Controlled Crying: What parents need to know

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For many parents, broken nights are the worst aspect of parenthood. New babies sleep for around 14-16 hours in each 24, but most do it an hour or two at a time and if they are left to fall asleep, or back to sleep, alone, they usually cry. However quickly an infant who cries in the small hours can be resettled, the adult must still take at least a few minutes to be sure he is going to stay asleep and then get back to sleep herself. A parent’s total sleeping time between 11pm and 7am may be a manageable-sounding five to six hours, but if it is unpredictably broken up, it will not feel like a ‘night’s sleep’. Infants’ diurnal rhythms normally begin to establish by around three months at which point sleep periods begin to coalesce, but some infants wake and cry several times each night for months. This is normal behaviour for babies but a serious problem for parents. Many say that they would ‘do anything’ to make their babies go through the night without waking them by crying, so it is not surprising that many are attracted by the idea of ‘sleep training’.

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The concept of ‘sleep training’ by parents and the delayed-response method still called ‘controlled crying’ was formulated a generation ago by Richard Ferber (Ferber, 1985) and is still referred to among older parents as ‘Ferberizing’. It aims to ‘train’ babies from the age of four to six months to fall asleep without an adult’s presence and to go through the night without attention.

Ferber’s published schemes varied in detail but did not deviate far from this summary:

From the age of four months, a baby should have a regular bedtime and bedtime ritual that ends with him being put into his cot awake, and left alone. If he cries, he is left for 5 minutes by the clock before a parent checks to be sure he is all right, gives him a pat and a kiss, then leaves again. If the baby is still crying after another 5 minutes (and another and another...) the checking and leaving routine is repeated.

The next night, the process is repeated but with 10 minutes between checks.

On each subsequent night, the response to any crying is delayed by a further 5 minutes so that on night 4, for example, the baby might cry for 20 minutes between visits — and for an hour or much more altogether.

However long it takes for partial extinction to end the baby’s crying, and however lengthy the periods of crying between parental visits have become, Ferber warns parents not to give up because, ‘If you cave in, all your efforts will be for naught.’

The American Academy of Sleep Medicine classifies behavioural techniques, including ‘partial extinction’ (meaning controlled crying) and ‘total extinction’ (meaning cry-it-out) as standard practice for managing ‘infant sleep problems’. They are widely recommended by paediatricians, health workers and parenting advisors all over the English speaking world.

DOES CONTROLLED CRYING/CRY IT OUT (CIO) WORK?

The argument for sleep training is that infants and young children can be trained to settle and re-settle themselves without the parent and without crying. ‘Sleep clinics’ are charging parents substantial fees to learn how to ‘train’ their babies. Offered interventions vary. Some start gently - aiming to avoid crying rather than control it. In the ‘camping out’ method, for example, parents initially stay in the room until the baby falls asleep, gradually withdrawing their presence over a period of a few weeks. If nothing else works, however, all interventions will recommend controlled crying.

The most substantial-seeming answer to the question, ‘Does controlled crying work?’ is to be found in an American Academy of Sleep Medicine (AASM) Review (Mindell et al., 2006) which summarised 52 research articles supporting ‘crying it out’ as an effective intervention.

Unfortunately, the standard of the research reported is low. Only 11 of the 52 studies reached Levels I & II of the AASM Classification for
Evidence. The remaining 41 studies were excluded from the Review but it is clearly biased in favour of sleep training. The reviewers state that, ‘The research provided strong empirical evidence….’ even though no empirical evidence was forthcoming as no objective measures were used. The measures used were all subjective, such as parental reports and diaries. Furthermore, having confined most of the Review to the 11 studies which did reach AASM Levels I or II, the reviewers included all 52 studies in their final statement that ‘94% (of mothers) report improvements (in the baby’s night-time crying) due to behavioral interventions’.

The review has been carefully critiqued and extensively discussed by Phillips (2014). It was concluded that the multiple flaws in these studies compromise the reliability and validity of the research and make it impossible to reach accurate conclusions about the effectiveness of the intervention.

In 2012, a randomized controlled trial of the ‘Benefits and Harms of Behavioral Infant Sleep Intervention’ was published in Australia (Price et al., 2012). This was a five year follow-up of children who had and had not been ‘sleep trained’ in their first year (Hiscock et al., 2006). The follow-up showed no difference between the groups and concluded, ‘Behavioral sleep techniques have no marked long-lasting effects (positive or negative)’.

Since this was a randomized controlled trial, it has been widely assumed to provide scientifically satisfactory answers to questions about sleep training. However, this study also had some major limitations dating back to its inception. The original study included 328 families with seven month-old babies whose mothers had answered ‘yes’ to the question, ‘Over the last 2 weeks, has your baby’s sleep generally been a problem for you?’ The maternal and child health centers where Australian families take their babies for well-baby checks and advice were randomized between ‘intervention’, where nurses were trained to offer advice on infant sleep issues (attended by 174 families) and ‘control’, where only standard advice was given (attended by 154 families). There were small but statistically significant improvements in the sleep of infants in the intervention group at the end of the first year, but no inter-group difference by the end of year two.

At follow up, when the children were five, it was found that of the 174 intervention group families, only 100 attended for the advice on sleep; only 56 recalled advice about controlled crying and only 21 recalled advice about ‘camping out’. Furthermore, only just over half of those families reported using the suggested sleep strategies ‘most’ or ‘almost all of the time’ This high drop-out rate seriously de-valued the five year follow up (Price et al., 2012). It meant that only about 43 babies of the original 174 were known to have been sleep trained and since no information was available concerning the remainder of this group, or any of the control families, no assumptions can be made about differences between them. Parents seek advice from many sources and the fact that these families were not offered, or did not take, sleep training advice as part of this study does not mean that they did not try sleep training at some point.

So, does sleep training work? Despite research studies, and thousands of articles and blogs saying that it does, we really do not have an answer. The problems with the research are:

- there is little consistency about what sleep training – principally controlled crying and cry-it-out - or its components involve;
- how consistently and over what period these behavioural modifications are applied to babies of what age and with what ‘sleep problems’;
- whether when sleep problems are defined by parents as subjective complaints, analyses of the results allow for the influence of family culture, parent educational and economic status, psychopathology, parenting styles and family dynamics.

And when beneficial effects on infants’ night-time crying are claimed for sleep training, there is seldom information about how long the training or the effects last.

**IS CONTROLLED CRYING HARMLESS?**

Parental, and therefore public interest in sleep training, is so great that any research report attracts a great deal of media attention, some of which can be highly misleading to parents. The Australian study described above (Price et al., 2012) is a case in point. By the time the children reached the age of five, there were no detectable differences between those in the intervention and the control groups. The findings clearly did not say that sleep training had been lastingly effective, but they could be – and were – taken to say that it had done no harm.

**Absence of proof that sleep training is harmful does not prove it is safe**

An article published in ‘Parents’ magazine (Font, 2014) tackled ‘sleep myths’ and concluded, ‘crying it out is bad for your baby’. The magazine concluded that ‘whatever sleep training method feels most comfortable for you is just fine’. This magazine has around two million readers who have been authoritatively told that leaving babies to cry is proven safe and that cry-it-out is ‘proper child-rearing’ because ‘[Your baby] needs to learn to cry on his own’.

Absence of proof that sleep training is harmful is not proof that it is safe and evidence from the expanding field of pediatric neuro-science suggests that it is risky. Early stress has been shown to affect neuro-biological development.
across babyhood and throughout childhood (McCrorry et al., 2010). A large and growing body of international research shows that from the last trimester of pregnancy through at least the first postnatal year, babies’ attachment to their mothers, and the attunement and responsiveness of mothers to their babies, are crucial to all aspects of lifelong development— to emotional stability and mental health and to physical health as well (Schore & McIntosh, 2011).

The brain a baby develops in the womb is still an unfinished project when he is born. In fact, brain development after birth is as vigorous and complex as in utero (Eliot, 2001). It’s a project parents have to complete. At least three quarters of the baby’s upper brain – the cerebral cortex, whose great size and complexity make him human, grows and develops after birth, amazingly rapidly during the first fifteen months and only a little slower by the third year. Most people assume that how a baby’s brain develops and forms the connections and interconnections that dictate its functioning, depends on the genes the parents passed on. However, although these are important, genes alone do not shape the embryo into the person that it will become (Eliot, 2001). The development of neural circuits is more complex than this and is influenced not only by genetics, but also by the unborn and newborn baby’s environment of social and emotional experiences (Tau & Peterson, 2010), by his attachment relationship with his/her parents. Those relationships don’t only affect babies’ immediate happiness, physical health and behaviour, but something much more basic and surprising— the actual structure and functioning of their rapidly growing brains (Hart, 2008). Babies’ relationships with mothers (or primary attachment figures) actually build their brains so babies and toddlers are acutely vulnerable to any dysfunction in those relationships.

Babies’ relationships with key caregivers build their brains

When a baby is born, the left, ‘thinking’ part of his brain is still in the future so the baby does not think or learn, but reacts to and experiences deep primitive feelings stemming from his right brain— fear, anger, excitement, joy. Lacking the brain capacity to ‘regulate’ those feelings for himself, the infant relies on his mother (or whoever is his ‘primary attachment figure’ after birth) to prevent him from becoming overwhelmed; to lend him her brain to keep him in balance, feeding him before hunger panics him, bringing him back from terror or excitement to calm.

Mothers can do this because they are tuned-in to their babies. Whatever else she is doing, her baby is (almost) always somewhere in a mother’s mind, and she responds to him, right brain to right brain. What does that mean? It means that when he cries, she does not need to use her developed adult left brain to think about what she’s heard, what it means, what she’s going to do about it, as a nursery worker or nanny might. She simply responds, finding herself away from the TV and halfway up the stairs before she is even conscious of having heard a cry.

If a baby has no special adult – being cared for, perhaps, in an institution or receiving minimal adult attention, or attention that is inconsistent or inappropriate - his brain development is likely to suffer (Schore, 2001). During the first year, the brain is wiring itself in a process called synaptogenesis. Based on the baby’s bio-chemistry, which is influenced by high-quality responsive care and sensory/emotional input, neurons compete for connections while the infant brain determines from experience (mostly interpersonal) which connections to hold onto and which to prune. This happens billions of times per minute throughout infancy, shaping the brain to fit its unique social environment. Stress, with the release of excess cortisol has been shown to interfere with synaptogenesis, actually unhooking neurons. One empirically established effect is a reduction in the size and connectivity of the hippocampus, a major brain structure with myriad functions (Bremner, 1998). A shrunken and less connected hippocampus relates to depression, poor memory and a range of cognitive problems.

While the infant’s response systems are acquiring their ‘settings’, repeated episodes of toxic stress can permanently affect them. Extreme distress during infancy, particularly chronic fear states, have been associated with an enlarged amygdala (Bremner, 1998). Such an enlargement signals a brain that suffers from chronic anxiety and a hair-trigger response to fear.

Prolonged separation is highly stressful to babies and toddlers

The evidence is mounting that what best promotes optimal brain growth and development is secure attachment relationships, and what puts that optimal brain growth at risk is stress and trauma (Sroufe, 2000). Frequent or prolonged separations from his or her principal attachment figure, as is required by controlled crying, is a potent source of stress for a baby or toddler. Abandoned in his cot while his mother leaves the room, the baby may startle, cry and go into a state of ‘hyper-arousal’ in which an outpouring of cortisol speeds his heart and breathing rate, the ‘fight or flight’ reaction that is familiar to us all.

CRY-IT-OUT

Left in the cot in a state of high arousal and without adult reassurance and regulation, the
baby might go into a ‘hyper-metabolic state’ which is damaging in itself, even as a one-off. In this state, thyroid hormones are released and also a ‘hypothalamic neuropeptide’ called vasopressin which is activated in response to an unsafe or challenging environment. Vasopressin is associated with nausea and vomiting, which explains why some babies who are left to ‘cry it out’ may throw up.

Still un-rescued, that panic-stricken baby might eventually take refuge from a world that had become overwhelmingly awful by retreating inside himself or ‘disassociating’ (Perry, 2003). A baby who disassociates becomes very still and perfectly quiet. He stops calling attention to himself by crying; it is as if he has vanished. Disassociation is physiologically the opposite of hyper arousal. Although cortisol and adrenaline from the preceding hyper arousal are still circulating in his bloodstream, the baby’s blood pressure and heart rate drop to a point where only the basic functions required for survival are operational.

**Panic-stricken babies shut down their nervous system**

Babies cannot cry forever. If an infant is left crying in his cot behind a determinedly closed door, he will eventually fall silent. His parents will probably assume that he has gone to sleep at last. If the pattern of extreme upset, followed by silence, is repeated on subsequent nights, with the periods of crying getting shorter, it may seem to parents that their sleep training is working, that their baby is ‘learning’. Sadly, he is not capable of learning the lesson they are trying to teach, ‘There’s no need to cry; you’re OK’. What the baby is doing is adapting the attachment behaviour that tells him to cry for mum or dad to the experience of his distress signals going unanswered.

Disassociation is fortunately rare but a ‘defeat’ response (Perry & Pollard, 1998) is commonplace. The infant’s nervous system shuts down the emotional pain and the striving to reach out, so the crying stops. If his defeat response is triggered often enough, the baby will become habituated to it so that each time he is left to cry, the response kicks in more quickly. This response largely explains the ‘success’ of ‘crying it out’ in eliminating crying.

**CONCLUSION**

Successful surveys, such as the Lever Fabengé Family Report, ‘Parenting Under the Microscope’ (Edwards, 2004) suggest that many women are finding not only the transition to motherhood demanding, but also the ongoing actuality of mothering. While passionate about their children, women acknowledge that being a mother has unexpectedly distressing effects on their previous adult-only lifestyles and careers.

In this social context, any set of strategies that empowers women to control infants’ behaviour and limit their demands will be attractive to many, especially if they are convinced that the system is good for their babies and that using it makes them better mothers. Many new mothers, bombarded with differing explanations about sleep problems, simply want to be told what to do. Sleep training does just that and may be especially appealing to the women who are least sure that they know anything about babies, and least able to allow themselves to be guided by what they feel.

Following the sleep training routine each night is mindless (though far from effortless) and assures a mother of the rightness of behaviour that she might otherwise have been uncertain about. Closing the door on a baby and leaving him to cry can be both tempting and shameful, but if leaving the baby is part of sleep training him in a way that teaches him a valuable ‘skill’ as well as promising peaceful nights to come, a woman can feel like a good mother even whilst her baby cries and she resists her desire to comfort him. A baby who cries for an hour the first night of sleep training, twenty minutes the following night and two minutes the next may give parents or their advisers the impression that he has learned to go to sleep alone. In fact, if he can be said to be learning anything, it is that communication is useless and he is helpless. To induce such a state flies in the face of what research is now telling us, namely that the impact of early stress on the neurobiological development of the very young child may play a significant part in the onset of later psychiatric illness (Teicher et al., 2003).

**REFERENCES**


