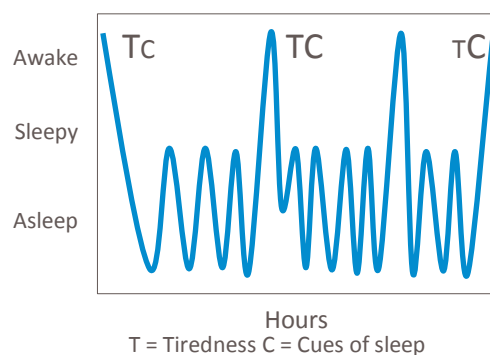
Some children may seek increased parental support after 3-4 am.

Cues of sleep are learned. Can be changed and then relearned.

Sleep achievement and sleep maintenance are usefully regarded as learned skills.

Fatigue interferes with the learned skill of sleep achievement. Therefore it is important to ensure the child does not become over tired. A newborn can become overtired in 10-15 minutes.

Cues of sleep achievement that are parent independent are the most useful for family life. A baby who achieves sleep with your care is preordained to request that care again at some point in the block of sleep. Minimise sleep transitions which involve parental assistance and allow a child to achieve sleep alone. Adopt a 'Parent-lite' approach to sleep achievement. Be there and be supportive but keep it minimal rather than the reverse. The baby needs to feel your love and support but when it is time to be asleep leave them alone to finalise the last steps in sleep achievement. As a parent you have a major and positive roll to play when the baby is awake and maybe even when sleepy but once the baby is ready to be finally asleep these events are best managed by the baby alone. This is true from the time of birth.



Key Points

- Sleep is cyclical with multiple episodes of arousal followed by a return to sleep
- Sleep achievement is in part cue dependent
- Cues of sleep are learned can be altered and then relearned
- Sleep achievement and sleep maintenance are usefully regarded as learned skills
- Avoid children becoming over tired as this interferes with the learned skill of sleep
- Minimise cues of sleep achievement that are parent dependent (be 'Parent lite').

Dr Brian Symon is The Babysleep Doctor. He has more than 30 years' experience working with parents and babies experiencing sleep, feeding, growth and/or behavioural issues. He is a specialist medical practitioner with a MD (PhD) in infant sleep. Dr Symon is well published in national and international medical and research journals having researched infant sleep problems throughout his medical career. He is the author of *Silent Nights, Overcoming Sleep Problems in Babies and Children* and has another book due for release in early 2015.

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Background series

links between feeding, growth and sleep

In order to understand the link between feeding, growth and sleep it is first necessary to separate babies into two general age groups. There are simple but fundamental differences between the two. Understanding these differences is quite important in planning successful strategies for optimal sleep in your baby.

The primary objective for a baby under three months of age is feeding and growth. A baby will not sleep successfully unless they are being well fed and meeting their body's genetic requirements for optimum growth. The best possible growth rate for a baby varies from child to child and relates to both their sex and their final adult size. Boys in particular are quite intolerant about being hungry.

After four to six months this alters. Certainly by six months this older baby needs to sleep well before they will have their best possible appetite and feeding. Thus in this slightly older age group good sleep leads to better feeding and then optimal growth. If sleeping well, feeding well and growing correctly they are happy.

The 'Healthy Newborn Baby'

- Attaches to the breast or bottle well, sucks well, settles well once full
- Sleeps well and for multiple sleep cycles – generally in blocks which are 90 minutes to four or even five hours long
- The bowel is open multiple times per day. 4-8 times per day is common when there is a strong milk supply
- Does not cry a great deal and when they do cry there tends to be a logic to the cry – when tired or hungry or both
- Gains weight well.

"Research shows that offering a top-up bottle if your baby is not satisfied will support and protect your breastfeeding."



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... helping babies to sleep
and families to flourish

links between feeding, growth and sleep

Achieving sleep in all babies

- Human sleep is cyclical
- In babies sleep cycles are about 45 minutes long. In toddlers sleep cycles are a little longer, about 60 minutes
- Sleep achievement is driven by tiredness and 'cues of sleep'
- Cues of sleep are learned, can be altered and relearned. Babies learn rapidly.
- Both sleep achievement and sleep maintenance are usefully regarded as learned skills.
- Cues of sleep which are parent independent or 'Parent-lite' are the most useful
- Successful sleep achievement relies on a baby being fully fed and not overtired.
- Hunger and over-tiredness are the enemies of sleep as they interfere with the learned skill of sleep achievement.
- The aim is to put the baby down fully fed, warmly dressed and alone before they become overtired.
- A baby less than three months old must be well fed to sleep well
- An older baby has to be well slept to have their best appetite, feeding and behaviour.

Baby – birth to 3 months	Older baby – 4 months +
Feeding	
<p>There are many ways to healthily and successfully feed a newborn baby; it is likely that breast feeding will be your initial choice. Breast feeding is a biological variable. Like all biological variables a woman's breast milk volume and the milk's energy density varies from women to women. Whilst every breast feed has benefits for both mother and baby;</p> <ul style="list-style-type: none"> • Some women have less milk, some more • Some days there is less, others more • Some women produce 'full cream', others 'skimmer'. This is genetically determined and can't be altered. <p>If your baby is not fully satisfied at the breast it is ok to offer a top-up bottle of expressed breast milk or formula.</p>	<p>Generally has commenced complementary feeding by 8-12 weeks of age – see Information Sheet, <i>Starting Solids</i>. The volume of complementary feeds varies dramatically from baby to baby and it is important to allow the baby to let you know when they are full. An overtired baby will have a decreased appetite.</p>
Sleeping	
<p>In the first month, life is almost exclusively feed, sleep and grow. After about three to four weeks the baby will have developed short 'Happy Wake Times' [HWT] – see Instructional Pamphlet, <i>Happy Wake Times</i>. The longest block of sleep is about equal to the babies age in weeks – 6 hours at 6 weeks and in an ideal outcome about 12 hours overnight by about 12 weeks of age.</p>	<p>Night time sleep should be 12 hours and day time sleeps vary with age (Instructional Pamphlet, <i>Sleep summary: First five years</i>). Unless the sleep volume is appropriate the baby will have decreased appetite and be less content.</p>
Growth	
<p>Growth rates vary, 30 gm per day reasonable but everything from 20-60 gm per day may be correct for your baby to be content.</p>	<p>The rate of growth begins to slow.</p>
Behaviour	
<p>The causes of crying are;</p> <ol style="list-style-type: none"> 1. hunger 2. over-tiredness 3. both. <p>It is important to avoid complex labels. Assuming that your baby is well there is little benefit in using labels such as wind, colic, reflux, teething, tummy pain. The reality is that if we achieve good feeding, appropriate growth and avoid over-tiredness, the large majority of babies sleep and feed well. In the clinic a diagnosis for reflux occurs once per year or less. In Australia about 25% of babies are on some form of treatment for reflux. Through experience, if we achieve the best outcomes for feeding, growth and sleep very few babies need medication.</p>	<p>The baby now has a range of social and communication skills. If sleep, feeding and growth are going well the baby tends to be happy almost all the time</p>

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Background series

'parent-lite' settling

Many parents find the discussions about infant settling confusing in that there is little consistency. Authors argue different philosophies and present their point of view with varying degrees of evidence, experience, dogma and emotion. This can be quite disturbing and makes making your own parenting choices often difficult.

One of life's skills is in describing what is a reasonable compromise which will maximise benefits and minimise risks. How do we decide as parents what is a reasonable choice whereby we can maximise the benefits for child, mother, father, siblings, the family unit and ultimately society as a whole?

To mention a couple of parenting extremes: One is 'total attachment parenting' where the mother is encouraged to "wear her baby" for up to the first two years. In our view, this is impractical for the mother,

destructive for parental relationships and, despite its advocates' assurances, clearly and unambiguously holds back a child's emotional development, socialisation and self-confidence. Another extreme is what is commonly called (or perceived as) "controlled crying" or even uncontrolled crying where a baby is just left to fend for themselves. In the medical literature there are multiple examples where prolonged and extreme emotional detachment for children has life long and sometimes irreversible negative outcomes. A human infant needs the experience of love to thrive.

So what is a fair and reasonable compromise? As a parent you are extremely attractive to your child. From the babies perspective the parents are life's ultimate reward objects. There is a time in life

"How do we decide as parents what is a reasonable choice that will maximise the benefits for child, mother, father, siblings ..."

where contact with the parents is more important than food, sleep or any other person. For us as parents of course it is quite attractive to be so important to the child's emotional wellbeing. It is one of life's great rewards to be so central to the wellbeing of another person particular one whom you love so much.

Secondly we need to understand that because humans are intelligent creatures that we have the ability to modify our behaviour. In fact humans are undoubtedly the species most able to alter behaviour based upon altered circumstances. Babies are intelligent. If a baby behaves in a particular way and that behaviour is rewarded it will become more common. Thus if a baby cries and you attend that behaviour is rewarded. It is very,

continued overleaf

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very easy to train a baby for crying skills. Just attend every time. This is not kind on the baby.

So what is the key point in this information sheet? We need to create a balance which is appropriate for your family where the baby or child receives the correct, healthy and nurturing balance of parental contact, sleep and play, but can function alone and independently when appropriate. The philosophies which you will find outlined in The Babysleep Doctor resources teach a 'Parent-lite' approach. Love your baby to the full but beware of rewarding negative behaviours.



the baby's view

My Mummy and I have been together for some months.

The first few months were great. I cried, she picked me up and fed me, any-time, day or night.

Then something happened.

Over the last few weeks, she has been trying to sleep through the night. At first, I thought it was just a phase, but it is only getting worse. I've talked to other babies, and it's pretty common.

Here's the thing.

These Mummies don't really need to sleep. It's just a habit. Many of them have had some 20 – 30 years to sleep! What she really needs is time with us. They tell us all the time how much they love us. How can it be good for them to be away from us all night?

So I am implementing a plan. I call it the Cry-baby Shuffle:

Night 1 – Cry every 3 hours until you get fed. I know, it's hard work. It's hard to see your Mummy upset over your crying. Just keep reminding yourself, it's for her own good.

Night 2 – Cry every 2 hours until you get fed.

Night 3 – Cry every hour.

Most Mummies will start to respond more quickly after about 3 nights. Some Mummies are a little slower and may resist the change. These Mummies may stand in your doorway for hours, shhhh-ing. Don't give in. **CONSISTENCY IS KEY!!**

If you let her sleep through the night, just once, she may expect it every night.

I KNOW IT'S HARD! But she really does not need sleep, she is just resisting the change which you and I know is good for her.

If you have an especially slow Mummy, you can stop crying for about 10 minutes, just long enough for her to go back to bed and start to fall asleep. Then cry again. It **WILL** eventually work. My Mummy once stayed awake for 10 hours straight, so I know she can do it!

Last night I cried every hour. You just have to decide to stick to it. **BE CONSISTENT!**

I cry for any reason I can come up with.

- My sleep sack tickled my foot
- I felt a wrinkle under the sheet
- My mobile made a shadow
- I burped; it tasted like pears (I hadn't eaten pears since lunch - what's up with that?)
- The dog "woofed"
- I like how my cry sounded when it echoed on the monitor in the other room
- Too hot, too cold, just right-- doesn't matter! Keep crying!!

It took a while, but it worked. She fed me at 4am. Tomorrow night, my goal is 3:30am. You need to slowly shorten the interval between feedings in order to reset your Mummies' internal clocks. Remember, she deserves and needs your company ;-)

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0-3 Months series

the first month of life: at home with a newborn baby

Congratulations on your new baby! This information sheet sets out what life should look like for mother and baby in the first month.

“A mother’s energy needs increase by a factor of 50-100% - they need to eat well.”

Baby	Mother
Feeding Breast and/or bottle feed 2, 3, 4 or 5 hourly on demand. Let the baby take the lead. On busy days there may be a need for an occasional top up bottle , if your milk supply is low or baby is demanding more often. Use surplus breast milk (collected previously and frozen) or formula (see Instructional Pamphlet, <i>Link between Feeding, Growth and Sleep</i>). Feeding times are fairly short: 15-30 minutes long Arrange a weigh – a bare weigh at least once per week or fortnight. Newborn babies who are thriving can gain at the rate of 30 gm per day but the range of healthy weight gain varies from 20 to 60 gm per day.	While breast feeding a mother’s physiology changes significantly. Energy needs increase by a factor of 50-100% . This is the most energy expensive time in women’s life. Remember to eat three good meals per day and if still hungry add snacks. Drinking is most important. Drink one to one and one half litres of full cream milk per day . It can be as ice cream, milkshakes, custard, yoghurt, ice chocolate, soy. The milk products provide: <ul style="list-style-type: none">• Water volume to keep you hydrated.• Energy at a time when your energy needs are very high. Thus full cream not skimmer.• Calcium for you and your baby.

We call 'newborn' a child of about three or four weeks of age.

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the first month: at home with a newborn baby

Baby	Mother
<p>Sleeping</p> <ul style="list-style-type: none"> Life for the newborn is basically feed sleep, feed sleep, feed, sleep. There are no other agendas. Sleep volumes should on average be about 18 hours of sleep per day, but can vary between 16-21 hours per day. Over-handling. Avoid over-tiredness and over-handling – this is a major problem with newborn babies. A newborn can become overtired by being awake for an additional 10-15 minutes and this is to be avoided. Loving families. Beware of the extended family over-handling the baby. Let sleeping babies sleep. However, during the day there is a 4 hour limit for continuous sleeping and once reached a newborn baby should be gently woken and fed. Length of sleeps on an ideal day can be between 2-4 hours during the day and can be up to 5 hours at night. Waking times will be 20-40 minutes in the day and 20-30 minutes at night. Sleeping times will lengthen with age. Generally the longest night sleep will be approximately equal to the babies age in weeks ie. 6 hours at 6 weeks, 8 hours at 8 weeks, 12 hours at 12 weeks. The 12 hour sleep may include an overnight feed. [see Instructional Pamphlet, <i>The Perfect Night...</i>] Minimise cues of sleep that use parental care (Handout: Parent-lite Settling). When the baby is ready to sleep put them down and let him or her go to sleep with minimal intervention. Crying. For the newborn the maximum time recommended by The Babysleep Doctor for crying while settling to sleep is about 20-40 minutes. If the child has not settled off to sleep by that time then wait for a quiet moment and then reassure. Review the baby, re-wrap as required, perhaps a short top up feed and return the child to attempt sleep again within 10-15 minutes. The newborn will be most comfortable in a wrap at the time of sleep achievement. This continues for a couple of months but it is recommended that the baby convert to a sleeping bag by about one to three months. Converting to a sleeping bag earlier is better than later. 	<p>Rest for one hour in the afternoon, if possible. This will recharge the body and assist with milk production.</p>

Milestone

- By about 3 weeks the baby will begin to have periods of awareness.
- These are attractive and fun BUT are only 5-15 minutes long.
- Remember to avoid letting the baby become overtired and then having trouble achieving and maintaining sleep.
- The baby will become more aware in three steps. 'Meaningful' eye contact, smiling in their sleep and then smiling at you by 3-5 weeks.

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