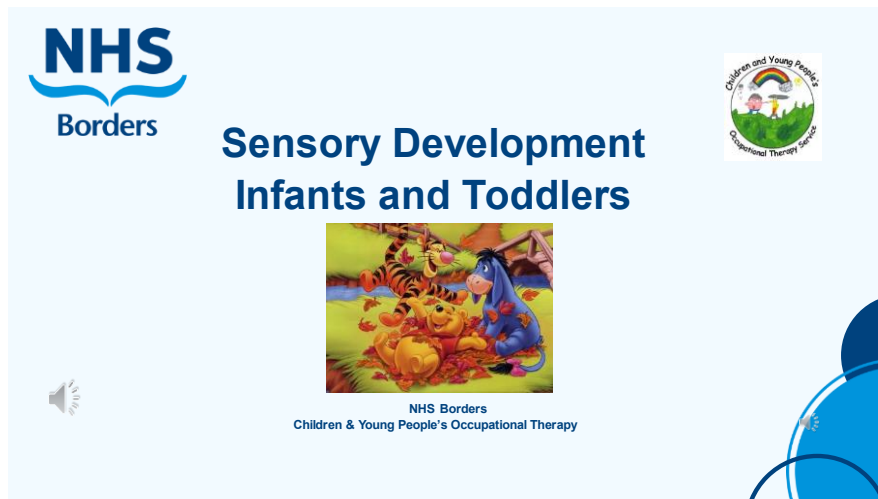


Transcript



Welcome to our video on sensory development in infants and toddlers. In this video we shall explore how their senses develop and give you some activity ideas to try which will support their development.

Sensory Development in Infants and Toddlers



Babies and children learn and discover the world through their senses. A baby has so much exposure to sensory stimulation each day. From sounds, to sights, to textures and temperatures; a baby's sensory system is rapidly developing and filing away information.

Sensory development relates to our senses, vision, hearing, touch, taste and smell which allow us to explore the world around us. Engaging our senses is a powerful way to engage our brain.

Because infants learn about the world around them with their senses, sensory stimulation is linked to:

- Emotional Development
- Cognitive Development
- Physical Development



How do we develop this?

Babies start absorbing the sights, smells, sounds, tastes and textures around them as soon as they are born. Not only can you start providing rich sensory experiences for your newborn right away, exploring the world together is a lovely, simple way of bonding.



Here are some ideas of activities to try with your baby or toddler.

At any age, pay attention to how your child reacts to different sensory experiences. Too much stimulation can become overwhelming. Babies may tell you they have had enough by turning their head away, or by fussing or crying.

As your older baby or toddler starts to try hands on activities, let them set their own speed. Some children will dive straight in to exploring a new sensation, like squishy mud or soft modelling clay while others prefer to take it slowly.

Sensory Stimulation

Sensory stimulation is the input you receive when one or more of your senses are activated. This type of stimulation is important for infant development.

Although the senses develop independently, by the end of the first-year babies achieve sensory integration. They are then able to process information from multiple senses together, especially vision and hearing.

The brain and senses work together to create a meaningful world. Activity in the brain creates tiny electrical connections called synapses. The amount of stimulation an infant receives directly affects how many synapses are formed.



Sensory development in early childhood is important for overall health and well-being. Repetitive and consistent stimulation strengthens these synapses and makes them permanent. It continues to be beneficial as babies' progress from infants to pre-schoolers and it forms the foundation of a child's learning and perception.

What are the 8 senses?

Touch, taste, sight, hearing and smell are the five basic senses but did you know the body also has three other important senses – proprioception, vestibular and interoception?

Let's take a look at each one of the senses.



Sight is the least developed of the senses at birth. Babies cannot focus clearly or see further than 30cm ahead of them. Visual stimulation right from birth is very important in order to develop this sense.

Your baby will learn:

- How to follow objects with his eyes
- To distinguish between colours
- How to get the eyes to work together
- Hand –eye coordination
- Spatial perception – where he is in relation to things around him.
- Depth perception – what is in front or close, what is behind or far away.



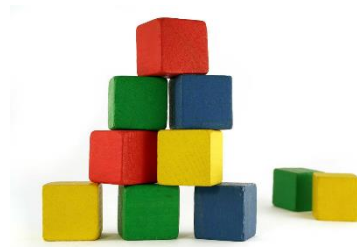
Here are some examples to support the development of vision.

Babies:

- Black and white images initially
- Reflection in a mirror
- Baby play mat with bright colours and patterns
- Light up toys
- Peek-a-boo
- Spinning toys like spinning tops and gyroscopes

Toddlers:

- Kaleidoscopes
- Building blocks
- Exploring books
- Filling and emptying containers
- Exploring the outside world





The auditory system is better developed at birth than the sense of sight. This is because it is already developed by 28 weeks of gestation. Newborns can identify their mother's voice early on and can hear high-pitched sounds well.

Through the sense of hearing, we are able to:

- Sense and interpret sounds that we hear.
- Determine what direction the sound is coming from.
- Determine the distance of the source of the sound.
- Understand the importance of a sound (e.g. a car speeding towards you when you are crossing the road is a sound of danger in that context).

Hearing and listening are crucial skills during childhood and are closely linked to learning. Here are some examples to support the development of auditory skills.

For babies you could:

- Talk to your baby and narrate your day.
- Read stories and poems to your baby.
- Sing songs.
- Experience of different sounds in daily life both indoors and outdoors e.g., household appliances, television or radio, birds chirping, trees rustling in the wind.
- Listen to music.
- Scrunch up tissue paper, tinfoil, bubble wrap for your baby to listen to.
- Rainmaker toys.



Toddlers:

- Play Musical toys such as bells, shakers and rattles.
- Listen to music with different rhythms and explore what your toddler likes.
- Music for different sounds, relaxation, whale noise, white noise, classical music etc
- Make music together using household items, like banging on saucepans.
- Move your body to the beat of the music and clap your hands.



The sense of smell appears at 14 weeks of gestation. It is well developed at birth but must be further stimulated. Infants recognize their mothers through their smell before they can even see them.

Interestingly, smell is the only sense that is linked to the emotional centre of the brain. This is why you can smell a familiar shampoo or other scent and be flooded with memories.

Smell also alerts us of danger. When a person is in danger, he emits pheromones. These can be smelt by animals and children. [source: Pieterse and Richardson]

Through our sense of smell, known as the olfactory system, we are able to:

- Smell pleasant and unpleasant odours.
- Differentiate between smells.
- Be alerted to danger.



Newborns are born with a full set of taste glands, although it takes a few years for these glands to develop fully. They can already taste sweet, sour, salty and bitter tastes.

This sense is closely linked to smell and is also developed in the womb by 28 weeks.

Babies put just about everything into their mouths – in order to learn – and this stimulates the sense of taste.

Through the sense of taste, we are able to:

- Identify whether a food can be eaten or not.
- Identify and differentiate between the four basic tastes – **sweet, sour, salty, bitter.**

Here are some examples of activities which can be used to promote the development of smell and taste senses.

Baby:

- Nappy changing
- Introduce smells such as lavender during bath time and baby massage.
- Be around smells when food is being cooked.
- Explore lots of smells, textures and temperatures when weaning.
- As appropriate, experiment with soft, lumpy, crunchy and dry foods.
- Introduce new flavours.





Toddlers:

- Create pictures using food.
- Talk about sweet, salty, spicy and sour when trying new foods.
- Explore new foods through looking, touching with hands, touching against cheek, licking, smelling and then biting.



Touch is the first sense to develop after conception. The foetus is able to react to temperature and pain stimuli in the womb. It is also very well developed at birth.

Babies need to receive constant loving touch in order to develop and be healthy. The sense of touch is important for their emotional development.

Children who do not receive enough touch have slower nerve development and this can lead to developmental delay.

Babies explore everything through touch at first and continue to do so for several years. This is one of their best ways to learn about the world around them.

Through the sense of touch, we are able to:

- Feel pain and pleasure.
- Feel whether a pressure is light or deep.
- Sense and understand the world around us.
- Understand temperature.
- Feel the tactile qualities of an object.

Here are some examples of activities which can promote the development of tactile skills.

Babies:

- Skin to skin.
- Bath time.
- Baby massage.
- Positioning on different texture types of blankets, mats.
- Different fabric squares or scarves, silk, velvet, cord, fur fabric etc.
- Different tactile items gently touched on the skin, paint brushes, feathers, sheepskin, dish scourers, bubble wrap, survival blanket.
- Easily held toys with different textures and sizes, rough, smooth, hard and soft.



Toddlers:

- Touch and name body parts, ears, nose, eyes etc.
- Catch and pop bubbles.
- Shaving foam on a table or mirror- draw using brushes, sponges or fingers.
- Hand and foot painting.
- Create a feely box.



Through the vestibular system, babies learn to sit, crawl, stand and walk by learning about the sense of gravity. They will later use this understanding to learn to perform more complex movements such as balancing on a beam.

Children need a lot of movement during the early years to properly stimulate this system. They need to be making movements such as rolling, swaying, rocking and tumbling.

The vestibular system, located in the inner ear, is responsible for the sense of balance. It enables us to:

- Maintain our balance.
- Maintain head and body posture.
- Determine the direction and speed of movement.
- Sense where our bodies are moving in space.

Here are some examples of activities which may help promote the development of vestibular awareness: -

Babies:

- Rocking and swaying when holding, lift up and down and gentle motion side to side.
- Positioning in infant bouncy chair for short periods.
- Change of position regularly.
- Walking outdoors in pram over varied terrain.
- Encourage your baby to move their head from right to left, following a toy.
- Action songs such as row, row, row the boat.
- Provide a safe space to move and explore.



Toddlers:

- Wobble and vibrating cushions.
- Playpark activities such as the swings, slides and roundabouts.
- Exploring through, climbing (safely), trampoline, running.





The definition of proprioception is our sense of body awareness or body position.

The sense of proprioception enables us to:

- Sense the effort we are exerting.
- Determine our position in space.
- Control our arms and legs.
- Sense the force of something or its heaviness.

Proprioceptors are found in all of our muscles, joints, tendons and the inner ear. They send information to the brain to say whether our muscles and joints are tense or relaxed, busy or still.

The child is then able to sense where his body is positioned in space and he knows how his limbs are moving. This is necessary for him to be able to explore his world with his body.

Proprioceptors are also responsible for regulating emotions and calming a child; for example, with a tight hug when he is distressed.

Babies:

- Tight reassuring cuddles.
- Swaddling.
- Gently moving baby's arms and legs along to a song such as row, row, row your boat.
- Baby can push their feet against your hands.
- Clapping.
- Tummy time.
- Rolling.
- Push and pull games.
- Weight bearing activities like pushing up and crawling.



Toddler:

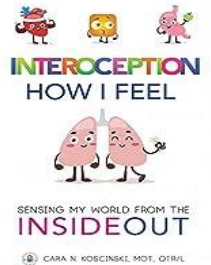
- Blowing bubbles
- Squeezy and stretchy toys
- Running
- Jumping on a trampoline
- Animal walks
- Yoga
- Swimming
- Crunchy snacks





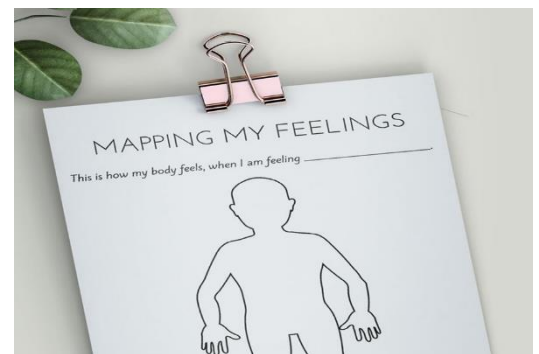
Most of us have heard of the five basic senses, touch, smell, taste, sight, and hearing, but few of us know the term **interoception!**

- Interoception helps you understand and feel what is going on inside your body.
- It lets us know if we are in pain, hungry, thirsty, feeling sick or if we need to go to the bathroom.
- Interoceptive awareness also lets us identify how we are feeling and gives us the ability to understand what happens to our body as a response to each emotion.
- The interoceptive system helps our bodies stay in a state of balance.



Here are some ideas of activities to help with interoceptive awareness: -

- Yoga (<https://www.youtube.com/user/CosmicKidsYoga>)
- Mindfulness
- Emotion matching game
- Breathing exercises
- Social stories
- Temperature activities
- How emotions feel
- Heavy work activities
- Alerting activities
- Visual prompts and cues



Thank you for watching. We hope you have discovered some new information and ideas to help develop your baby's and toddler's senses.

NHS Borders How To Contact Us... Children and Young People's Occupational Therapy Service

Prior to contacting the service, we suggest you explore our resources online and on Facebook:

www.nhsborders.scot.nhs.uk/cypot

@CYPOTNHSBorders
www.facebook.com/CYPOTNHSBorders

Advice and support can be sought from the service by contacting the team directly using our Enquiry Line or via our Enquiry Email Inbox.

01876 826033 (voicemail)

Paediatric.OTEnquiries@borders.scot.nhs.uk

We will aim to contact you within 5 working days to discuss your enquiry