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# Prematurity and your infant's learning

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The Champion Centre

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Christchurch Early Intervention  
Trust

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Families of premature infants are always delighted to be going home with their baby and leaving the NICU unit. It is a major milestone and means the infant has come through those first worrying weeks.

Most parents know that for some premature children, there could be a risk of longer-term difficulties. These may result from either the early birth and/or from the medical issues and the treatment that has been necessary to keep the infant alive and healthy. Babies, who are born before 32 weeks gestational age, are on average more likely to have difficulties than premature children born closer to their due date. As yet, no-one can tell how development will progress for any individual child.

**Key point: The development of premature children should be monitored for the first few years**

## Development

All children change and develop as they grow older. Each new childhood developmental phase builds on the one before. However, completing one stage does not necessarily mean the child will successfully complete the next one; so while severe disabilities are rare and will be noticed by families or medical staff during the child's first few months, there may be lower levels of difficulty which only become clear later. These issues may be troublesome at home or at school, but if they are recognised quickly and appropriate action is taken, then long-term difficulties can be reduced or avoided altogether.

**Key point: Some premature children may have significant challenges (about 10%), others will have less obvious difficulties (about 50%) and others may be unaffected by their prematurity.**

## Monitoring

For this reason, it is important to monitor closely the progress of children who are born premature.

At the Champion Centre, we do this at ages 4, 8, 12, 24, 36, & 48 months. In many ways, children develop similarly and learn new skills at around the same age, but no two babies are the same, so it is important to keep observing and monitoring their individual progress, through staff and parents working together.



Children's development can be observed through play, by looking at their motor skills (e.g. can they sit up, crawl, walk, pick up objects, draw shapes?), their social and communication skills (e.g. do they make sounds, copy gestures, learn words?) and their thinking and problem solving skills (e.g. can they learn how to turn on a musical toy or complete a puzzle?).

Another aspect of development which can be troublesome for premature children and is sometimes harder to pinpoint, is the area of self-regulation. Learning to self-regulate is very important and is a common area of difficulty for premature infants, so the next few paragraphs explain a bit more about it.

**Key point: Monitoring development is important and involves observing motor skills, social & communication skills, problem-solving and self-regulation skills.**

## Self-regulation

Towards the later stages of pregnancy and in early infancy, huge changes occur in children's brains. New pathways are created between different parts of the brain. These pathways play an important role in children's ability to self-regulate – that is their ability to keep themselves on an even keel. Their arousal levels, emotional state and attention need to be balanced and stable in order for them to learn and interact. There is growing evidence that these self-regulation skills are crucial for children's development. If children get too much stimulation, are too excited or

too distressed, then they can't keep themselves regulated. It is not possible for them to be well regulated all the time, especially if babies are stressed, tired, hungry or unwell.

Regulation skills will continue to improve even into children's teenage

years. Research tells us that difficulties with self-regulation can be more often a problem for premature infants, because the brain hasn't had the full amount of time to develop before birth. For this reason, it is one of the things we check for during the regular monitoring assessments at the Champion Centre.

In the next few pages, we have outlined some of the possible early regulation difficulties that can challenge premature children and their families. We have added some of the things parents can do to help. We have found that if parents can help children with their self-regulation skills, then other aspects of development will often take care of themselves.



**Key point: Self-regulation skills are important for development and can challenge premature infants.**

### **Premature babies as infants and toddlers.**

Social interaction with parents is really important in learning to self-regulate. Often, premature babies are less able to learn because they spend more time asleep and separated from their parents in the early weeks. They may keep their eyes shut and/or avert their gaze, at times when full-term babies are spending more time gazing and interacting with their families. In addition, breathing problems, reflux or painful procedures may get in the way of establishing the right environment for the parent-child relationship to grow easily. Parents may find it more difficult to understand their child's emotions and respond to their needs. In this way, it can be more difficult for parents to make sure their infant has the right level of stimulation.

To give premature infants the best start in learning to self-regulate, parents can begin by gently “playing” with their baby, using face-to-face communication. This can include singing, imitation of noises,



commenting on infant behaviours, so that a back-and-forth “conversation” takes place. Repetition and routines are not boring for infants. Gradually this type of play can be increased and developed, so that games are longer and more complicated (though always bearing in mind what your baby can manage). Taking turns and mutual gaze is always important. If your baby is not able to take part in play like this, then it would be a good idea to mention this to the team.

**Key point: Interaction with parents is really important in helping babies to self-regulate.**

### Premature children and day care choices

As premature children grow, it is important to consider the environments that they are regularly exposed to, e.g. shopping malls, day care situations, family gatherings etc. Busy, noisy, crowded environments may be particularly challenging for premature children. Parents may need to consider how to



manage these situations with their child. Some situations may be best avoided especially with babies and toddlers, whereas others may be managed with extra help and reassurance. In particular, when considering a regular day care arrangement for a premature child, it may be better to choose a quieter, less crowded environment, if possible. Too much stress may make things more difficult in the long run.

**Key point: Take special care when choosing day care for a premature infant.**

### Premature children as pre-schoolers

As children grow into toddlers, they begin to be better able to regulate themselves. This helps them play and learn new things. Premature infants may be slower to develop these skills. Self-regulation difficulties can lead to sleeping and eating problems, as well as problems with focussing attention or getting over-aroused. This can continue into early childhood. Premature pre-schoolers may be more impulsive and less able to sit still and listen, and play with table-top activities. Their speech may wander off the subject and they have

more difficulty following instructions and/or with abstract, complicated ideas.

Parents are still really important in helping pre-school children to regulate themselves. Children may need more “scaffolding” to learn – that is they may need an adult to help re-direct their attention and help them solve problems, but without doing it for them.

Parents can use prompts and cues to do this. Parents still need to be sensitive to how much help is needed and when – neither too much, nor too little help is a good thing. Parents can begin to link words to behaviours, by talking about what the child is



doing and the feelings he or she seems to be expressing. This way, children can learn to express themselves through words rather than actions. Adults can provide appropriate choices for the child.

Learning chores, pretend play and games with rules all help children to learn self-regulation skills. Recent

research suggests rhythmic predictable gross motor activity may also help to regulate children of all ages, e.g. rocking and gentle bouncing with infants, to skipping, jumping on a trampoline and outdoor games once children are a bit older.

**Key point: Premature toddlers may have difficulties with sleeping and eating. Parents can help in lots of ways.**



### Parents of premature children

At times, taking care of an infant who has had a fragile early start to life can seem like such a responsibility. It can take months or years to come to terms with the shock of the sudden end of a pregnancy and the feelings that follow. Parents can only support their infant in the ways discussed above, if they are feeling

okay themselves. To keep a baby in a calm, alert state, it helps if the adults are calm and alert, at least most of the time! Some people find this easier than others. It is always a good idea to discuss any difficulties that you or your child are having with a team member at the Champion Centre.

A programme can be put in place for children who are having problems with self-regulation or other areas of development. So if there are concerns for your child or for you as parents, then find time to discuss them further with the team. Parenting can be a wonderful task, but not always an easy one. Staff are always available to help, either in person or by phone.

Nevertheless, whilst your worries and concerns are very important to us, we'd also love to share in your delight about your child's progress too!

**Key point: Having a premature baby can be stressful, as well as delightful! You can help your baby best if you are feeling okay. Talk to someone if you need help.**

Written by Dr. Alison Gray. with help from the Champion Centre team & Dr. Patricia Champion. 2013.

#### Further reading

- <http://www.huggies.co.nz/childbirth/premature-babies>  
(Explains some of the common issues)
- <http://www.bestbeginnings.org.uk/supporting-your-sick-or-premature-baby>
- The Premature baby Book (2004) by Sears, Sears, Sears & Sears.  
(Good, but just covers the first year)
- The Preemie Parent's Companion (2000) by Madden. (From a parent's perspective)
- Premies (2<sup>nd</sup> Edition, 2010). (A big book, lots of information, if you like reading)
- University of Canterbury, Child Development Research Group  
[www.psyc.canterbury.ac.nz/research/cant%20child%20dev/index.shtml](http://www.psyc.canterbury.ac.nz/research/cant%20child%20dev/index.shtml) (Access articles from a local research study)

#### Acknowledgements

The Centre would like to thank the following parents for allowing us to use their photos in this leaflet.

Rachel & Jason Fahey

Craig and Robyn Bellve

Mel Morete

Priscila & Philip Metekingi

