

activity
development
programme

LECKEY[®] 
Squiggles

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.



The Squiggles Early Activity System is designed to offer a range of therapeutic positions and activity suggestions for early intervention. This manual shows how you can quickly, easily and safely make use of all the functions. The instructions on safety and maintenance will ensure that you will enjoy the use of this product for a long time.

Intended Use

The Squiggles Early Activity System has been designed for special care babies from birth to 36 months for Early Intervention use at home or in the care environment.

Declaration of Conformity

James Leckey Design Ltd. as manufacturer with sole responsibility declares that the Leckey Squiggles Early Activity System conforms to the requirements of the 93/42/EEC Guidelines and EN12182 Technical aids for disabled persons general requirements and test methods.

Terms of Warranty

The warranty applies only when the product is used according to the specified conditions and for the intended purposes, following all manufacturers' recommendations (also see general terms of sale, delivery and payment). A two year warranty is provided on all Leckey manufactured products and components.

Additional Warranty Information

For goods provided by Sunrise Medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for

compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits to you given by this warranty are in addition to your other rights and remedies under a law in relation to the goods to which the warranty relates.

Product History Record

Your Leckey product is classified as a Class 1 Medical device and as such should only be prescribed, set up or reissued for use by a technically competent person who has been trained in the use of this product. Leckey recommend that a written record is maintained to provide details of all setups, reissue inspections and annual inspections of this product.

Product Training Record

Your Leckey product is a prescribed Class 1 Medical Device and as such Leckey recommend that parents, teachers and carers using the equipment should be made aware of the following sections.

Setup and Safety Information Technical and Maintenance Information

Leckey recommend that a written record is maintained of all those who have trained in the correct use of this product.

Safety Information

Setup Information

Check parts

Congratulations on purchasing your Squiggles Early Activity System. When opening the box, take care not to cut through the box as you may damage some of the parts contained inside. All of the parts will be contained in polythene bags with each one clearly labelled. Carefully remove them from the box and check you have all the parts you have ordered.

Safety First

Keep polythene bags away from children.

Components

All the components will arrive ready for use. Simply unfasten the mat and fold flat, remove the rolls and wedges from the Squiggles bag and you are ready to start using the product.

The activity suggestions within the five key positions, back lying (supine), tummy lying (prone), side lying, floor sitting (long sitting) and hands and knees (four point kneeling) describe in detail how to setup and make full use of the system.

1. Always read instructions fully before use.

2. Users should not be left unattended at any time whilst using Leckey equipment.

3. Only use Leckey approved components with your product. Never modify the product in any way. Failure to follow instructions may put the user or carer at risk and will invalidate the warranty on the product.

4. If in any doubt about the safe use of your Leckey product or if any parts should fail, please cease using the product and contact our customer services department or your local dealer as soon as possible.

5. Always ensure the user is secure in the product.

6. Always use the product on a level surface.

7. Always use the Floor mat as a base of support and never use the other components on their own.

8. Always ensure the hooky Velcro® components are faced away from the user at all times.

9. Leckey products comply with fire safety regulations in accordance with EN12182. However, the product should be kept away from all direct sources of heat including naked flames, cigarettes, electric and gas heaters.

10. Clean the product regularly. Do not use abrasive cleaners. Carry out maintenance checks on a regular basis to ensure your product is in good working condition.

11. The product is designed for indoor use and when not in use should be stored in a dry place that is not subjected to extremes of temperature. The safe operating temperature range of the product is +5 to +40 degrees Celsius.

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 development. 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 his head up before he will learn to sit. He will swipe randomly at toys before learning to open his hand and pick them up. He will focus on things close up before he learns to turn his head and eyes to follow moving objects.

When development is delayed

For some babies, their newborn limitations are not easily overcome by time alone. If a child's development is delayed for whatever reason, it means he is likely to acquire skills more slowly, or the extent to which he masters 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 benefits. For some children these can include less irritability^{3,5}, and improved physical, sensory and independence skills^{5,6}. For some families these can include improved bonding and interaction with their child^{3,5,7}, decreased anxiety^{3,5}, and better information, resources and support^{4,8,9,10}.

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 child¹¹. So parents and families, working together with therapists towards agreed developmental goals for their child, have the potential to achieve the best results possible.

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, grandparent, sister or brother, friend.....the list is endless.....you will be able to help your little one achieve his potential just by understanding why you are playing certain games in certain positions. We will look at this in more detail later on.

The small superscript numbers (- etc) are the reference sources for each research study referred to. See the Reference section on inside back cover for further information.

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.

(*Patent Pending)

The Five Positions

The Early Activity System supports purposeful play in:

Back lying (supine)

Tummy lying (prone)

Side lying

Floor sitting (long sitting)

Hands and knees (four-point kneeling)

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), his 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!

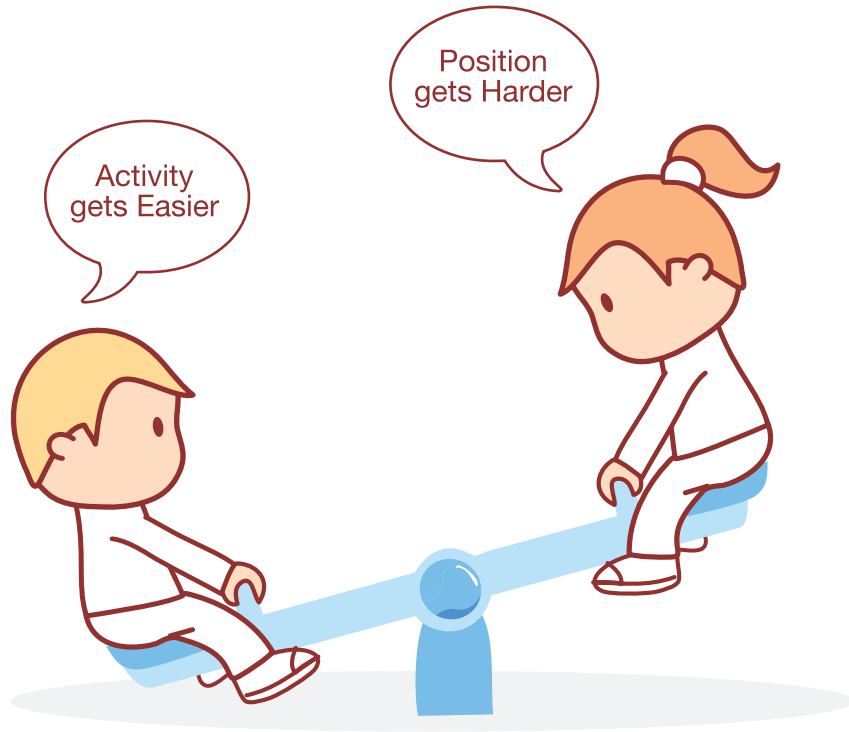
early
activity
system

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 he can manage. For example, if he finds it hard to sit up, most of his energies will be going towards sitting up – so choose a simple activity for him. But if your 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.



Some points to remember about how your child learns new skills

Regardless of the position you place your child in, or the play activity you are carrying out, there are things you can bear in mind to help the process:

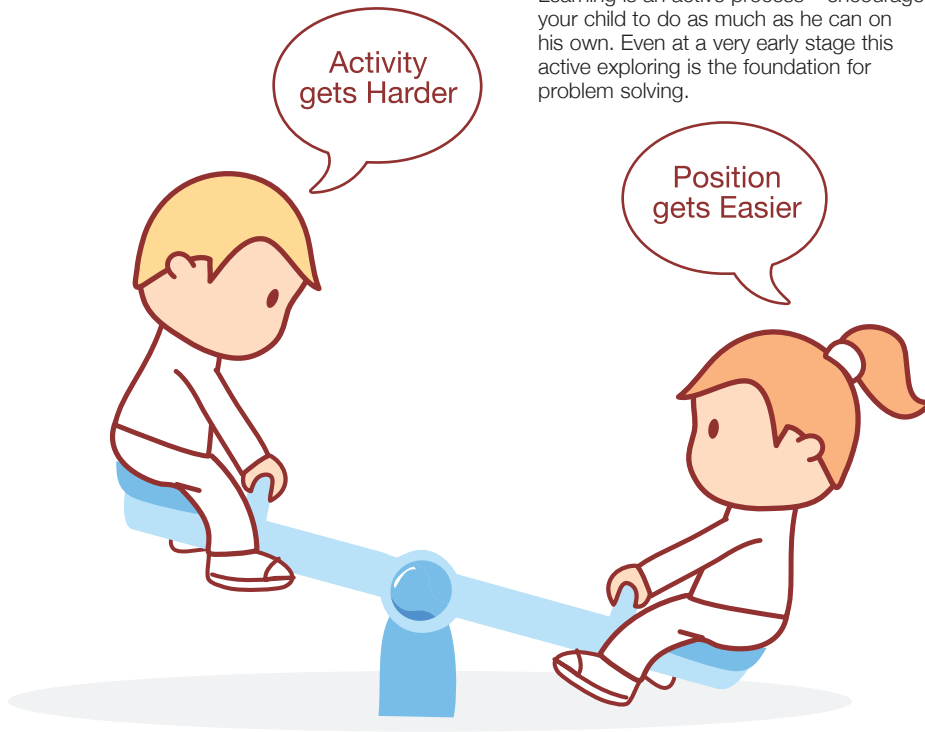
Learning is an active process – encourage your child to do as much as he can on his own. Even at a very early stage this active exploring is the foundation for problem solving.

Motivation is the key – use toys and activities which you know your child is interested in, especially if the position is not a favourite one. Use small achievable steps to motivate your child.

Practice makes perfect – it seems obvious, but think about typically developing children – they repeat tasks over and over until they have mastered them. It may not be easy for your child to achieve a new skill, so be patient and don't worry if the skill doesn't come quickly. Check with your therapist about the frequency and length of your play sessions.

We do not yet understand fully whether learning transfers from one activity to another. Therefore, don't be worried if an activity which can be accomplished in one position needs to be practised again when a new position is introduced.

Feedback helps learning – at early developmental stages this includes your facial expressions, clapping, etc. Later on it may include spoken praise, but be cautious that your enthusiastic feedback doesn't distract your child!



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.



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.

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.

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.

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.

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.

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.

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 x Cushioned Floor
Mat

| 1 x Trunk Wedge
1 x Sitting Support

| 1 x Head Support

| 2 x Positioning
Straps

| 4 x Flexible Rolls



1

1. Back lying (supine)



Clinical reasons for back lying

This is the most fundamental of developmental positions. When a child lies on his back, his 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

Baby will benefit from strengthened neck, tummy, shoulder and hip bending (flexor) muscles because he has to lift his head, arms and legs up against gravity. It may also help to break up a pattern of straightening (extension) 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, baby may be able to reach and accidentally swipe at toys dangling from a gym or held above his face. With practice, this random action gradually becomes more deliberate, developing a realisation of “cause and effect”. Likewise, he may learn to kick musical toys placed near his feet. When baby brings his hands and feet together to explore, he is learning about his own body parts and their relationship to each other. This forms the basis of body awareness and co-ordination.

Sensory goals

When lying on his back it is easiest for baby to focus his eyes on a dangling object. First he learns to follow it through quarter of a circle using just his eye movements, then through half a circle moving his head as well as his eyes. As he becomes aware of his own hands and feet and takes them to his mouth, his eye-hand co-ordination and fine motor skills are developing. Even the sensations that baby receives through the back of his body will be helping him to develop a sense of front and back. Likewise, the feedback that baby receives through the joints and muscles in his limbs (known as proprioception) gives important information about his body position in relation to his environment.

Transitions

Rolling is the skill which enables a child to move from back lying into tummy lying. It develops in two stages. Some children with developmental delay “log roll” - their whole body moves as one piece. 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.

Positioning guidelines

For back lying activities your child should be placed on his back with his head supported on a wedge to encourage chin tuck. Place a roll under his knees and smaller rolls at either side of his chest to keep him stable. Try to ensure that his head starts and finishes in the midline position. Remember this is just one positioning example - your therapist(s) will give you specific advice.

1. Back lying (supine)

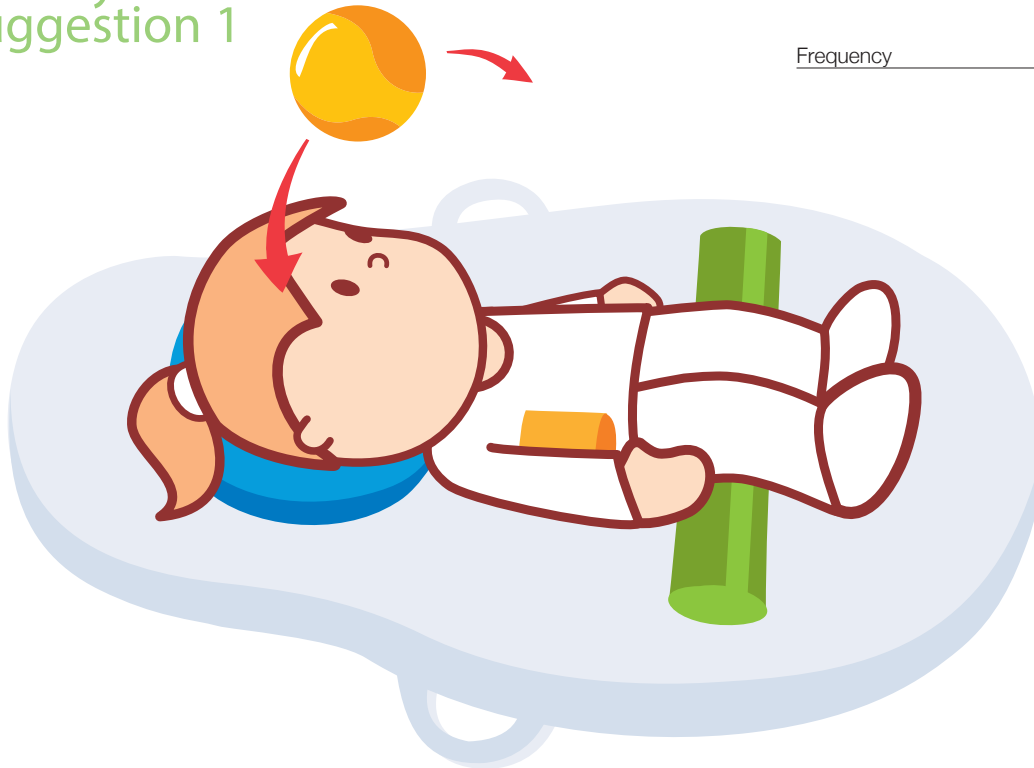
Activity Suggestion 1

Hold a brightly coloured object (such as a scarf or pom-pom) about 12-15" above baby's face. Move the object from left to right through a quarter circle, then back, going slowly enough so baby's eyes can follow it. Make the task a little more difficult by holding the object 15-18" from baby's face and moving it through a semi-circle to encourage head movements.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



1. Back lying (supine)

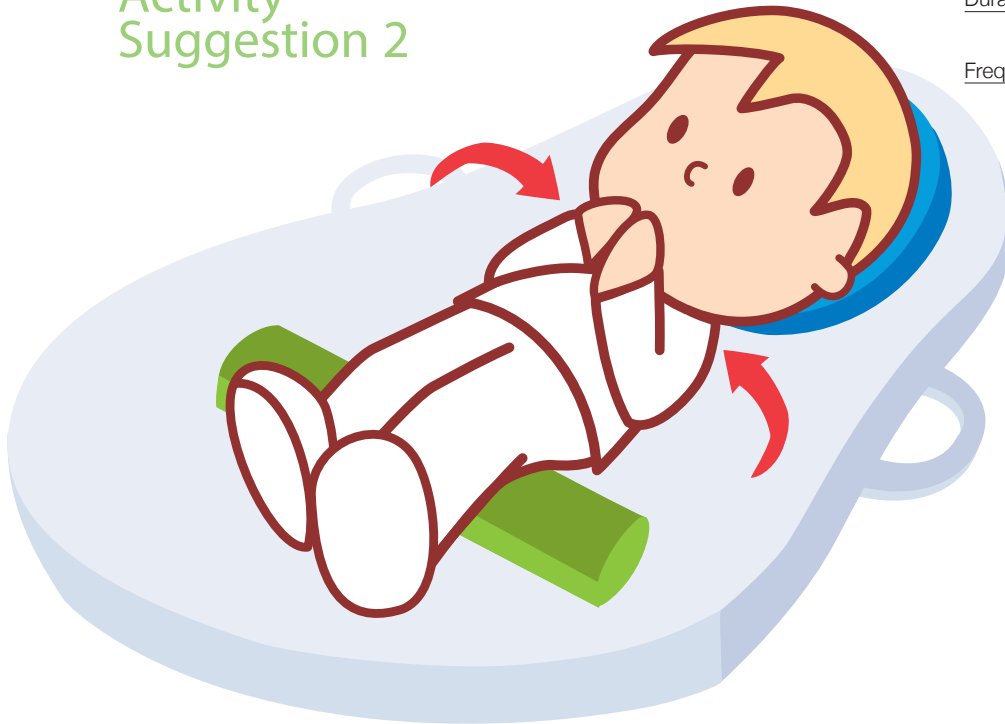
Activity Suggestion 2

Encourage your child to bring his hands together on his chest. Place your hands behind his shoulders to encourage his arms to come forward.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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1. Back lying (supine)

Activity Suggestion 3

With the same set-up as described in the positioning guidelines, use the hip positioning strap to stabilise baby's hips. Encourage her to reach across her body with her left hand to a toy on the right side, and vice versa. Place your hand behind her shoulder to assist if necessary. To make this a bit more difficult, remove the pelvic strap and move the toy a little further out of reach. Your child should need to shift her weight at her hips to reach the toy. This is a building block for the transition of rolling later on.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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1. Back lying (supine)

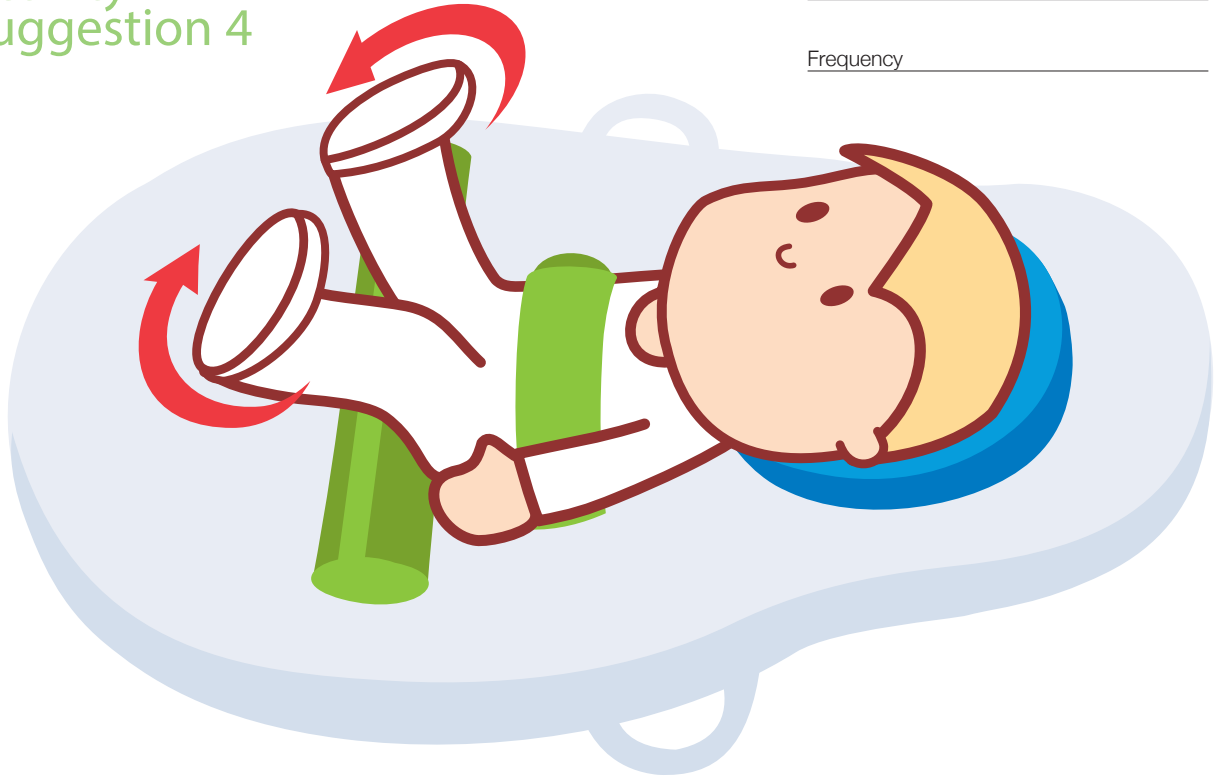
Activity Suggestion 4

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

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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1. Back lying (supine)

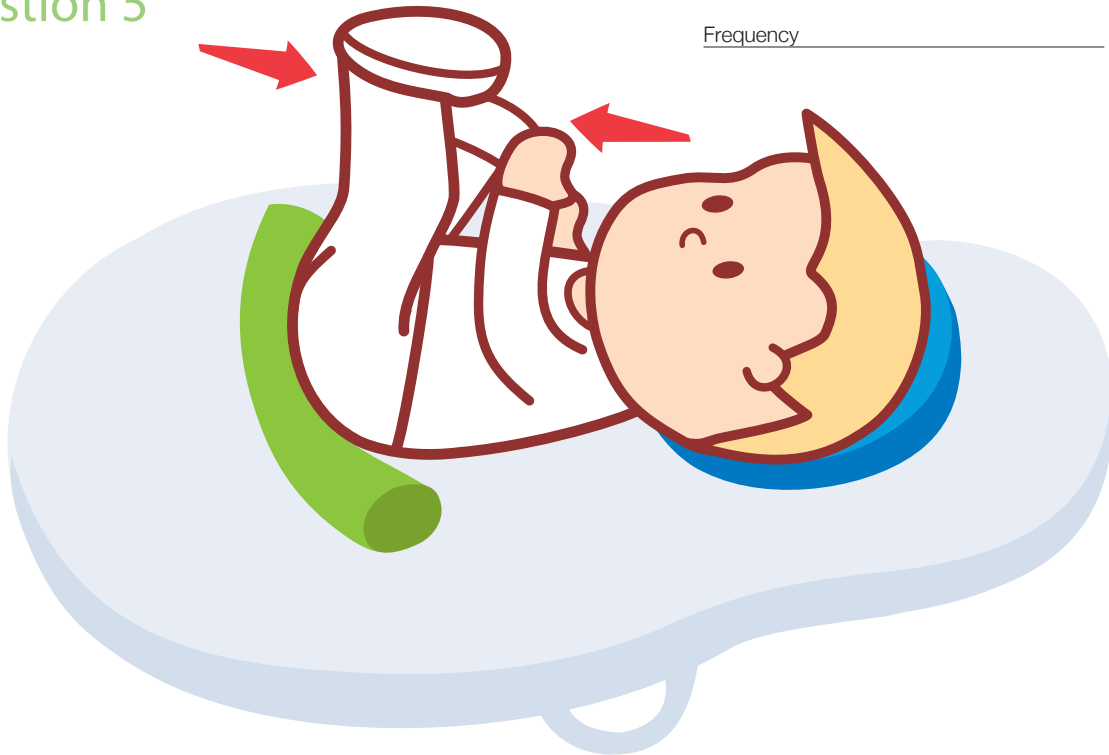
Activity Suggestion 5

Bring baby's hands and feet together.
This midline position is good for symmetry,
and baby is beginning to learn to use both
sides of his body together. This movement
is also a building block for rolling later on.

Most activities can incorporate a sensory component with
a little thought to the toy or the surface used. Use rattles,
squeeze toys, brightly coloured balls, crackly paper etc to
encourage baby's vision, hearing and sensation. If your
baby will tolerate it, let him carry out his activity sessions
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feedback possible. Your occupational therapist can
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1. Back lying (supine)

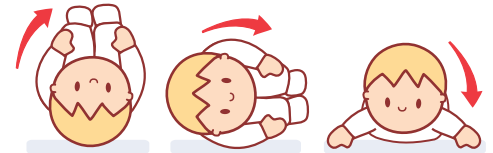
Activity Suggestion 6

To encourage rolling from back lying to tummy lying, place baby on his back and bring his hands and feet together in midline. Encourage him to roll to one side into side lying. From this position, help baby's hips to turn slightly. Supporting his hips, use an exciting toy placed near his head to encourage him to turn his head and reach for the toy. Once baby's head and shoulders turn, baby will roll onto his tummy. Help him prop onto his elbows to make sure his airway is clear.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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1. Back lying (supine)

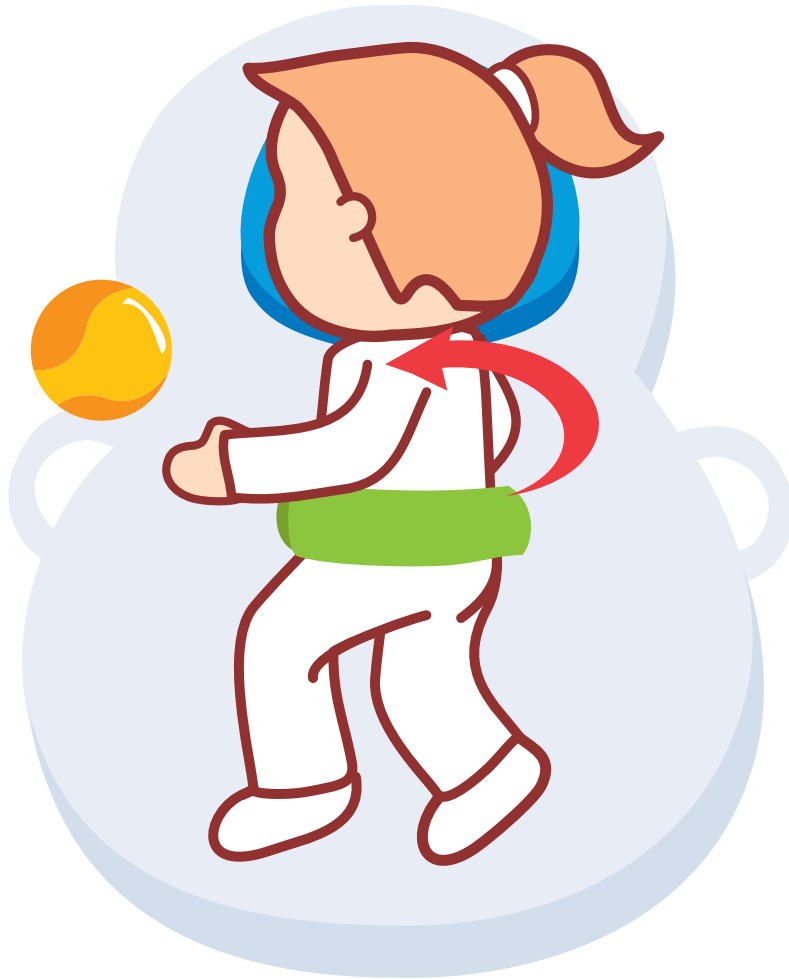
Activity Suggestion 7

Make rolling a little more difficult by holding the lower half of the body steady using your hands or the positioning strap. Encourage the child to roll leading with her top half. Position toys just out of reach of baby. As her top half turns, allow her lower half to follow.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



2

2. Tummy lying (prone)



Clinical reasons for tummy lying

Research has shown that about one half of typically developing infants show some delayed development by six months of age if they are never placed on their tummies when awake¹². In addition, the back muscles (extensors) of children with developmental delay tend to be weaker². This makes it especially important to have some daily tummy time. It is a more difficult position for baby, because to see around her, she has to lift her head up clear from the surface. Babies' 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! Remember to use simpler activities at first.

Physical goals

The therapeutic and developmental benefits of lying in this position have been reported in research studies as improved upper body strength, shoulder girdle strength and improved extension (straightening) movements^{13,14,15}. Lifting baby's head and shoulders up against gravity helps to strengthen the straightening (extensor) muscles of the trunk. This is helpful for children with floppy (low tone) muscles. 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. Foot development can also be encouraged in this position, with carefully placed rolls or toys – see the activity suggestions later on.

Cognitive goals

In tummy lying, baby needs to have developed reasonable head control before she will be able to prop on her 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 baby learns to hold her head up and prop on her forearms, her shoulders and arms are giving sensory feedback about their position in relation to her body and the environment. As this works together with her eyes and her environment when she is reaching for toys, her spatial awareness is also developing.

Sensory goals

When lying on her tummy, baby can gain a sense of security. She continues to develop her visual focusing and tracking, and her sense of body awareness. With reasonable head control, baby will be able to play for some time in this position, continuing to strengthen her muscles, while exploring her environment and looking around.

Transitions

Rolling is the skill which enables a child to move from back lying into tummy lying. It develops in two stages. Some children with developmental delay “log roll” - their whole body moves as one piece. 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 later for crawling.

Positioning guidelines

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

2. Tummy lying (prone)

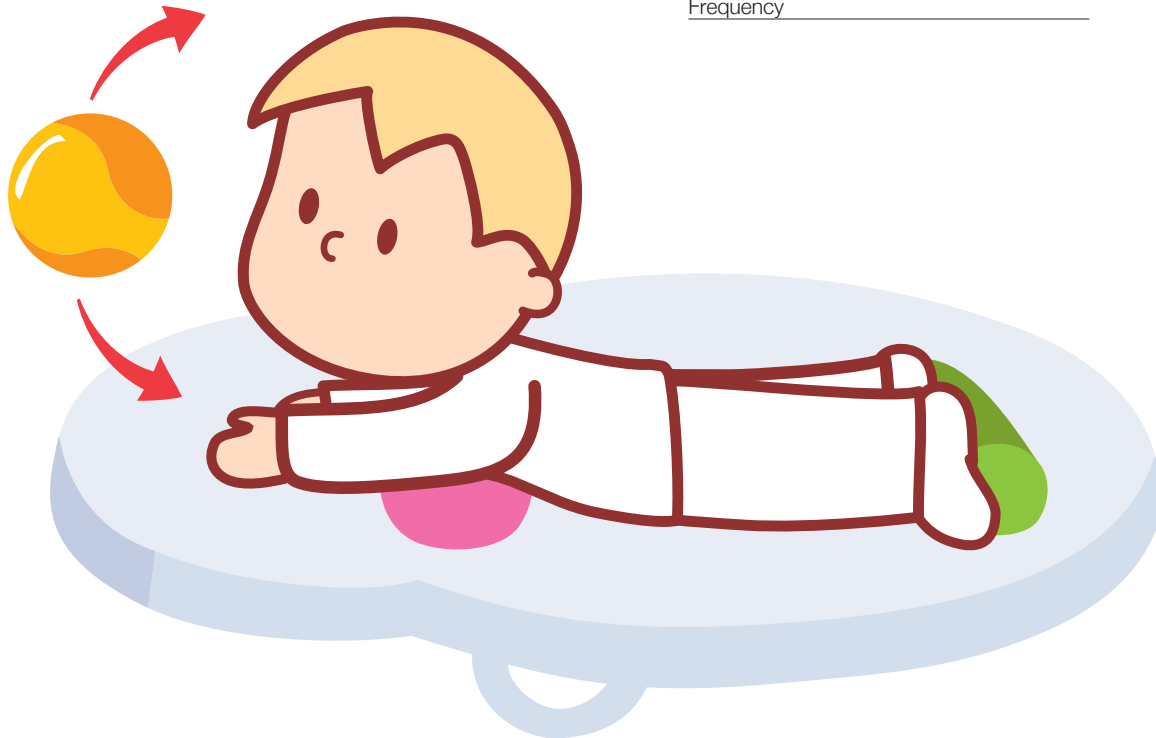
Activity Suggestion 1

Encourage your child to lift his head up – use a favourite toy to motivate him. To make this a little more difficult, try moving the toy slowly from side to side, so baby has to turn his head to follow it.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



2. Tummy lying (prone)

Activity Suggestion 2

Encourage baby to “push-up” on straightened (extended) arms with open hands. This will strengthen her shoulder and upper trunk, and encourages weight bearing through her arms – a building block for four-point kneeling. It is also a very early building block for finer motor skills which depend on stability at the shoulder for the control needed.

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 baby’s vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby’s sensory tolerance.

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2. Tummy lying (prone)

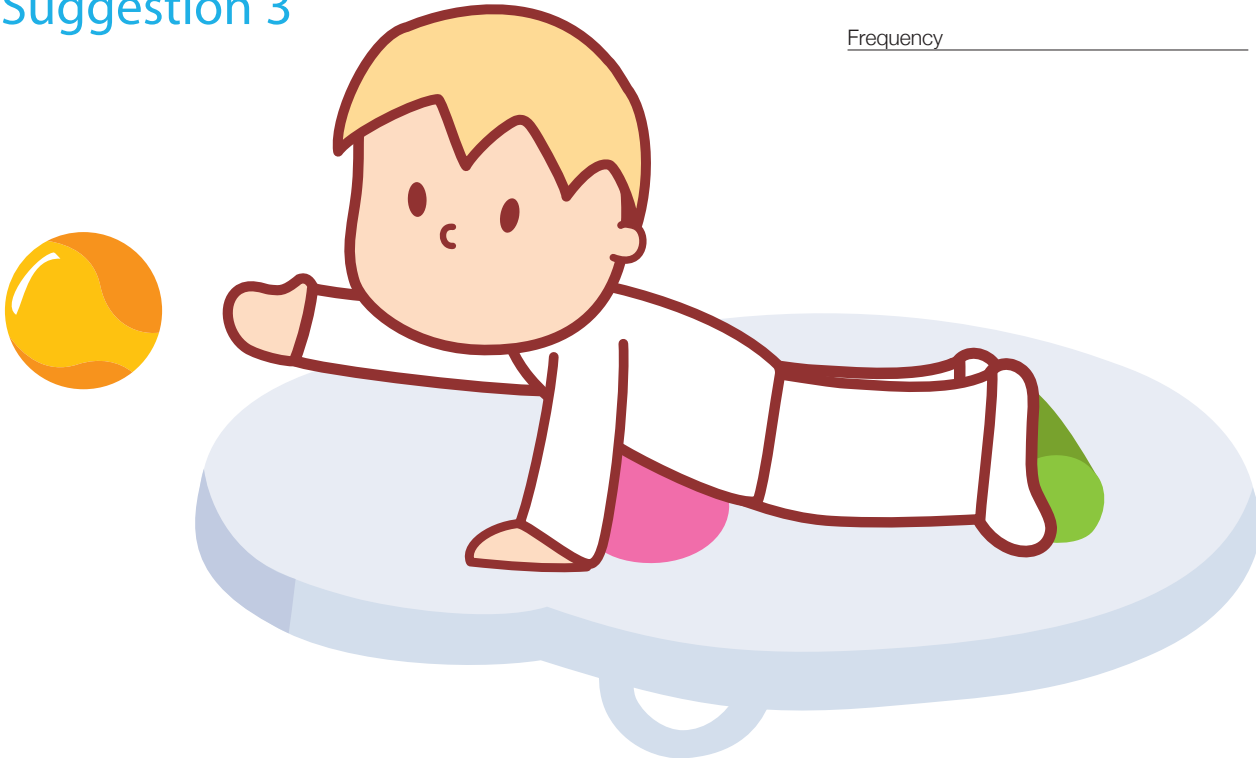
Activity Suggestion 3

While baby has his head lifted up, encourage him to reach and grasp with one hand, then the other. This helps to develop trunk and lower spine extension – the start of the lumbar curve. The weight shift involved when using one hand at a time uses more complex muscle control – this helps later for sitting up and using the arms against gravity.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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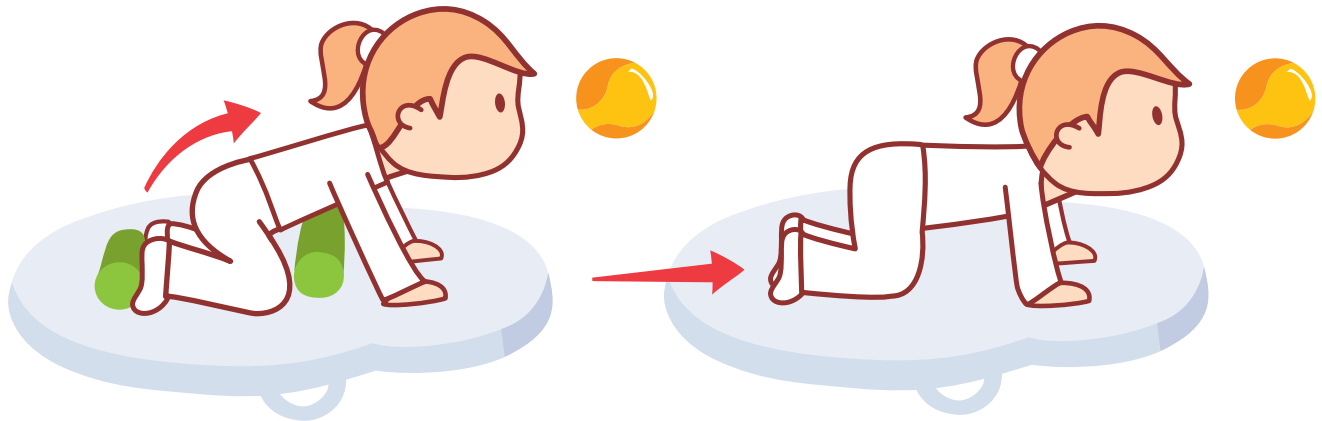
Activity Suggestion 4

Place your child in a curled up position on her tummy, ensuring her airway is clear. Make sure her hips, knees and ankles are bent (flexed), and place a roll firmly behind her feet. Show her an exciting toy, and she should start kicking, pushing herself forward. Tickle baby's feet, and place them against the roll to encourage movement. This is a building block for commando (belly) crawling and four point crawling.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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2. Tummy lying (prone)

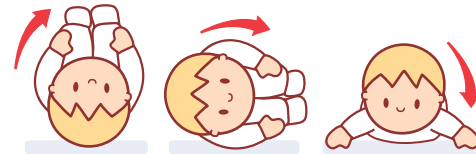
Activity Suggestion 5

To encourage rolling from back lying to tummy lying, place baby on his back and bring his hands and feet together in midline. Encourage him to roll to one side into side lying. From this position, help baby's hips to turn slightly. Supporting his hips, use an exciting toy placed near his head to encourage him to turn his head and reach for the toy. Once baby's head and shoulders turn, baby will roll onto his tummy. Help him prop onto his elbows to make sure his airway is clear.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

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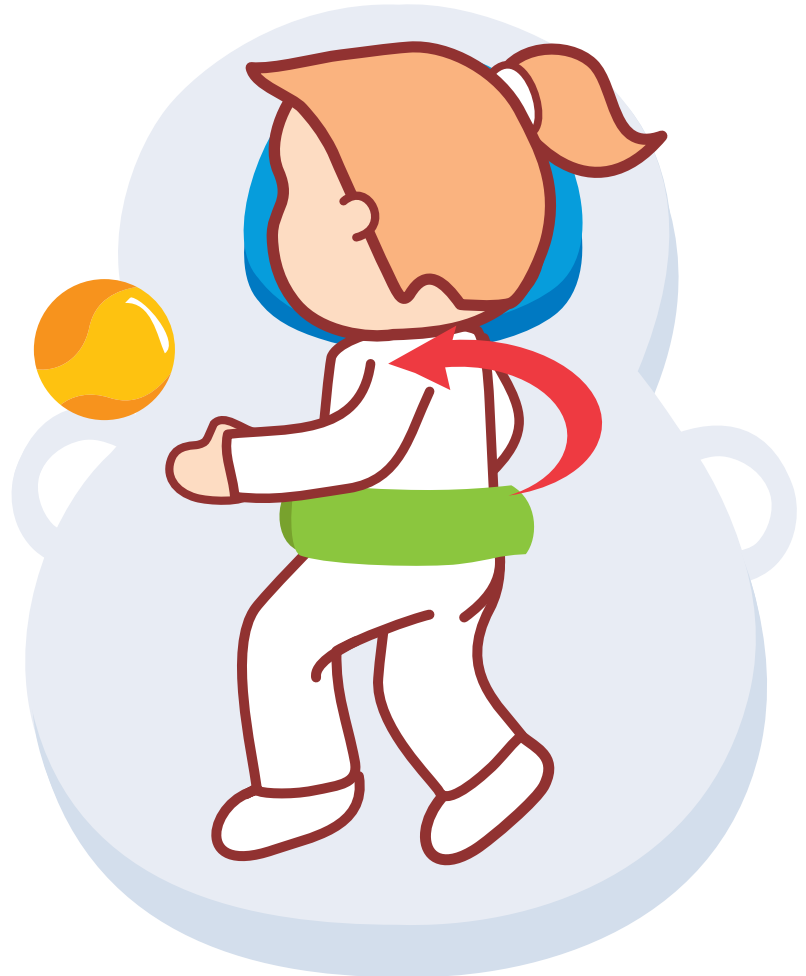
Activity Suggestion 6

Make rolling a little more difficult by holding the lower half of the body steady using your hands or the positioning strap. Encourage the child to roll leading with her top half. Position toys just out of reach of baby. As her top half turns, allow her lower half to follow.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

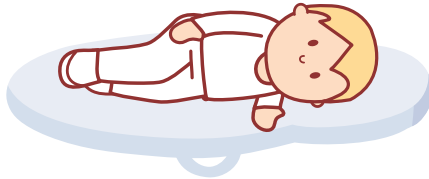
Duration _____

Frequency _____



3

3. Side lying



Clinical reasons for side lying

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 can't achieve this). Gravity helps bring baby'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 baby 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 baby's symmetry, side lying reduces the effects of these, meaning that baby is able to experience more usual movement sensations. He can also use his eyes more efficiently to follow objects when his head position is more central in relation to the rest of his body.

Transitions

Rolling is the skill which enables a child to move from back lying into tummy lying. It develops in two stages. Some children with developmental delay "log roll" – their whole body moves as one piece. The aim is to develop "segmental rolling" – when the head turns first, followed by the shoulders, then trunk, hips, legs and feet.

Positioning guidelines

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

3. Side lying

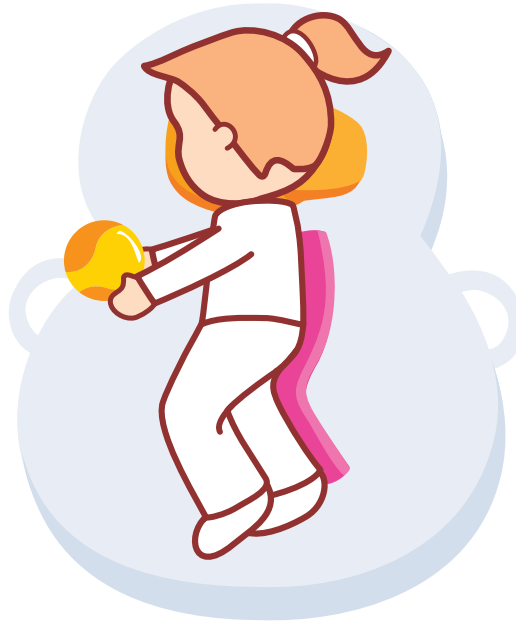
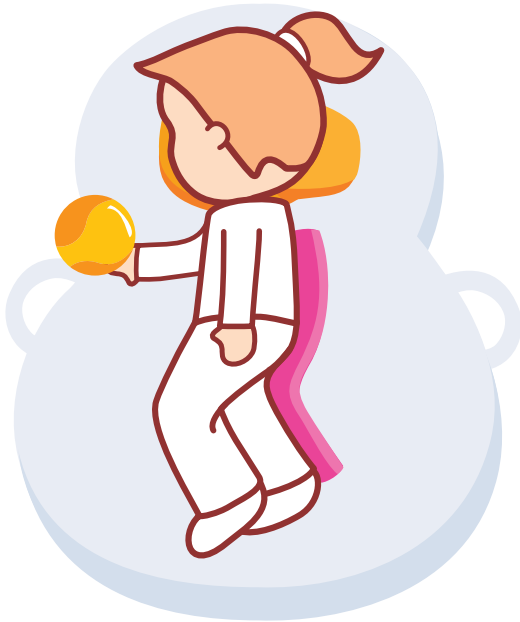
Place toys within reach of baby's hands, encouraging swiping, reaching and exploration with two hands, passing toys from hand to hand, or banging toys together.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Activity Suggestion 1

Duration _____

Frequency _____



3. Side lying

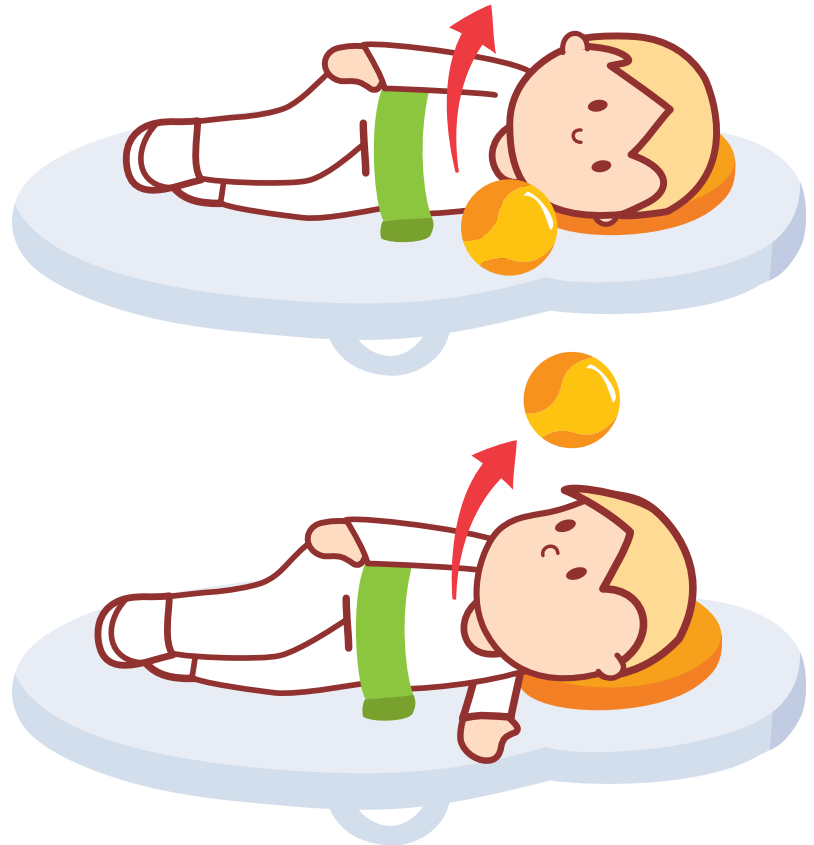
Activity Suggestion 2

Hold a brightly coloured object (such as a scarf or pom-pom) about 12-15" in front of baby's face. Move the object up to a quarter circle, then back, going slowly enough so baby's eyes can follow it. Alternate sides so baby's head learns to move in both directions.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



3. Side lying

Activity Suggestion 3

Encourage your child to bring her hands together on her chest. Place your hands behind her uppermost shoulder to encourage her arm to come forward.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



3. Side lying

Activity Suggestion 4

Bring baby's hands and feet together.
This midline position is good for symmetry,
and baby is beginning to learn to use
both sides of his body together.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



4

4. Floor sitting



Clinical reasons for sitting

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 ability¹⁶. This helps to reinforce to us the importance of the typical developmental sequence.

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. Baby can be encouraged to reach, grasp and release toys, bang blocks together in midline, and throw things! When neck muscles are stronger, baby can now turn his head through three quarters of a circle. 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.

Cognitive goals

When a child lies down, he is able to view the world in a horizontal plane. But when he sits up, he can see the world from a vertical plane. This helps him to realise that his environment is three dimensional – he is 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. Baby is becoming much more aware of the others around him and this leads to an increased interest in his environment. He will be developing a sense of object permanence – the awareness that toys are there even if he cannot see them – he may even look for things he has thrown away!

Sensory goals

With head control developing well, and when securely supported in a sitting posture, baby'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. Baby will be learning about rough and smooth, light and heavy, big and small, up and down.

Transitions

To be able to move in and out of floor sitting independently, children usually have to be able to move from a tummy lying position into hands and knees position. Please refer to both “tummy lying” and “hands and knees” sections for further information.

Positioning guidelines

Place your child in supported sitting. This activity can be done as early as 4 months, as soon as the child can clear their airway (turn their head to the side) in tummy lying. 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 the child's chest to help stabilize the child who is just learning to tolerate this position. You can also use a roll to stop the bottom from sliding forward.

If straightening (extensor pattern) is a problem, you may need to place the wedge behind the child to break up the extension pattern or limit the range of motion the child has to discourage them from throwing themselves backwards

If the 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 the head) as lateral supports to keep the 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.

4. Floor sitting

Activity Suggestion 1

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).

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



4. Floor sitting

Activity Suggestion 2

Encourage your child to reach for toys while sitting. Make this play more difficult by placing objects a little way in front of baby, so he has to reach further forward to get them.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



4. Floor sitting

Activity Suggestion 3

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.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



4. Floor sitting

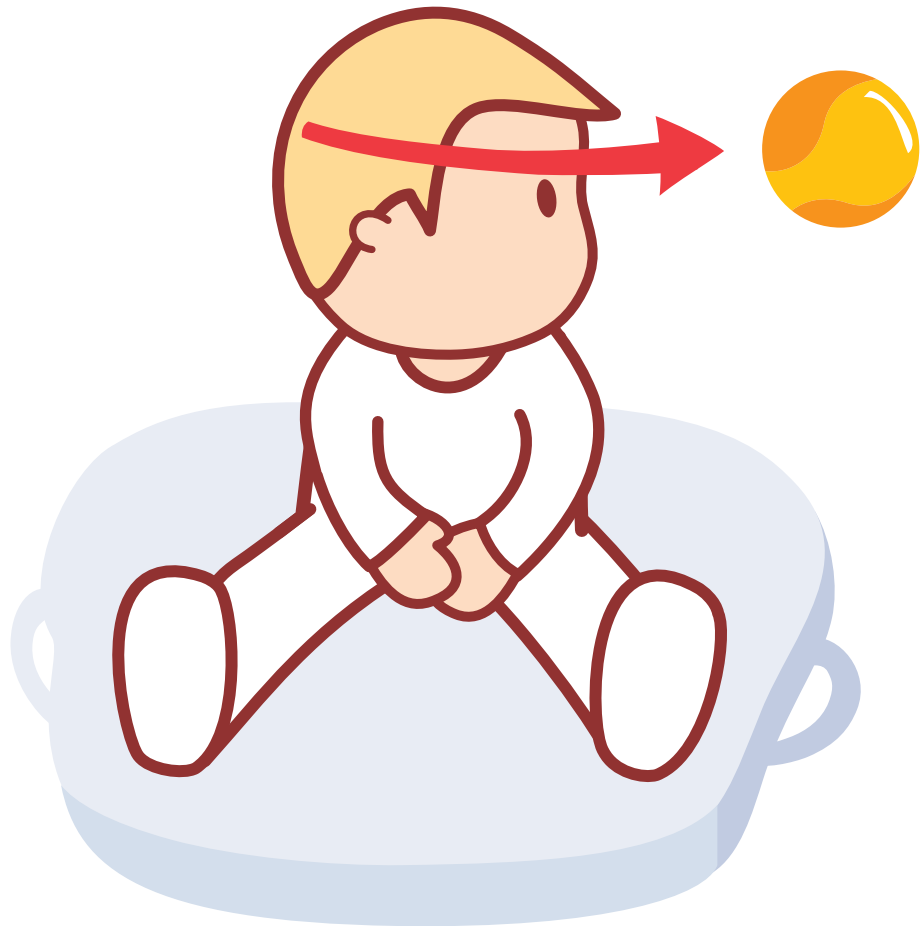
Activity Suggestion 4

Hold a brightly coloured object 12-15" in front of your child's face. Move slowly in a semi circle. Baby will learn to turn his head in sitting, using his hip and pelvic muscles to keep him steady against gravity, and using trunk muscles to rotate from one side to another.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



5

5. Hands and knees (four-point kneeling)



Clinical reasons for hands and knees

Hands and knees is a position which enables children to move into and out of other positions. They can begin to move onto hands and knees from tummy lying, and then in to a sitting position. Depending on each child's capabilities, some will learn to use hands and knees as a building block for movement – they may go on to be able to tall kneel (hands off the floor), or even begin to crawl.

Physical goals

In the four-point position, baby is supporting her body weight against gravity using her extended arms and bent legs. This strengthens her hips and shoulders, which will improve her ability to sit well, and use her hands to play. It will also be useful if she later crawls. 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 baby weight bears through open hands, her 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 baby to understand where her body is in relation to her environment, and also where each of her body parts are in relation to the other parts. Therefore, baby's 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 seen¹⁷.

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 baby to numerous sensations and can help to improve tolerance for touch. Therapists call this "sensory integration" – speak to your occupational therapist for further advice if you have worries about your child's sensory tolerance.

Positioning guidelines

Starting from a tummy lying (prone) position, help baby to bend her hips and knees, until she is in a kneeling position. You can place a roll for support under her tummy, or against her feet to prevent her legs sliding backwards. Remember this is just one positioning example - your therapist(s) will give you specific advice.

5. Hands and knees (four-point kneeling)

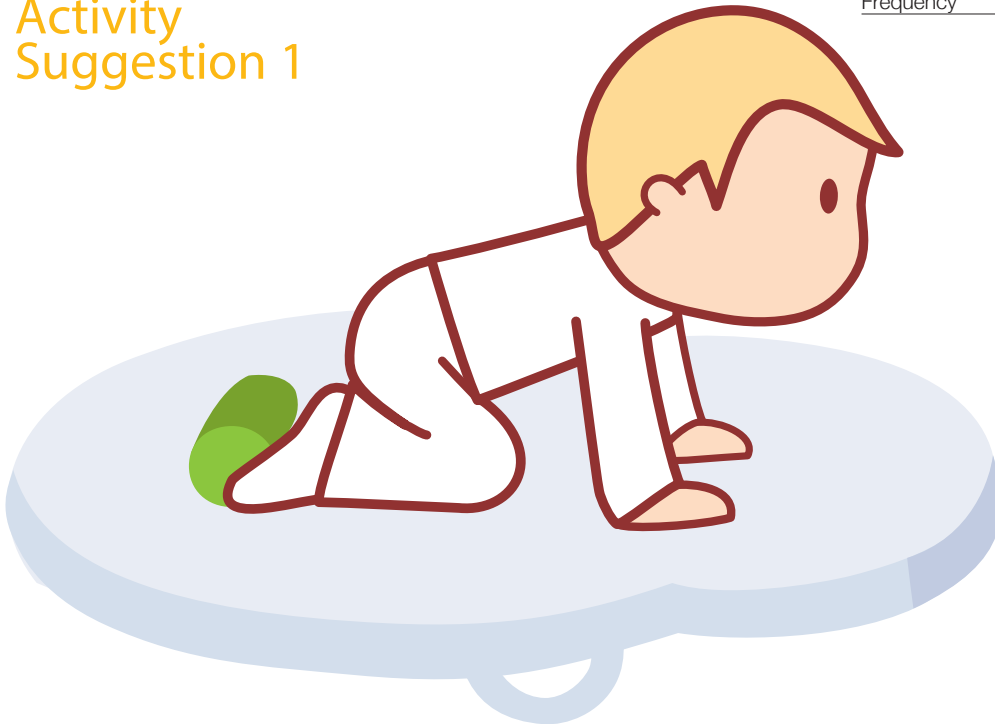
Activity Suggestion 1

This position will be challenging for baby. The position itself may be enough to work on initially. Help baby into the position – it is slightly easier at the start if baby's bottom is resting on his heels in the "bunny" position.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



5. Hands and knees (four-point kneeling)

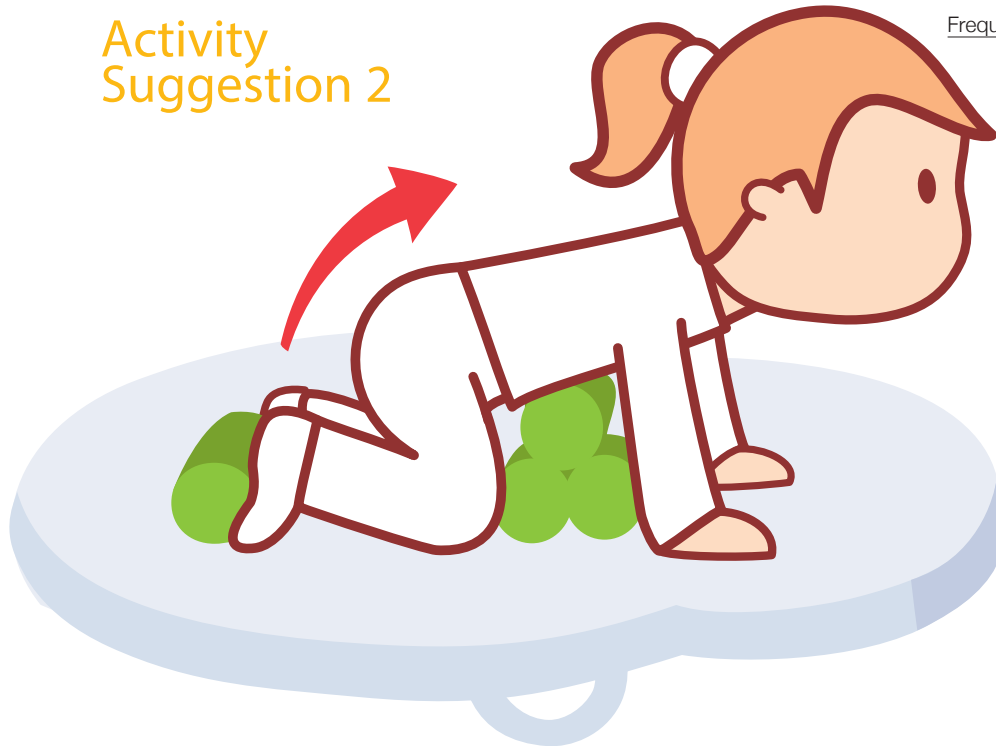
Activity Suggestion 2

Make the position harder by encouraging baby to lift her bottom off her heels.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



5. Hands and knees (four-point kneeling)

Activity Suggestion 3

Place activities in front of baby to start with. He will have to use one hand while balancing on his knees and other arm.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let him carry out his activity sessions in his vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



5. Hands and knees (four-point kneeling)

Activity Suggestion 4

Gradually move activities further away or to each side – baby will have to reach out of her base of support. This improves the strength of her shoulders and hips, and encourages a rocking movement. This may be a building block for movement if your child is ready for this next stage.

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 baby's vision, hearing and sensation. If your baby will tolerate it, let her carry out her activity sessions in her vest to allow the maximum amount of sensory feedback possible. Your occupational therapist can advise you best about your baby's sensory tolerance.

Duration _____

Frequency _____



Case History

At Leckey we are committed to developing the best products we can to meet your child's needs. While we want you to have confidence in our products, we don't expect you just to take our word for it. We want to demonstrate that our products are effective.

That's why we have developed our Case History Programme. Case histories are individual stories about children such as yours, recorded in a structured way by families and clinicians, that allow you to measure the progress your child is making. Case histories are a form of research and have several important benefits:

When shared, other kids, families and therapists can learn from your experiences.

When there is evidence that products work, therapists can obtain funding more easily.

They allow us to identify areas where more detailed research is needed.

Acknowledgements

Leckey would like to thank Janae, her caregivers, and Ginny Paleg (PT, Maryland US), for their kind permission to use their case history.

Meet Janae

Janae is six months old. She was born 10 weeks premature with serious bleeding in her brain. As a result of her brain haemorrhage and prematurity, Janae has heart and breathing problems, and an MRI scan has shown she is likely to have severe cerebral palsy.

Janae's Assessment

Janae was assessed by her physical therapist. Her muscle tone was increased causing stiffness in her limbs. She was unable to clear her airway in tummy lying, hold her head up against gravity, or turn her head from side to side. In fact, Janae had such a strong preference for keeping her head to the right that problems with the muscles in her neck were suspected. Janae's hands were fisted and she could not bring them to midline, reach or swipe, or bring them to her mouth.

Therapy Aims

Janae's physical therapist's initial aims were to strengthen Janae's neck and trunk muscles, improve her head control, increase her tolerance for tummy lying (so that she could clear her airway), and introduce weight bearing through her hands and arms.

Therapy Goals

The goals were written by Janae's physical therapist, together with her caregivers, and based on the assessment findings and therapy aims.

In tummy lying (prone), Janae will turn her head to the side to clear her airway in every trial. In back lying (supine) and side lying, Janae will bring her hands together in midline (with assistance to achieve this position) and will maintain this position for 3-5 seconds in two out of three trials. In fully supported, slightly reclined sitting, Janae will turn her head through a half circle to track a toy in two out of three trials.

Intervention

Working with her caregivers, Janae's physical therapist devised an individual activity programme using the Early Activity System and its various support elements to reach these goals over a four week period.

1. Tummy lying

Janae's physical therapist used the trunk wedge to support Janae's chest. In this position she was able to weight bear through her upper limbs. The addition of the lateral pad between her knees keeps Janae's legs in a symmetrical position, encouraging the development of her hip joints.

2. Back lying

This position was used to help Janae learn midline vision skills. Positioning of the roll, strap and head support were used on the right side to encourage turning to the left.

3. Side lying

Side lying was used to stretch the muscles in Janae's neck, encourage bilateral gaze and to use gravity to bring the uppermost arm and hand down for finger play in midline.

4&5. Sitting

The first picture shows Janae using the sitting support with additional head support from one of the lateral pads. Toys are attached to the roll to encourage eye gaze.

With regard to her ability to turn her head, Janae's therapist comments, "She increased her left gaze in just two days, coming close to even gaze and head turning in just 3 weeks."

The second picture shows Janae sitting without the rear head support or roll to the front. In this position, Janae's neck and trunk muscles are getting stronger. Her eye control improves. Because her shoulder blades are encouraged forward by the sitting support, Janae's hands came into the midline and she started to reach for toys for the first time.

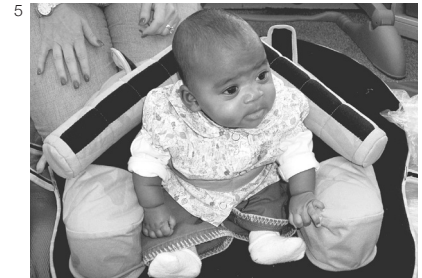
First review

Within four weeks, because of careful assessment, and joint goal setting and intervention by her caregivers and physical therapist, Janae managed to achieve the therapy goals set for her.

Janae is still using her Early Activity System to work on her next set of goals, and her physical, cognitive and sensory skills continue to improve.

More Information?

If you want to know more, log onto our website at www.leckey.com





LECKEY  Squiggles

Case History Information Pack

With a complete Case History Information Pack developed to support you, along with advice and assistance from our occupational therapist, getting started couldn't be simpler. Contact us at playalong@leckey.com to request your Case History Information Pack.



Play Along

The logo features the word "Play" in a large, rounded, sans-serif font. The letters are colored: 'P' is green, 'l' is blue, 'a' is orange, and 'y' is pink. Below "Play" is the word "Along" in a smaller, rounded, sans-serif font, colored blue. The 'y' in "Along" is pink, matching the 'y' in "Play".

Technical and Maintenance Information

How to maintain

When cleaning we recommend that you use only warm water and a non-abrasive detergent. Never use organic solvents or dry cleaning fluids.

Upholstery and fabrics

Mat

The mat is designed to enable the positioning components to be attached via the hook and loop receiving panels. The mat can be washed at 40 degrees and tumble dried at low temperature.

Remove the plastic inner before washing.

To remove the inner, open the zip at the back, fold the mat in half and slide the plastic insert out. To insert after washing reverse the process.



Positional components

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 so machine washing is not required.

Cleaning the fabric (manufacturer guidelines)

The most effective way to clean the fabric is by using warm water and a detergent, such as Fairy Liquid following the simple steps shown below.

1. Soak a cloth eg a J cloth in warm water and wring out the excess liquid. (For body fluids eg. blood, urine, use cold water).
2. Apply a small amount of detergent onto the cloth.
3. Clean the fabric paying particular attention to badly stained areas.
4. Apply the cloth to the fabric using a firm circular motion.
5. A nylon nailbrush can be used on more stubborn stains. This fabric is extremely durable and brushing it will not cause any damage.

6. Rinse off the surface of the fabric with warm water ensuring all soap residue is removed. **This fabric is totally waterproof.** Water will not penetrate the surface of the fabric and get through to the foam filling. However, care should be taken where there are stitch lines as liquid may seep through.

7. The fabric can then be either left to dry naturally or any excess surface moisture can be mopped up using paper towels.

8. Once the fabric has dried it is advisable to lightly brush the surface using a soft brush.

9. More stubborn stains can be removed using mineral spirit or isopropyl alcohol providing the area being cleaned off is washed with soap and water immediately afterwards. A half cup of household bleach to 5 litres of water can also be used as a useful disinfectant.

10. Chlorine based cleaning agents such as CHLOR-CLEAN or HAZ-TABS can be used to disinfect the product providing they do not contain more than 10% chlorine by volume.

11. When using a proprietary product it is important to follow the directions on the container.

12. Never use organic solvents such as dry cleaning fluids.

13. Always ensure the product is dry before use.

As an alternative to the steps outlined above, alcohol wipes can be used as an effective means of cleaning to prevent cross infection.

Following independent testing excellent stain removal has been found for -

Simulated Vomit (Porridge), Simulated Vomit (Pureed Carrot), Orange Juice, Gravy, Toast/Butter/Marmite, Tomato Sauce, Salad Cream/Mayonnaise, Lipstick, Nail Varnish, Ball Point Pen Marks, Soy Sauce, Fruit Juice, Animal Blood, Urine, Iodine, Betadine, Suntan Lotion, Grease.

Antifungal/Antimicrobial Properties

The upholstery used on the positional components has an antifungal and antimicrobial treatment which helps to prevent and contain cross-infection. This treatment is permanent and cannot be washed out. If you clean your product using the methods described the risk of cross-infection will be greatly reduced.

Plastic components

1. Soap and water or antibacterial spray can be used for daily cleaning.
2. For deep cleaning a low pressure steam cleaner can be used.
3. Do not use solvents eg Cellulose Thinners to clean plastic or metal components.
4. Make sure the product is dry before use.

Daily Product Inspection

(Therapists, parents and carers)
We recommend that daily visual checks of the equipment are carried out by therapists, carers or parents to ensure the product is safe for use. The recommended daily checks are detailed below.

Check all upholstery and Velcro® for signs of wear and tear.

If in any doubt about the safe use of your Leckey product or if any parts should fail, please cease using the product and contact our customer service department or your local dealer as soon as possible.

Reissuing Leckey Products

Most Leckey products are assessed and ordered to meet the needs of an individual user. Before reissuing a product we recommend that the therapist prescribing the product has carried out an equipment compatibility check for the new user and has ensured that the product being reissued contains no modifications or special attachments.

A detailed technical inspection should be carried out on the product prior to reissuing. This should be carried out by a technically competent person who has been trained in the use and inspection of the product. Please refer to section 13 for the required checks to be carried out.

Ensure the product has been cleaned thoroughly in accordance with this manual.

Ensure a copy of the Activity Development Programme is supplied with the product. Leckey recommend that a written record is maintained of all product inspections carried out during the reissue of the product.

Product Servicing

Servicing of all Leckey products should only be carried out by technically competent persons who have been trained in the use of the product.

In the UK & ROI please contact the Leckey Service Centre on UK 0800 318265 or ROI 1800 626020 and our customer service department will be delighted to assist you with your servicing requirements.

All international service enquiries should be directed to the appropriate Leckey distributor who will be delighted to assist you. For further information on Leckey distributors please visit our website www.leckey.com

Technical Information

Product Code: 130-600

Early Activity System

Includes; floor mat, sitting support, trunk wedge, head support, 2 positioning straps, 2 medium rolls, 2 small rolls, Squiggles Duffle bag and a copy of the Activity Development Programme.



User	
Age	Max 36 months
Weight	Max User Weight 15kg / 33lbs
Stature	Max 1000mm / 39.4 inches
System dimensions	
Floor Mat	
Width	760mm / 26.3 inches
Length	950mm / 37.4 inches
Sitting Support	
Height	190mm / 7.4 inches
Depth	300mm / 11.8 inches
Seat width	
Min	200mm / 7.9 inches
Max	250mm / 9.8 inches
Support Roll small	
Width	60mm / 2.4 inches
Length	600mm / 23.6 inches
Support Roll medium	
Diameter	80mm / 3.2 inches
Length	700mm / 27.5 inches
Trunk Wedge	
Width	270mm / 10.6 inches
Length	208mm / 8.2 inches
Angle	7.5 degrees
Positioning Straps	
Width	80mm / 3.14 inches
Length	660mm / 25.9 inches

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