



activity development programme

leckey.com

Supporting Children





**play
with purpose**

Early Intervention

The Activity Development Programme is an essential tool for use with the Early Activity System.

Designed as a guide for parents and therapists, the programme details the positions that infants progress through, and the support provided by the Early Activity System.

Not intended as a finite document, parents and therapists can work together to use the Programme and adapt it to suit each child's needs, using the various supports to increase confidence and give them a helping hand in the first precious years of their lives.



A typical baby's development

Every baby comes into the world with limited abilities. That's why the first three years of a child's life is widely regarded as the most important period of development¹. During this time their nervous system and senses, muscles and joints, together with thoughts and actions mature and learn to work together. Generally, these skills happen in a seamless progression. Each skill attained provides a building block for the next more complex skill. So for example, a baby will learn to hold their head up before they will learn to sit. They will swipe randomly at toys before learning to open their hand and pick them up. They will focus on things close up before they learn to turn their head and eyes to follow moving objects.

When development is delayed

For some children, their newborn limitations are not easily overcome by time alone. If a child's development is delayed for whatever reason, it means they are likely to acquire skills more slowly, or the extent to which they master a skill may vary. But it is very important to remember, that regardless of a child's abilities, the sequence of development follows largely the same pattern. So head control will still

come before independent sitting, swiping before grasping, focusing close up before following moving objects.

The brain's ability to change

At birth, a baby's brain is not fully developed. It is growing, changing and making new connections. It is possible that new brain cells learn to take on the functions of damaged cells – to some extent the brain may learn to compensate for its damaged areas. Therapists refer to the ability of the brain to change as “neural plasticity”². However, this capacity to change slows down as brain growth slows down. This helps us to understand why the early years are so important for children.

Early intervention – benefits to children and families

We now appreciate why the first years of a child's life are crucial to their overall development. However, the brain does not develop these new connections entirely on its own. Training and practice are also needed. When children need extra help to achieve developmental goals during their first three years, this help – usually occupational therapy and/or physiotherapy and/or speech therapy – is referred to as “early intervention”.

Early intervention is supported by many research studies which identify its benefits³⁻⁶. The main aims of early intervention are to improve a child's motor and communication skills, enhance cognitive outcomes, minimise the likelihood of secondary complications, enhance parent or carer well-being and also improve bonding and interaction with their child.

Parents and therapists in partnership

Therapists alone are not able to provide the level of extra help that developmentally delayed infants may need – simply because it is parents and relatives who provide 24-hour care for their children. But therapists do play a vital role in assessing children's developmental needs and recommending activities which will help them reach their next developmental goals. And research has shown that early intervention programmes which combine a parent and child focus have a greater impact on the developmental outcomes of the child⁷. So parents and families, working together with therapists towards agreed developmental goals for their child, have the potential to achieve the best results possible.

Activity Development Programme

Playing with a purpose

So far we have talked about children's development, early intervention and therapy. It can all sound very serious so it's easy to forget that the "intervention" and "therapy" we are talking about is simply play with a purpose. Children with developmental delay, just like any other children, learn through play – in fact children work harder on therapy goals when they are having fun through play. So don't worry – as a parent, carer, grandparent, sister, brother or friend..... the list is endless.....you will be able to help your little one achieve their potential just by understanding why you are playing certain games in certain positions. We will look at this in more detail later on.



The Early Activity System

At Leckey we have worked with experienced therapists, used evidence from published research studies, and our own experience to develop the Early Activity System. This modular floor-based system is designed to assist your child to improve his physical, cognitive and sensory abilities by encouraging play in five key therapeutic positions. These are the main positions in early development which form the basis for later abilities.

The Early Activity System is designed to allow you to “mix and match” positions and activities for your child, ensuring the best possible developmental start. Changing positions is important, as this is what allows your child to progress independently at a later stage. The aim is to allow your child to develop a variety of movement skills, as well as building strength and coordination.

The Five Positions

The Early Activity System supports purposeful play in:

1. Back lying (supine)

2. Tummy lying (prone)

3. Side lying

4. Floor sitting

5. Kneeling



Activity Development Programme

You may find your child likes some positions more than others, or some positions may not be medically advisable for your child to use. It is important for you to take advice from your therapist(s) about the best positions to place your child in. This may depend on whether your child's muscles are tight (high tone) or floppy (low tone), their level of development or tolerance for certain positions. Some positions may need to be avoided for medical reasons, and others will need to be encouraged, even if your child is not keen at the start!

Transitions

Transitions are the positions or movements needed to get from one position into another. For example, rolling is the transition needed to get from tummy lying to back lying and over again. To be able to change position independently, your child needs to learn to shift their body weight, then support that weight with one part of their body while moving another part of their body. Some activities will be recommended by your child's therapist to work specifically on transitions.

Position versus activity

The position that you place your child in and the activity that you choose for your child in that position are equally important.

However your child's level of ability in a certain position will determine how difficult an activity they can manage. For example, if they find it hard to sit up, most of their energies will be going towards sitting up – so choose a simple activity for them. But if their goal involves a more difficult activity, then you will need to choose an easier position or provide more support. That way, your child is not over-loaded and is more likely to experience success.



The Early Activity System

Designed to have an infinite number of combinations, the interchangeable positional supports are listed with some of their most common uses. All the postural supports are contained in a compact Squiggles carrier bag for easy storage.



1. Cushioned Floor Mat

Covered with “fluffy” Velcro so that all the supports can be quickly and easily attached and removed, this comfy floor mat also has Velcro on the underside for additional positioning options.

2. Head Support

Contoured to cradle the head, this support can be used on its own, or with its removable lateral pieces. While particularly useful in back lying or side lying, the lateral supports can also be used with other components for extra positioning possibilities.

3. Sitting Support

This profiled cushion is designed to give your child lower back support, while allowing the hands to be free for activity and function. When used in conjunction with the other elements additional front, rear or side support can be increased.

4. Trunk Wedge

Primarily designed for use in tummy lying to provide trunk support, this wedge can also be used below the head in back lying to encourage chin tuck, or below the bottom in floor sitting (along with the sitting support) to give a slight forward or rearward tilt, depending on the position desired.

5. Positioning Straps

Use these versatile straps in addition to the rolls for extra support when needed at the front, sides or back. Alternatively, use them on their own for a reduced level of support when the rolls are no longer required.

6. Four Flexible Rolls

The rolls, in two sizes, can be used on or below the floor mat, and on their own or with the other support elements to provide just the right level of postural support.

7. Fabric

The fabric used on the positional supports is a high grade textile which is almost 100 times more resistant to wear than standard vinyls.

The fabric has permanent anti-fungal and anti-bacterial properties which greatly minimise the risk of cross infection. Bacteria such as MRSA cannot grow on the fabric.

The soft touch fabric is easily cleaned using alcohol wipes so machine washing is not required.

1 x1 Cushioned Floor Mat

2 x1 Head Support

3 x1 Sitting Support

4 x1 Trunk Wedge

5 x2 Positioning Straps

6 x4 Flexible Rolls





back lying

Why is it important?

Back lying is the most fundamental of developmental positions. When your child lies on their back, their full body weight is symmetrically supported by the surface. This makes it a very secure position from which to work on the physical, cognitive and sensory skills that provide the building blocks to more complex skills. The following sections explain a little more about each skill area.

Physical goals

Children will benefit from strengthened neck, tummy, shoulder and hip bending (flexor) muscles because they have to lift their head, arms and legs up against gravity. With the right supports, it may also help to break up a pattern of straightening (extensor pattern) if muscles are tight. Foot development can be encouraged in back lying – kicking and bringing the feet to the mouth helps strengthen the foot muscles which are needed for weight bearing later on.

Cognitive goals

From this position, children may be able to reach and accidentally swipe at toys

dangling from a gym or held above their face. With practice, this random action gradually becomes more deliberate, developing a realisation of “cause and effect”. Likewise, they may learn to kick musical toys placed near their feet. When children bring their hands and feet together to explore, they are learning about their own body parts and the relationship to each other. This forms the basis of body awareness and co-ordination.

Sensory goals

When lying on their back it is easiest for children to focus their eyes on a dangling object. First, they learn to follow it through quarter of a circle using just their eye movements, then through half a circle moving their head as well as their eyes. As they become aware of their own hands and feet and take them to their mouth, their hand-eye co-ordination and fine motor skills are developing. Even the sensations that children receive through the back of their body will be helping them to develop a sense of front and back. Likewise, the feedback that children receive through the joints and muscles in their limbs (known as proprioception) gives important information about their body position in relation to their environment. Most activities can incorporate a sensory component with a

little thought to the toy or the surface used. Use rattles, squeaky toys, brightly coloured balls, crackly paper etc to encourage your child’s vision, hearing and sensation. If your child will tolerate it, let them carry out their activity sessions in their vest to allow the maximum amount of sensory feedback possible.

Common difficulties

However, children may assume an asymmetrical position when lying on their back due to the effects of gravity or tone. If your child has higher tone, they may struggle to lie flat on their back without going into an extensor pattern. If your child has lower tone, they may find lifting their arms or legs up off the mat more challenging.



Positioning

Place a roll under your child's knees and rolls at either side of their chest if they need extra stability. Use the orange head support, with the lateral supports attached if they tend to look more to one side than the other. Your child's head can alternatively be placed on the blue wedge (with the thicker end towards the top of their head) to help encourage chin tuck and work on neck muscle strength. The green strap can be placed across their hips to help with stability. Remember this is just one positioning example - your therapist(s) will give you specific advice.





1. Object Tracking

Hold a brightly coloured toy or a high contrast image about 12-15" above your child's face. Move the object from left to right through a quarter circle, then back, going slowly enough so their eyes can follow it. Make the task a little more difficult by holding the object 15-18" from their face and moving it through a semi-circle to encourage head movements.

Duration: _____

Frequency: _____



Top tip!

When working on object tracking, minimise other environmental distractions e.g. TV, bright lights, pets or siblings

2. Hands to midline

Encourage your child to bring their hands together on their chest. Place your hands behind their shoulders to encourage their arms to come forward. If your child struggles to lift their arms from the mat, make a 'nest' shape from the supports and place your child in the middle. Their shoulder girdle is then brought forward making it easier for them to use their arms by raising them up to their head. The hips are also supported and bent up slightly, which makes it easier for your child to lift their legs. If your child has any issues with their airway, check with your therapist if this is a suitable position for them.

Duration: _____

Frequency: _____





3. Bicycle kicks

Hold onto your child's feet and help them to kick or "bicycle" their legs. This helps to strengthen tummy, legs and feet, and the reciprocal movement is one which is needed for later weight bearing or movement.

Duration: _____

Frequency: _____



Top tip!

This is a great movement to do if your child has problems with constipation or wind.

4. Hands-to-feet

Bring your child's hands and feet together. This midline position is good for symmetry, and they are beginning to learn to use both sides of their body together. This is a building block for being able to roll over later on.

Duration: _____

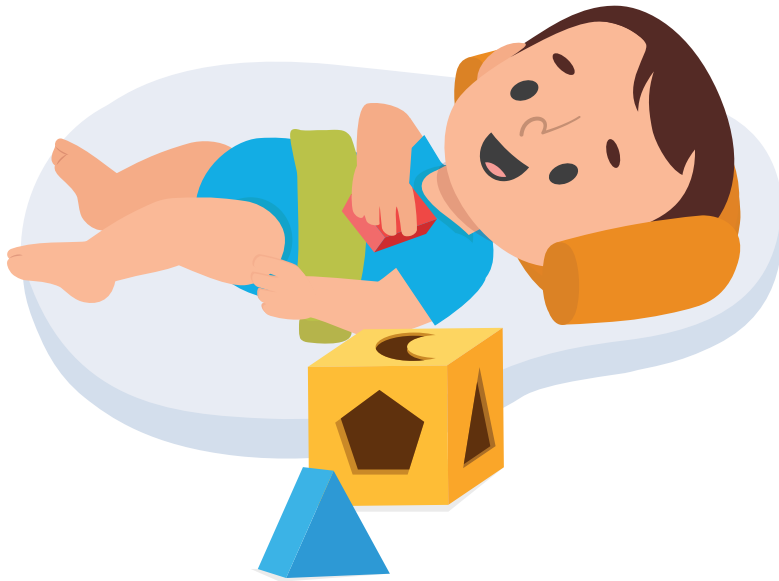
Frequency: _____



Top tip!

Try wrist or ankle rattle socks or noisy hoop toys to make it more fun!





5. Reaching for toys

Use the positioning strap to stabilise your child's hips. Encourage them to reach across their body with their left hand to a toy on the right side, and vice versa. Place your hand behind their shoulder to assist if necessary. To make this a bit more difficult, remove the positioning strap and move the toy a little further out of reach. Your child should need to shift their weight at their hips to reach the toy. This is a building block for being able to roll over later on.

Duration: _____

Frequency: _____

6. Rolling practice

To encourage rolling from back lying to tummy lying, start by placing your child on their back. For rolling to the right side, encourage your child to reach their right arm up above their head so it doesn't get stuck underneath them when they roll over. Then encourage them to reach across their body with their left arm. Once your child's head and shoulders turn, they may bring their left leg across their body as well or they might need help to do this. Help them prop onto their elbows to make sure their airway is clear. Alternate sides so your child has opportunity to work both sides of their body. The aim is to develop "segmental rolling" - when the head turns first, followed by the shoulders, then trunk, hips, legs and feet. This rotation of the trunk is an important building block for the movements needed for later crawling.



Duration: _____

Frequency: _____





tummy lying

Why is it important?

Research has shown that about half of typically developing infants show some delayed development by six months of age if they are never placed on their tummies when awake⁸. In addition, the back muscles (extensors) of children with developmental delay tend to be weaker⁹. This makes it especially important to have some daily tummy time. It is a more difficult position for children, because to see around them, they have to lift their head up clear from the surface. Younger children's heads are bigger in proportion to the rest of their bodies, so to lift them up against the force of gravity is really hard work! Focus on your child tolerating and enjoying this position and keep activities simple as the position is quite difficult.

Physical goals

The therapeutic and developmental benefits of lying in this position have found to be improved upper body strength, shoulder girdle strength and improved gross motor skills¹⁰. Lifting their head and shoulders up against gravity helps to strengthen their neck and back muscles. This is helpful for children with lower tone. It is also an important foundation for the development of sitting. Hand development is promoted, as the weight taken through the bones,

joints and muscles of the hand are strengthened. Reaching out for toys in this position also helps work on weight transfer skills, which are needed for crawling.

Cognitive goals

In tummy lying, children need to have developed reasonable head control before they will be able to prop on their forearms to play with a toy in midline or reach out with one hand at a time. Otherwise, tummy lying will be difficult and tiring. As they learn to hold their head up and prop on their forearms, your child's shoulders and arms are giving sensory feedback about their position in relation to their body and the environment. As this works together with their eyes and their environment when they are reaching for toys, your child's spatial awareness is also developing.

Sensory goals

When lying on their tummy, your child can gain a sense of security. They continue to develop their visual focusing and tracking, and their sense of body awareness. With reasonable head control, your child will be able to play for some time in this position, continuing to strengthen their muscles, while exploring their environment and looking around. Most activities can incorporate a sensory component with a

little thought to the toy or the surface used. Use rattles, squeaky toys, brightly coloured balls, crackly paper etc to encourage your child's vision, hearing and sensation. If your child will tolerate it, let them carry out their activity sessions in their vest to allow the maximum amount of sensory feedback possible.

Common difficulties

Tummy lying is a difficult position as your child has to lift their head up against gravity. For children who really struggle with lying on their tummy on a mat, tummy time can be achieved by lying your child on your chest. You can then slowly lean further back as your child gains more head control and tolerance. For children with higher tone, they may struggle to lie flat on their tummy without going into an extensor pattern. Some children also struggle with lying on their tummy due to conditions such as reflux or having a PEG feeding tube or tracheostomy in situ, and precautions need to be taken to make sure they are comfortable and safe to maintain this position. If your child has higher tone, they may struggle to break their strong extensor pattern and bend at their hips without some help or support.

Positioning

Place a small roll or wedge under your child's chest. Support their whole body so her trunk and legs are stable. Use the pelvic positioning strap to stabilise their pelvis if required. Remember this is just one positioning example - your therapist(s) will give you specific advice





1. Object Tracking

With your child weight-bearing on their forearms with their elbows bent, encourage your child to lift their head up – use a brightly coloured toy or a high contrast image to motivate them. To make this a little more difficult, move the object from left to right through a quarter circle, then back, going slowly enough so their eyes can follow it. Then try moving it through a semi-circle to encourage head movements.

Duration: _____

Frequency: _____



Top tip!

Try to persevere with tummy time if your child does not like it. Seconds at a time initially will eventually build into minutes.

2. Pushing up

Encourage your child to “push-up” on straightened (extended) arms with open hands. This will strengthen their shoulder and upper trunk, and encourage weight bearing through their arms – a building block for crawling. It is also a very early building block for fine motor skills which depend on stability at the shoulder for the control needed.

Duration: _____

Frequency: _____





3. Reaching

While your child has their head lifted, encourage them to reach and grasp with one hand, then the other. This helps to develop trunk and lower spine extension. The weight shift involved when using one hand at a time uses more complex muscle control. This is also a building block for sitting up and using the arms against gravity.

Duration: _____

Frequency: _____

4. Rolling Practice

To encourage rolling from tummy lying to back lying, start by placing your child on their tummy with them weight-bearing on their forearms with their elbows bent. To encourage rolling to the right, hold a toy to their left side and then move it up towards the ceiling, getting them to follow it with their head. Then encourage them to reach forward with their right arm and push up and straighten their left arm. Gravity might then help them roll onto their back or they may need help at their hips to help finish the movement. Alternate sides so your child has opportunity to work both sides of their body. The aim is to develop “segmental rolling” - when the head turns first, followed by the shoulders, then trunk, hips, legs and feet. This rotation of the trunk is an important building block for the movements needed for later crawling.



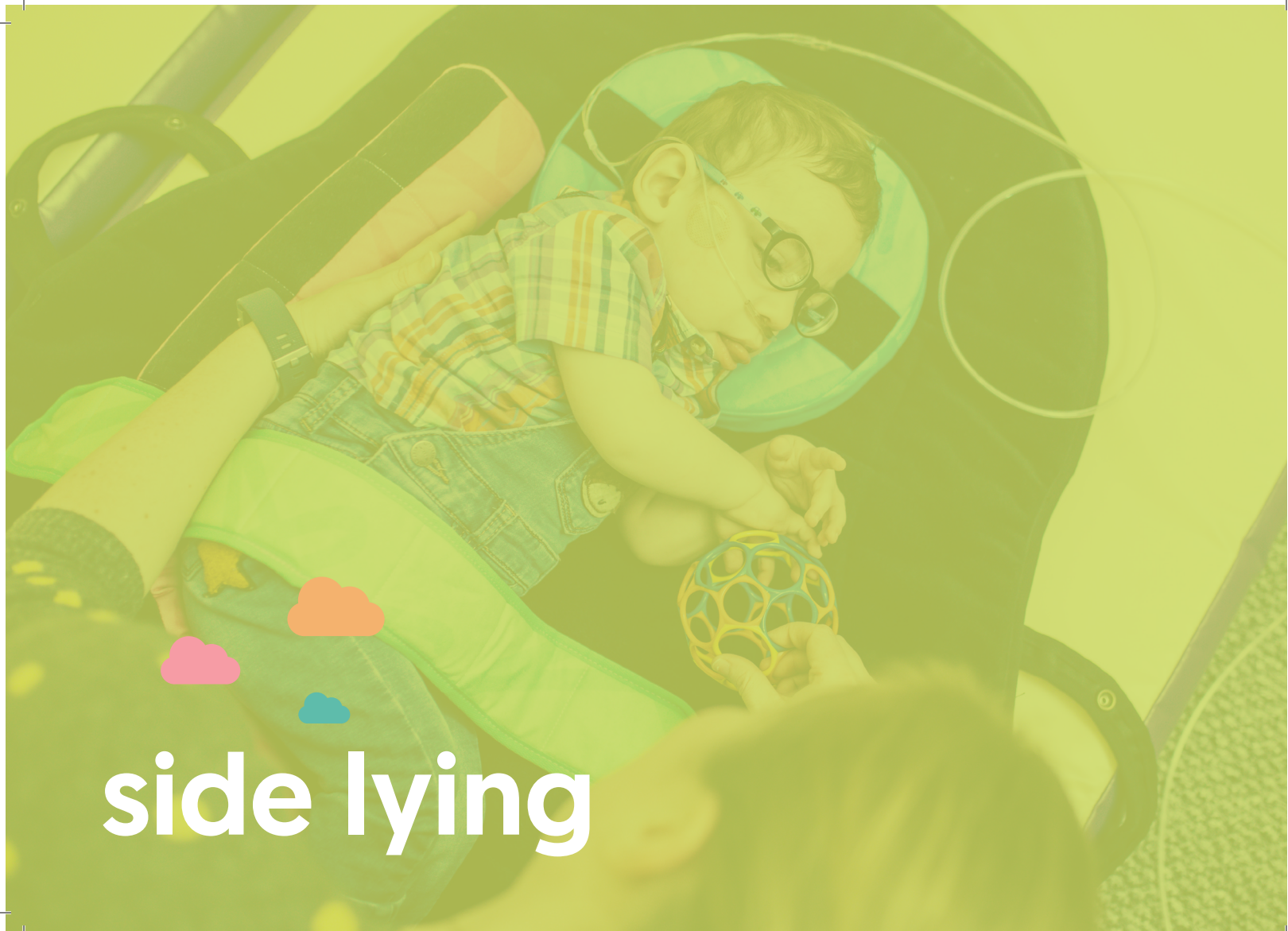
Duration: _____

Frequency: _____





side lying



Why is it important?

Side lying is not, strictly speaking, a separate developmental stage of its own. In typical development, children tend to pass through side lying during transitions from back lying to tummy lying and vice versa. However, for children with developmental delay, sometimes back lying or tummy lying present too many challenges. Where children have uneven muscle tone (one side of their body may be different to the other) or strong reflexes which interfere with their ability to use both sides of their body together, it can be difficult for them to bring their hands together in the midline. This position particularly allows the development of fine motor (arm and hand) skills, cognitive and sensory skills.

Physical goals

Side lying allows a strong extensor pattern to be broken (when back lying or tummy lying can't achieve this). Gravity helps bring a child's arms together in the midline. If possible, the sides should be alternated to maintain symmetry. The side chosen for lying will also depend on the condition of the child and the aim of the activity. For example, for some children with hemiplegia

(a form of cerebral palsy where one side of the body doesn't work as well as the other), lying on the affected side may help to control unwanted arm movements and improve two-handed play. Alternatively, lying on the unaffected side may encourage the use of the affected arm. Your therapist will help you decide which side is best for each therapeutic goal.

Cognitive goals

Like back and tummy lying, side lying helps children to develop cause and effect play, body awareness and co-ordination. The stability that this position gives also allows concentration to develop because play is less interrupted by unwanted body movements.

Sensory goals

Because asymmetrical muscle tone and/or reflexes can affect a child's symmetry, side lying reduces the effects of these, meaning that children are able to experience more normal movement sensations. They can also use their eyes more efficiently to follow objects when their head position is more central in relation to the rest of their body. It gives children a sense of body awareness and opportunities for sensory play. Most

activities can incorporate a sensory component with a little thought to the toy or the surface used. Use rattles, squeaky toys, brightly coloured balls, crackly paper etc to encourage a child's vision, hearing and sensation. If your child will tolerate it, let them carry out their activity sessions in their vest to allow the maximum amount of sensory feedback possible.

Common difficulties

For some children, side-lying can be a difficult position to maintain. Where children have uneven muscle tone, or strong reflexes which interfere with their ability to use both sides of their body together, it can be difficult for them to bring their hands together in the midline.



Positioning

Place your child legs in a bent (flexed) position on their side. Use a large roll behind their body and head to create a chair shape which keeps their legs bent and their bottom supported. Try to alternate sides if possible. Remember this is just one positioning example - your therapist(s) will give you specific advice.



1. Object Tracking

Hold a brightly coloured toy or a high contrast image about 12-15" above your child's face. Move the object up slightly towards the ceiling, then back, going slowly enough so their eyes can follow it. Then try moving the object a bit higher to encourage head movements. Alternate sides so your child learns to move their head in both directions.

Duration: _____

Frequency: _____

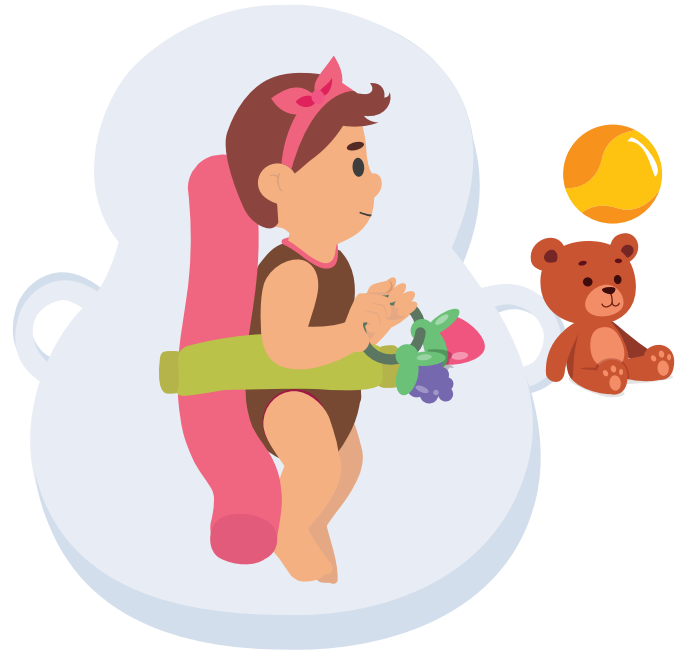


2. Hands together

Place toys within reach of your child's hands, encouraging swiping, reaching and exploration with two hands, passing toys from hand to hand, or banging toys together.

Duration: _____

Frequency: _____





3. Hands-to-feet

Bring your child's hands and feet together. This midline position is good for symmetry, and they are beginning to learn to use both sides of their body together.

Duration: _____

Frequency: _____





floor sitting

Why is it important?

Sitting is considered a vital part of the developmental sequence because of the other skills which are based upon its foundation. Many research studies have looked at the importance of sitting, and some research has shown lying ability to be related to sitting ability. Children who can bring their hands and feet together in midline (such as in back or side lying) have shown improved sitting ability¹¹.

Physical goals

The main physical purposes of sitting are to stabilise the trunk and pelvis allowing the arms and hands to be free. In turn this allows handling of objects, exploration, increased learning opportunities and interaction with the environment¹. Children can be encouraged to reach, grasp and release toys, bang blocks together in midline, and throw things! Long sitting (with legs out in front) also helps to stretch the muscles at the back of the legs (hamstrings) which can often be tight in children with developmental delay. Bending at the hips into a sitting position can also help break a strong extensor pattern.

Cognitive goals

When your child lies down, they are able to view the world in a horizontal plane. But when they sit up, they can see the world from a vertical plane. This helps them to realise that their environment is three dimensional – they are starting to learn the spatial awareness concepts of depth and distance. Sitting is also a more social posture – the majority of us communicate with each other from an upright posture, whether sitting or standing. Your child is becoming much more aware of the others around them and this leads to an increased interest in their environment. They will be developing a sense of object permanence – the awareness that toys are there even if they cannot see them – and they may even look for things they have thrown away!

Sensory goals

With head control developing well, and when securely supported in a sitting posture, your child's hands are free to explore a much greater range of textures, shapes, and sizes. Use a variety of these (always with supervision) to give your child a range of sensory experiences. They will be learning about rough and smooth, light and heavy, big and small, up and down.

Most activities can incorporate a sensory component with a little thought to the toy or the surface used. Use rattles, squeaky toys, brightly coloured balls, crackly paper etc to encourage your child's vision, hearing and sensation. If your child will tolerate it, let them carry out their activity sessions in their vest to allow the maximum amount of sensory feedback possible.

Common difficulties

Children with lower tone often slouch when sitting, and take a long time to develop stability in their tummy and back muscles to maintain this position. If your child has higher tone, they may struggle to break their strong extensor pattern and bend at their hips without some help or support.



Positioning

Place your child in supported sitting. You may need to offer head support in the beginning and offer some recline to allow for easy breathing and to ease reflux. You may also need an anterior roll or strap across your child's chest to help stabilize them if they are learning to tolerate this position. You can also use a roll to stop their bottom from sliding forward.

If straightening (extensor pattern) is a problem, you may need to place the wedge behind your child to break up the extensor pattern or limit the range of motion your child has to discourage them from throwing themselves backwards. If your child has floppy muscles (low tone), use a roll across the front of their trunk to stop excessive bending (flexion). You may also need to use the small rolls (usually used for their head) as lateral supports to keep your child in midline. You can also use these small rolls for lumbar supports to help the formation of the lumbar curve. Remember these are just positioning examples - your therapist(s) will give you specific advice.





1. Object Tracking

Hold a brightly coloured toy or a high contrast image about 12-15" in front of your child's face. Move the object from left to right through a quarter circle, then back, going slowly enough so their eyes can follow it. Make the task a little more difficult by holding the object 15-18" from their face and moving it through a semi-circle to encourage head movements. They will learn to turn their head in sitting, using their hip and pelvic muscles to keep them steady against gravity, and using trunk muscles to rotate from one side to another.

Duration: _____

Frequency: _____

2. Reaching for toys

Encourage your child to reach for toys while sitting. At first, place toys within easy reach and encourage grasping, moving from hand to hand, banging together, and throwing (casting). Make this play more difficult by placing objects a little way in front of them, so they have to reach further forward to get them, and then encourage them to return to upright sitting.

Duration: _____

Frequency: _____





3. Reaching to the side

While sitting place toys to either side, encouraging reaching out to the side. All of these movements help to develop neck and trunk muscles, eye-hand co-ordination and weight shift. To make it more difficult, encourage them to reach across their body with their left hand to a toy on the right side, and vice versa.

Duration: _____

Frequency: _____

4. Side-sitting

Place your child's legs out in front of them and then bend their left knee so their left foot is beside their left thigh. Then encourage their right leg to bend in the same direction so both their lower legs are towards their left side and they are taking weight through their right hip. Use a roll around their hips to help give them some support and a strap can be used across their hips if they need more support. Encourage them to put their right hand flat on the mat and straighten their elbow. Then they can do reaching activities with their left hand. Alternate sides so your child has opportunity to work both sides of their body. Reaching forward in this position is a building block for being able to get from sitting into tummy lying or four-point kneeling.



Duration: _____

Frequency: _____

Top tip!

Games like popping bubbles or batting balloons are great in this position.





5. Reducing support

As your child's trunk control develops, you can reduce the support that is offered. Try removing the horseshoe cushion and using a roll positioned in a 'U' shape around their hips and legs. Use a strap across the top of their hips if they need a little bit more support.

Duration: _____

Frequency: _____



Kneeling

Clinical benefits of kneeling

Kneeling is a key position which works on muscle strength and enables children to move into and out of other positions. They can begin to move onto their hands and knees from tummy lying, and then in to a sitting position, and back again. They can also use kneeling to get into standing from a sitting position or from their hands and knees. There are a few different variations of kneeling, including low kneeling, high kneeling (tall kneeling), half kneeling and four-point kneeling.

Physical goals

High kneeling is a great position to work on trunk control and hip muscle strength, which is important for crawling and walking. Half kneeling is a tricky position but has numerous benefits such as improving muscle strength and working on postural control, balance and co-ordination. In four-point kneeling, your child is supporting their body weight against gravity using their extended arms and bent legs. This strengthens their hips and shoulders, which will improve their ability to sit well, and use their hands to play. This position encourages both sides of the body to work together

– in doing so, the brain is helped to make connections between the left and right sides – the wiring is improved, so to speak. And when your child weight bears through open hands, their thumbs are helped into the right position for using with the forefinger for a pincer grasp.

Cognitive goals

Weight bearing against gravity, as we have seen in all positions, helps your child to understand where their body is in relation to their environment, and also where each of their body parts are in relation to the other parts. Therefore, their spatial awareness, body awareness and coordination continue to develop. Some research has also shown that children who experience hands and knees activities have a better sense of object permanence – the understanding that something is still there, even if it cannot be seen.

Sensory goals

The palms of the hands are naturally sensitive, but some children seem to be over-sensitive and don't like to touch things. While it is normal to avoid touching things that don't feel nice to us, children who are over-sensitive to touch limit their

opportunities for exploring and learning. Weight bearing through extended arms and open palms exposes your child to numerous sensations and can help to improve tolerance for touch. Most activities can incorporate a sensory component with a little thought to the toy or the surface used. Use rattles, squeaky toys, brightly coloured balls, crackly paper etc to encourage your child's vision, hearing and sensation. If your child will tolerate it, let them carry out their activity sessions in their vest to allow the maximum amount of sensory feedback possible.

Common difficulties

As mentioned, kneeling is a difficult skill. For children with higher tone, they may struggle to break their strong extensor pattern and bend at their hips and knees without some help or support. For children with lower tone, kneeling is a challenging position as their base of support (parts of their body in contact with the floor) is reduced, which means they require more effort to keep themselves up against gravity.

Positioning

For high kneeling, help your child to bend their knees and place them facing the inside of the horseshoe cushion. Then encourage them to lift their bottom up off their legs and use a strap or a roll to help them keep this position. For four-point kneeling, start from a tummy lying (prone) position and help your child to bend their hips and knees, until they are in a four-point kneeling (crawling) position. You can place a roll for support under their tummy, or against their feet to prevent their legs sliding backwards. Remember these are just a few positioning examples - your therapist(s) will give you specific advice.





1. Low kneeling

Place your child in a low kneeling position by bending their knees and placing them facing the inside of the horseshoe cushion or rolls stacked on top of each other in a 'U' shape. Encourage them to reach forward for toys.

Duration: _____

Frequency: _____

2. High kneeling

In the same starting position as low kneeling, encourage your child to reach up and in doing so, their bottom will lift off their legs. You can use a strap or a roll to help them maintain this position.

Duration: _____

Frequency: _____

Top tip!

Use a floor table or bench in front of your child to put toys on to make it more fun!





3. Four-point kneeling

This position will be challenging for your child. The position itself may be enough to work on initially. Help them into the position - it is slightly easier at the start if their bottom is resting on their heels in the “bunny” position. Make the position harder by encouraging them to lift their bottom off their heels. When they can maintain a four-point kneeling position, remove the support underneath their chest.

Duration: _____

Frequency: _____

4. Reaching for toys

Place activities in front of them to start with. They will have to use one hand while balancing on their knees and other arm. Gradually move activities further away or to each side - they will have to reach out of their base of support. To make it more difficult, encourage them to reach across their body with their left hand to a toy on the right side, and vice versa. This improves the strength of their shoulders and hips, and encourages a rocking movement. This is a building block for crawling.

Duration: _____

Frequency: _____





5. Half kneeling

This a very tricky position for your child. When your child is in high kneeling, help them to bring one leg out in front of them and place their foot flat on the floor. You can place a roll underneath their front leg for support. Remember to alternate sides so your child has opportunity to work both sides of their body. This position is a building block for being able to get from kneeling into standing.

Duration: _____

Frequency: _____



Top tip!

As this position is difficult, just staying still is enough of a challenge. Counting games or 'musical statues' are good activities to do.

A young boy with glasses is smiling and looking down at a globe on a table. He is wearing a plaid shirt. There are three colorful cloud icons (red, green, and yellow) scattered around the globe. The background is a blurred indoor setting, possibly a classroom or library, with bookshelves visible. The entire image has a blue overlay.

Case Story

Meet Oisín

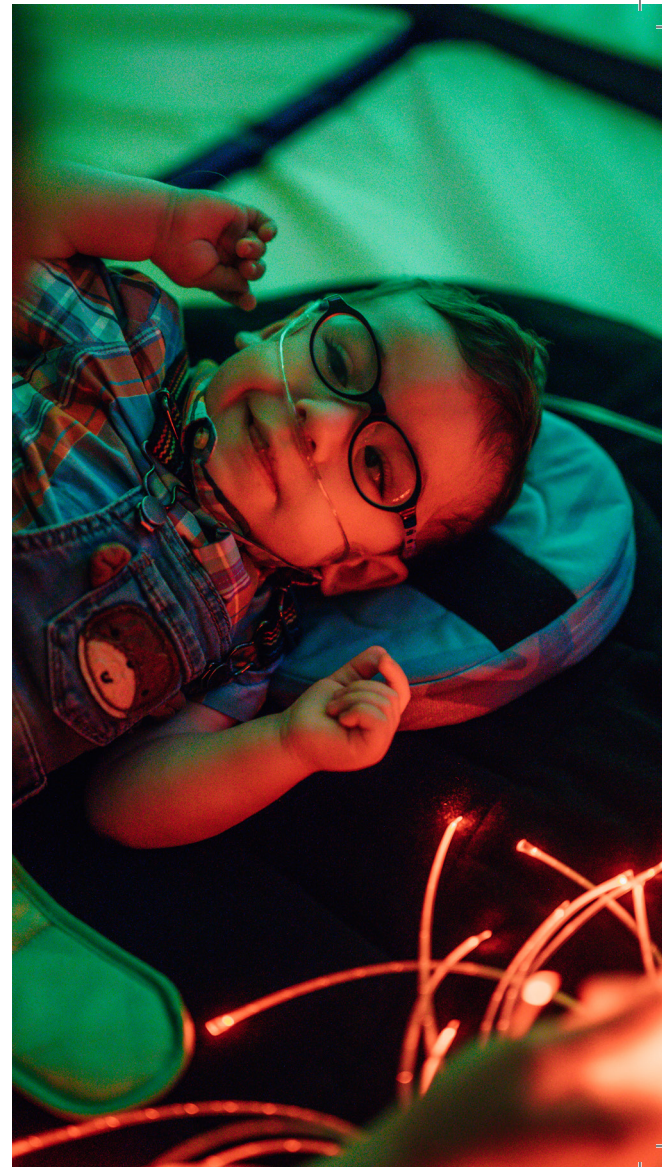
Oisín is 22 months old. He was born 15 weeks early and was found to have Periventricular Leukomalacia (PVL) on a brain scan at 6 weeks old. He has Chronic Lung Disease, which he requires oxygen for. He also is PEG fed and has Retinopathy due to prematurity. Oisín's parents have been told that he is likely to have evolving quadriplegic Cerebral Palsy.

Oisín's assessment

Oisín had good head control but had lower tone in his trunk with intermittent periods of high tone in his legs and right arm. He had reduced use of his right upper limb, which made weight-bearing through it tricky. He was able to ring sit for a few seconds but would lose his balance and be unable to save himself.

Therapy aims

Oisín's aims were to improve his weight-bearing ability through his upper limbs, work on using both hands together and continue to develop sitting balance and trunk strength.



1. Tummy Lying

Oisín struggled to bend his right elbow when he was in prone, due to higher tone in his right arm. With some support given at his pelvis and a roll underneath his chest, he was able to weight-bear through both arms and work on his shoulder stability.



2. Side Lying

When lying on his left side, gravity helped Oisín's right hand come down to meet his left hand so he was able to work on two-handed play.



3. Sitting

As Oisín had just started working on his sitting balance, the activities that he completed whilst in this position were kept quite simple. By following an object from left to right, he was practicing moving his head whilst without losing his balance and therefore developing his trunk strength.



Review

By using the EAS, Oisín was able to work in all these different positions at home so that when he was reviewed by his physiotherapist, he was found to be improving on his gross and fine motor skills.



Oisín having some therapy fun!



Swinging into therapy fun!



Oliver can do therapy at home too!





Oisín having fun at tummy time!



Harper enjoying relax time!



Isla loves sensory play!

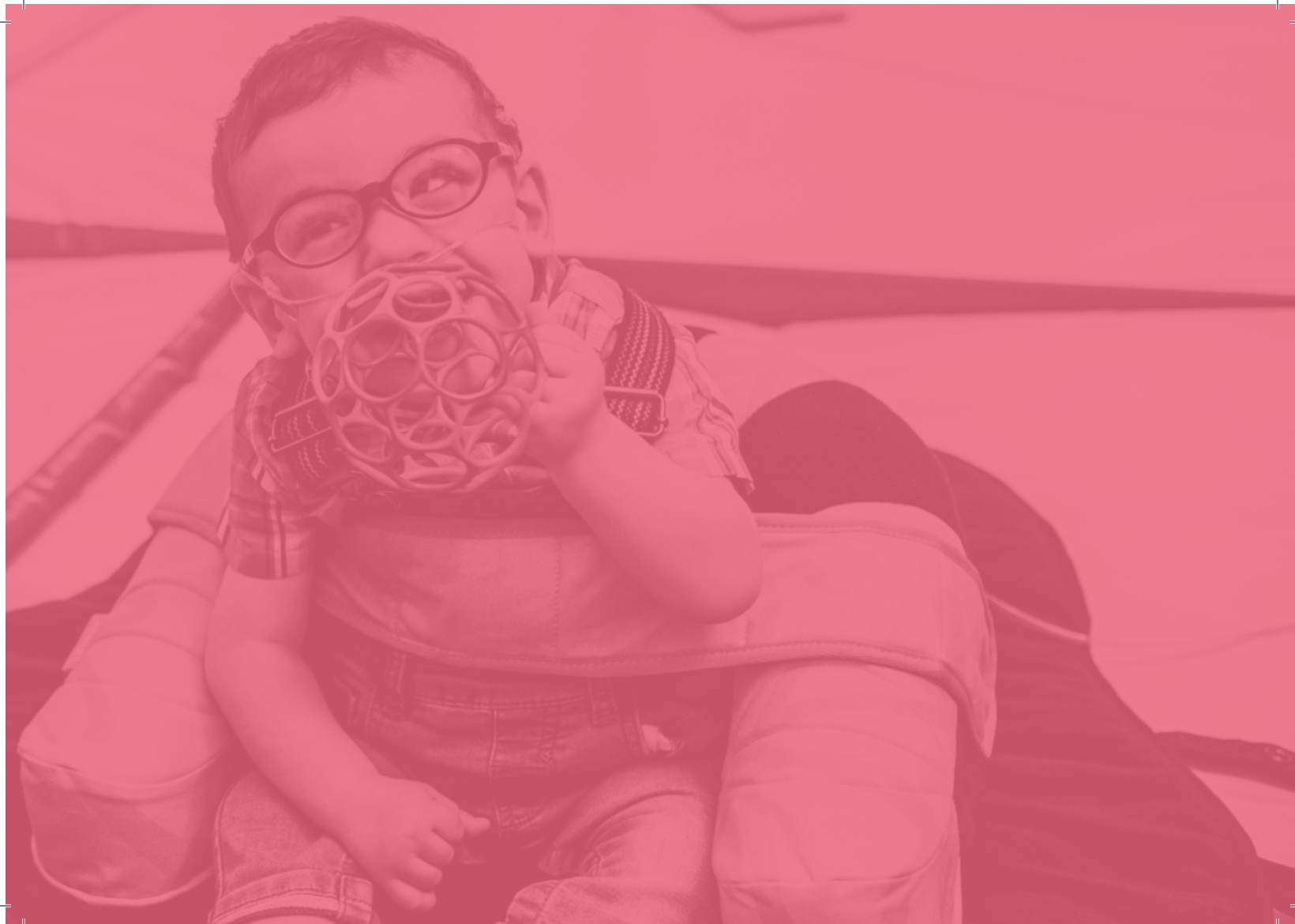


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