



## PR-P 003: 5 Research-Backed Sleep Training Methods

*Author:* Nicole Weeks

Welcome to the Practical Research Parenting Podcast, Episode number 3! So today I will be looking at a review of 5 sleep training methods, before I get onto that though I will do a very short plug for my swap party. You can choose to swap, donate, or buy. Swapping has a \$10 cover charge but you can swap by the kilo, donating is free obviously, and if you want to buy it is just \$1 per 100g so that's about a dollar per item. So it is an opportunity to swap your kids' old clothes for effectively new clothes. So if you are interested and in the Gordon area go to [www.kidsswapparty.com.au](http://www.kidsswapparty.com.au). Yeah, so that is that and let's get onto the content for today.

So for an outline, we are looking at a review of Mindell and Colleagues 2006 paper, which reviewed 5 different approaches to sleep training. This has been one of my most popular posts and I thought I would share it by audio as well. So the 5 methods are:

1. Prevention education
2. Positive routines including faded bedtime
3. Scheduled awakenings, and
- 4 and 5. Cry it out and controlled crying

So for each I am going to describe what it involves, what the approach involves, the efficacy as found by these studies, the philosophy behind it, and the appropriate ages based on the theory and the ages it has actually been tested in.

OK, so the first of those methods is prevention education. So this is based on 5 large evaluation studies, which each gave parents slightly different advice, they all recruited parents early, usually during pregnancy, I think only one of the studies recruited them when their babies were only 3 months old, but most of them started during pregnancy. So I went through all those studies and I looked at what advice they actually gave

people. So I am going to give you some of the most common advice, from the most common to the least common. So one of the pieces of advice that they all gave was to lie your baby in their cot sleepy but awake, so I discussed this in Episode 1, there certainly is empirical support for this, but as I discussed in Episode 1, it can also put unnecessary stress on parents and just because it is best-practice, don't expect it to always work, and don't beat yourself up if it doesn't work. So one of the studies actually recognised that sometimes this won't work for you, and went on to suggest something you could do. Which was that you change one thing and then try again for 10 minutes before changing another thing. So you might for example check their nappy, or change their temperature, take layers off, or put layers on, and then try for another 10 minutes, see if that helps them settle, burping them, try that for 10 minutes, and see if that settles them, and then stroking, talking softly, or cuddling them if necessary, that sort of thing, to see if that helps them settle, and then settle lying down, ideally. So I think this idea is quite a good one, I have certainly used circular routines quite frequently, so that is, once they are down, and in theory they are going to go to sleep, and in practice they don't, you have a set of systems or things that you try before lying them in their cot again.

Another piece of advice that a lot of these interventions gave was the importance of routine, so some of them mentioned specifics like recommending that you dream-feed your baby between 10pm and midnight. If you haven't heard of a dream feed, it is basically where you pick your baby up, still asleep, and arouse him/her just enough for him/her to feed, and then put him/her back down. Dream feeding works for some people and not for others. It worked for me with Zander, but with Beth it seems she just wakes up soon after the dream feed anyway, if that is the normal time for waking, so it doesn't seem to add anything for Beth. So, it is worth a try, and for some people it will work, and for some it won't.

Another piece of advice was to bath at the same time each day. Another piece of advice that a lot of them give is to maximise the difference between day and night. You've probably heard this advice before, basically making the daytime noisier, lighter, and more active than the night time. That's to basically teach their body clock day from night. One of the studies recommended that you respond to their physical needs at night, with dim lights, but avoid playing and socialising. Not these studies in particular, but a lot of people will recommend avoiding eye contact, I've never been



comfortable with that, I like to maintain some eye contact, but just make it clear that it is not play time, it is quiet time.

Another piece of advice that a few of them gave was to stretch the intervals between night feeds once the weight gain was sufficient. Obviously you would want to check with your paediatrician whether they think weight gain is sufficient, and at what stage this might be safe to do. They found in the study that did recommend this that parents rarely followed this advice, so the results they saw are not likely to be due to this.

That doesn't mean it doesn't work, just that it wasn't the driver of these results. I also find that advice a bit difficult because it is hard to know when babies are genuinely hungry, especially with growth spurts during which they do need more milk. Another piece of advice that is fairly common is to respond to crying but not fretting. Learning the difference between the two is the difficulty there.

These studies basically gave this sort of advice to parents, and then they measured the efficacy. We don't know from the studies exactly which of this advice was efficacious, but we do know that overall giving this sort of advice to parents did help because they found that the parents who were given this advice compared to parents not given any advice, a control group, found that their babies were more likely to sleep for 5+ continuous hours at 6-9 weeks of age and 12 weeks of age. In the study that measured them at 12 weeks of age it found they were 2.5 times more likely. So that is for every 2 control babies who slept 5+ continuous hours during the night there were 5 babies with educated parents who slept 5+ continuous hours, and that is education in terms of this sort of advice given to the parents, not university degrees or anything like that. So they also found that the babies with "educated" parents woke and fed less frequently at night between 6-9 weeks, but they still drank as much as their counterparts, they just drank it more during the day than the night, and same at 9 months of age. They also found that they slept longer, totally, at night, total sleep was longer, and had fewer difficulties settling to sleep at 9 months. One of the limitations of these studies was that very few of them actually had long term follow up. Pretty sure the one where they were looking at them at 9 months, they'd implemented it at 3

months, so it was only a 6-month follow up, and for the others it was largely in weeks rather than months.

I used this with Beth, certainly a lot more than I did with Zander because I read this since having Zander in that age range. I did see similar results and I thought, “wow, this is magic”, because at about 6-9 weeks Beth did start sleeping 5+ continuous hours at night, and I thought “great, wonderful, I’ve got this sorted” and, well, I’m pretty sure that has since changed. She’s still waking up 2-3 times a night just as she did at birth, so it is not necessarily going to help you in the long term, and these studies didn’t really look into the long-term effectiveness. So as always you can see the references to these in the show notes, sorry I haven’t been telling you about them, but they are in the show notes, so that’s at [www.practicalresearchparenting.com/sleeptraining](http://www.practicalresearchparenting.com/sleeptraining), so that is /sleeptraining for this one.

So the philosophy behind this one is that you are setting up “good” habits early, and I say good in quotation marks because this is based on Western ideals of independence, but also pragmatic preferences for feeding more during the day than at night. These preferences or ideals may not necessarily fit your family. I know there are some working mothers who prefer to feed more during the night than during the day because they don’t want to express as much for day feeds, and because the night-time, when they are feeding their baby is their reconnection and bonding time, so this advice may not necessarily fit your family, so you need to take that into account. Also trying to stick too strongly to this advice can produce a lot of added stress I have found, parenting is hard enough without needing that, so see my first episode for how these sorts of steps can be incorporated into your settling routine, but without them being the must-happen thing, or stressing out when it doesn’t work. In terms of the age, this advice was given during pregnancy, or at 3 months, most of the advice fits with any age range, but some of the advice, such as giving a bath at the same time each day, is more likely to be effective after they have started establishing a body clock, so that’s after about 10-12 weeks.

So the next one is positive routines and faded bedtime. Positive routines are a cornerstone of any sleep training technique really, most sleep training techniques you hear about will probably recommend a positive routine. So you probably know what



this is, it is basically a short bedtime routine, often they recommend less than 20 minutes, and these studies certainly did, and these studies recommended 4-7 quiet, positive activities. Positive in terms of your baby usually enjoys them, and positive in terms of a positive interaction between you and your baby, it should be time when you can focus completely on your baby. So, unfortunately, positive routines alone, with a baby, rarely mean much. I have certainly found this. I'd run a routine, put my baby in the cot, and there would be a lot of other things that would happen before that baby would actually fall asleep. So that is where the faded bedtime comes in. The faded bedtime is about trying to form an association between that routine and falling asleep. So the 4 steps in this approach are firstly to determine their natural sleep time. How they recommended doing this was basically letting the baby stay up and seeing when they would naturally fall asleep. That may work for some babies and probably not for others. Other babies will probably keep themselves up well past their natural sleep time if there is enough stimulation about. So in whatever way seems right for your baby, you'd determine their natural sleep time. Once you have done that, and you have chosen your short bedtime routine, then you start implementing that bedtime routine when the natural sleep time is approaching and they are showing signs that they are a bit sleepy or very sleepy. Then once they are falling asleep quickly after the routine, you start moving the routine start time earlier and earlier by 15-30 minutes night by night or week by week. I'd say how you approach that in terms of how quickly you change it would be, you'd be watching how quickly your baby is falling asleep, move it earlier by 15-30 minutes, then see if they are still falling asleep quickly, and if they're not, you might stick with that time for a bit longer before moving it earlier again.

So in terms of the efficacy of this approach, they did find that it decreased the frequency and duration of bedtime tantrums compared to control groups, and they also found, interestingly, that it had comparable improvements to controlled crying, so that is very good, because controlled crying has been very extensively studied and is quite a widely used approach because it does tend to be effective, but do wait until I talk about it more comprehensively later before you go on and try it (controlled crying). OK, so the philosophy behind this one is that you're producing a calm, happy

mood through your bedtime routine that is conducive to sleep, it also producing a chain of events that is associated with sleep, which is something we touched on a little bit last week, and you're also praising and hopefully increasing the appropriate behaviours, so that is something I didn't mention. The idea is you are praising the child when they follow through with the routine. I'm actually not a big fan of praising, I think it is important early on because it shows children what they need to do to feel like they belong and like they're contributing and helping, and it certainly is a communication method for what is right and wrong in behaviour, but as soon as possible, I like to move towards more autonomy supportive ideas, so once they are old enough I'd move towards letting them control the steps in the routine, so how I'd recommend doing that is you can either make a poster with your child showing all the steps in the routine, and then get them to lead you through it. So, "OK darling, what is next on the routine, ok it is X? Then we'll do X." Once they are up to that sort of ability cognitively, that can be a really nice way of doing it, because then it is not you dictating, it is them, but you are still facilitating getting them to look at the routine, and tell you what is next and that sort of thing. What I do at the moment, I haven't actually built a chart like that, I have been using the clock. So I tell Zander each night "OK, when your clock says six five something then it is going to be time to start your routine. We'll start with brushing your teeth." Then I'll get him to go and check what his clock says, and he says "six four something" and I say "OK, good, so we have a bit more time to play. Then he goes in, or I ask him to go in and see what his clock says, and he comes back saying "six five something" or "six five zero", and he'll tell me that it is now time to start brushing his teeth. So that is nice, it sort of gives him a sense that he is controlling the routine, rather than me, and it sort of makes it external to me, it is the clock that determines when the routine starts, so that is quite nice as well.

So, I have used with both Beth and Zander a routine-based approach called the Dream Baby Guide (<http://practicalresearchparenting.com/2014/10/10/dream-baby-guide-review/>), which is a very comprehensive book that covers a lot including positive routines, but something I found really useful from that book which I use for bedtime routines and a lot of other things, and I've found it really invaluable with Zander, and I'm certainly using it as well with Beth, is using words to forewarn. So for example I will say "almost time for – change story sleep" for example then "last one, then it is



time for change story sleep” and then when it is time “OK, it is time for change story sleep”. I’ve found that really useful for not surprising and shocking Zander when it is time. He does seem to react a lot better, and I avoid tantrums (usually) if I forewarn a bit. So, the ages that they looked at this with, they only tested it with 1 to 4 year olds. Theoretically, you’d need them to have a fairly well established body clock, so you wouldn’t expect this to work until after 10-12 weeks when they’re establishing their body-clock, but probably a while after that once it is really fairly firmly established, but as I said, they only tested it in 1-4 year olds.

Technique number 3 is scheduled awakenings. This is quite a counter-intuitive approach because it involves waking your baby. It addresses night wakings but it doesn’t address settling issues. So, if your baby is having trouble settling to sleep, this is not going to help with that, but it will help, potentially, if they have night wakings. So there are 3 steps in scheduled awakenings, so the first is to determine their natural waking times. This is night wakings. For example, it might be 10, 2, and 4, I think these are quite common awakenings if they are not sure how to settle back to sleep. So, you determine when their natural waking times are, and then you slightly arouse, and comfort your baby 15 to 60 minutes prior, so that would be at 9, 1, and 3 or slightly after those times, in my example. At those times you slightly arouse, and comfort your baby back to sleep. Then you gradually fade out the scheduled awakenings. The idea is that these scheduled awakenings preclude the need for their spontaneous awakenings, and that once they are trained out of doing the spontaneous awakenings, then they will no longer do them, is sort of the idea behind this.

So in terms of the efficacy, overall, they reduced night wakings, but it did tend to take a long time, and the problem with overall results is you don’t see the case-by-case results because obviously your baby is going to be just one case. So you can’t know whether it is going to work for your baby or not, and this applies to all of the things I have talked about so far as well. I did look into, specifically, the case-by-case scenarios in these studies. In one of the studies 5 out of the 12 babies had to return to the baseline because of teething or something like that. That is a risk with this one, because it can take such a long time, take any 4 weeks in your baby’s life and most

probably something has come up, a developmental milestone or teething, or that sort of thing. So 5, almost half of the babies had to return to baseline due to those sorts of disruptions. Of the ones who didn't have to return to baseline, there was an 8 month old who took 4 and a half weeks before they dropped all night wakings, dropping all night wakings is sounding pretty good at the moment. There was a 16 month old who dropped all night wakings in the first week. That'd be very nice. There was a 16 month old who dropped all night wakings after 4.5 weeks, but then started waking on 50% of the nights again. In the 24-30 month olds, generally there was a decrease in the percentage of nights when they were waking in the first 2 weeks, but very few of them dropped their night waking completely, even after 4 weeks. In another study they found that the wakings on average across all the babies were 2 per night in the baseline level, and then they halved, down to 1.1 in the 3<sup>rd</sup> and 4<sup>th</sup> weeks, and then dropped below the average of 1 in subsequent weeks. But the control group also decreased to 1.1 in the same time period, but didn't go lower than 1 in that period. Overall it was a significant difference.

So I think, whether this is going to work for you probably depends on the problem, also depends on what sort of disruptions you're going to get in the next few weeks, but I guess that is always the case. Apparently this method is quite effective for night terrors and I will talk about why that might be in a moment. Another problem with these was again, there was limited follow up, so we are not sure how long that lasts, and I am not convinced that it will be very effective long term.

So, the philosophy behind this. There are a number of reasons why they might do this, firstly they might be trying to disrupt the sleep cycle, however, this would only be expected to delay the night wakings, not prevent them. Scheduled awakenings may actually be helpful in addressing over-tiredness because you are arousing and getting your baby back to sleep earlier, so basically, you are preventing your baby from becoming fully awake, so you are being there to comfort them back to sleep almost immediately, and avoiding their spontaneous night wakings, so that might mean they don't fully wake up before going into the next sleep cycle, which lets them get a bit more sleep before they have a natural night waking, and at that stage, they might be able to better fall asleep from it. That might explain why it is considered effective for night terrors, because night terrors are associated with lack of sleep or overtiredness, so maybe being there to help them through that first change in sleep cycle is helpful to



get them the sleep they need to overcome the over-tiredness. That's a potential mechanism for operation.

### **Cry it out and Controlled Crying**

OK, so the final two techniques are cry it out, and controlled crying techniques, and you've probably heard of these. So I have lumped them together because they are based on the same philosophy and I will talk about that in a bit. So cry it out, the idea is you put your baby in their cot and you leave them until a set time in the morning despite whatever noises they make. Thankfully, parents weren't very good at adhering to this, which to us, as parents, probably comes as no surprise. So that is where controlled crying came in. So that is where parents were now allowed to go in and check their babies and give a limited response, so not picking them up, but patting them at set intervals of time, not in response to crying. I'll talk more about my thoughts on this in the philosophy bit, but first of all we will talk about the efficacy in terms of the studies that have looked at it. So this has been extensively studied, and they have found that it reduced bedtime troubles and night wakings. There is no firm evidence of harm, there is in fact some evidence of improvements, such as improvements in security, likeability, emotionality and tension in the children who undergo this sleep training method, compared to control group. However, I would argue that these benefits are probably the benefit that you would expect once you counteract sleep deprivation. I think that parents who are extremely sleep deprived, probably don't have the capacity to be fully responsive to their children during the day. Getting that sleep back, and therefore, that responsiveness back, is going to have a lot of benefits for their children. So I think there certainly are times, in dire cases, when this sort of technique is likely to do more good than harm if it is returning the sleep to parents that they need to be responsive to their children. Personally, I would try other techniques first.

So the philosophy behind this; it is based on the psychology of extinction. That theory is basically that an action, such as crying, elicits a reward, such as parental presence. So when they cry, they get rewarded because you come back and you hug them or whatever you do. The idea of extinction is your then taking away the reward, so you

are taking away the parental presence, and then the idea is that the action that is aimed at getting that reward will become extinct, they will stop crying, which is sort of what you are aiming to do I guess. So that is the idea behind it. This is a well-established phenomenon. When things are rewarded they get done more, and when you take away the reward, they do that action less. However, I have a number of issues with this. Three to be specific. Firstly, crying is babies' primary means of communication, and it doesn't seem right to me that we should be teaching babies that that communication is not going to be rewarded. I think that babies do need to learn to communicate with us and if crying is the only way they can do that I think it is important to respond to that. The second reason is that controlled crying and cry it out techniques both have to be repeated often. A phenomena with extinction generally, but it has also been observed with cry it out and controlled crying techniques, is that doing that action will spontaneously return, as if they are trying it to see if maybe it will bring the reward this time, and when it spontaneously returns then people are forced to repeat the whole controlled crying process again, or cry it out process again. Also, of course, there are lots of disruptions in baby's growth, such as teething, illness, developmental milestones etc. that are going to disrupt this process, and make it very hard, and possibly not right, for the parent to leave the baby without comfort, so it often needs to be repeated many times, which is painful for both the mother and the baby. I have tried this, I did try this with Zander, I didn't try it for long, it just didn't feel right or natural to me to listen to him cry and I haven't done it since. I believe there are more gentle methods of getting your sleep back, and we've talked a bit about those in this podcast, and will cover more in future podcasts. My third reason for not liking this approach is that the babies' behaviour to me seems very much like the poor animals in the learned helplessness experiments. I'm not sure if you know about these experiments, again, very cruel. They put animals in a cage and ran an electric shock through the floor, and animals would fight and claw at the cage, and try to open doors, and jump to the roof and just do anything they could to try to escape this horrible painful cage, and they'd do that each time the electric shock came on, and then they'd do it a bit less, and a bit less, and then eventually, they'd just sit there and whimper with this electric shock going, and once they reach that stage the experimenter would open the door, and then start the electric shock again and they would still just lie there and whimper, because they had learned that they were helpless to stop this pain, which is just so sad. Babies seem to do very similar things, they'll cry and they'll kick



and they'll fight and they will throw things, and all sorts of things to try to stop you from doing this and to try to get out of this situation, and then if they learn that you're not coming, or you are only going to pat them, then they'll fall asleep from exhaustion, and after a few nights they won't even fight. So, we don't know for sure, that that is learned helplessness, but it is very similar behaviour and it doesn't sound right to me. There was also a study by Middlemiss, that suggests that babies are learning not to cry, rather than learning to calm themselves. This is based on the fact that they had the same level of cortisol after crying themselves to sleep as they did 3 or 4 nights later when they silently settled to sleep. So cortisol of course is related to stress. You get more cortisol in your system after you get stressed, so the suggestion here is that babies who were silent were as stressed as the babies who were crying. This needs a lot more research, for example we don't know whether the babies were just better able to handle this level of stress, and therefore the stress level was the same, but their ability to cope with it was better after the controlled crying technique, we don't know for sure, so it needs more research. Personally I think this is a last resort action. The recommended age is generally 6 months and plus, so beyond 6 months, personally I think this should be used as a last resort. As I may have mentioned before if you are so sleep deprived that you cannot be responsive during the day, or if you are so sleep deprived that you are thinking of hurting your baby, then I think a quick-acting technique like this might be justified, but if you can, I'd try other techniques first, and whatever you decide to do, I'd get help, so get support. This technique, although it has quick effects, usually within 3 to 4 nights it is still an extremely painful, and probably sleep deprived few nights, and you will probably need help to get through it.

OK, so I'd love to hear from you. Have you used any of these tactics? We can learn a lot from the research, but we can learn a lot from each other too, so please do share your experiences with these tactics or others. Please consider leaving a review, that would be great, I'd love to hear from you and hear what you think, an honest review, because that will help me to improve and help to get the word out there if it is a positive review. So next week, we will be looking at effective modelling, and we'll apply that to bedtimes, and other things as well. Thank you for listening! Bye.

