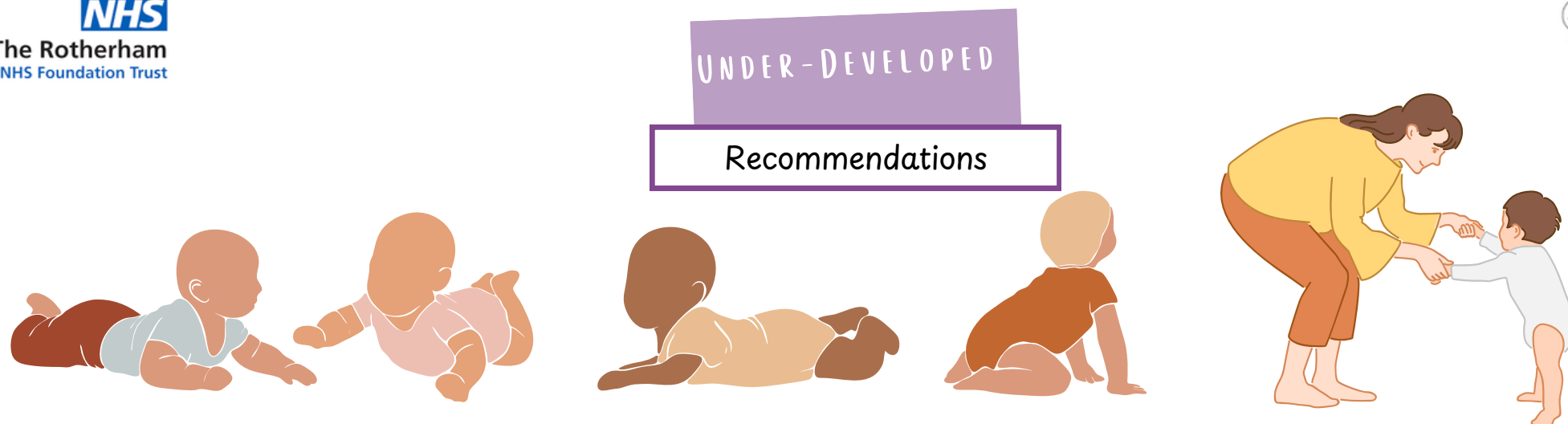




From birth, babies begin to develop their core strength and motor skills through interactions with their caregivers and their environment. Responsive caregivers provide safe opportunities for movement and exploration, which are crucial for sensory and motor development. Activities such as tummy time, being carried in different positions, and supported movement through play help babies build strength in their muscles and develop postural control.

As babies grow, they engage in important developmental milestones such as rolling, sitting, crawling, pulling to stand, and eventually walking. These movements are not just about mobility; they lay the foundation for both gross and fine motor skills. Crawling, for example, strengthens the shoulders, arms, and hands, which later supports handwriting and fine motor tasks. Walking and climbing develop balance, coordination, and spatial awareness. Alongside this, early movement experiences help children process sensory information effectively, contributing to their ability to regulate emotions, interact socially, and engage in learning.

For children who experience early trauma, neglect, or grow up without consistent, responsive caregivers, these crucial developmental experiences may be disrupted or missed entirely. A child who has not had safe, nurturing interactions—such as being held, rocked, or encouraged to safely explore—may struggle to develop the core strength, balance, and coordination needed for more advanced motor skills. Children who have spent excessive time in restrictive environments (such as cots, bouncers, or prams) without opportunities for free movement may show delayed motor development.

When early movement milestones are missed or delayed, children can present with under-developed sensory systems, meaning their ability to process and respond to sensory input is less efficient.

This can result in:

- Poor coordination and low muscle tone, leading to clumsiness and difficulty with postural control.
- Challenges with fine motor skills, such as difficulties holding a pencil, using cutlery, or fastening buttons.
- Under-responsive or over-responsive reactions to sensory input, struggling to process touch, movement, or body awareness effectively.
- Difficulties with self-regulation, as sensory processing plays a vital role in emotional control and attention.

Unlike children who have had rich and varied sensory experiences in a nurturing environment, those with under-developed sensory systems often struggle to engage in learning and social interactions in the same way. Understanding these early developmental gaps allows educators and professionals to provide targeted sensory and movement-based interventions to support children in building stronger sensory foundations for learning, self-regulation, and daily life skills.

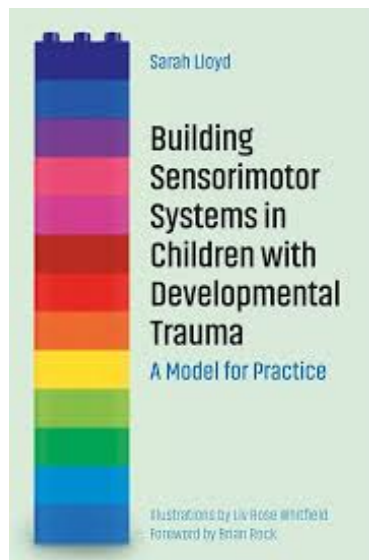
BUILDING UNDER-DEVELOPED SENSORY SYSTEMS



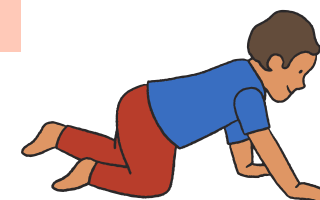
TUMMY TIME

Tummy time isn't just for babies! Older children can benefit from activities that engage their core, improve postural control, and build shoulder stability, all of which are crucial for fine motor skills like handwriting. Here are some fun and age-appropriate tummy time activities for primary-aged children:

- Reading or Drawing on Their Stomach - Encourage children to lie on their tummy while reading a book, drawing, or doing puzzles.
- Scooter Board Challenges - Have children lie on their stomachs on a scooter board and propel themselves forward using their hands.
- Animal Walks & Crawling Games
- Therapy Ball Play
- Have children lie on a therapy ball on their stomachs and reach for objects (e.g., puzzle pieces, bean bags) on the floor. They can also rock back and forth on the ball, supporting themselves with their hands on the floor.
- Floor-Based Games & Activities
- Eg; Board games - Play simple games like Connect Four, memory games, or Lego while lying on their stomach.
- Strength-Building Exercises
- Plank Challenges - Make it fun with games like 'Who can hold the longest plank?' or 'Plank while singing a song'.
- Wheelbarrow Walks - Hold the child's legs while they 'walk' forward on their hands, building upper body strength.



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BUSS



CRAWLING

Developing core strength is crucial for primary-aged children, especially those with under-developed sensory systems. Crawling activities are fundamental for building core stability, enhancing motor skills, and improving overall sensory processing. Using the BUSS (Building Undeveloped Sensorimotor Systems) model, here are some strategies and recommendations for incorporating crawling activities into daily routines.

- Floor Time: Provide safe, spacious areas where children can crawl freely. Encourage them to explore different surfaces (e.g., carpet, grass) to enhance their sensory experiences.
- Obstacle Courses: Create simple obstacle courses using cushions, boxes, and tunnels. Encourage children to crawl under, over, and through these obstacles to build core strength and coordination.
- Animal Imitation: Use animal-themed games where children mimic the crawling movements of different animals (e.g., bears, crabs, or snakes). This not only makes crawling fun but also engages various muscle groups.
- Crawl and Retrieve: Place toys or objects slightly out of reach and encourage children to crawl to retrieve them. This activity promotes motivation while building strength and stability.
- Parent & Carer Involvement: Share ideas with parents on how they can incorporate crawling activities at home. Suggest setting up a designated play area for crawling and encouraging similar games or activities as those practiced in school.
- Daily Challenges: Create a "Crawling Challenge" where children can track their crawling activities at home and school, reinforcing the importance of movement and core development.
- Treasure Hunt: Hide small toys or treasures around a designated crawling area. Children can crawl to find the items, encouraging exploration and movement.



SENSORY EXPERIENCES IN EARLY YEARS

The first three years of a child's life are a critical window for sensory and motor development, laying the foundations for emotional regulation, attachment, and learning. During this time, the brain is rapidly developing, and consistent, nurturing experiences through sensory-rich play and movement are essential for building healthy neural connections. Through touch, movement, sound, and visual input, babies begin to make sense of the world and their place in it. When children are given safe and responsive opportunities to explore their environment—crawling, climbing, grasping, mouthing, and engaging in back-and-forth interactions—they are not only developing motor skills but also learning to regulate their bodies and emotions. For children who have experienced early adversity or inconsistent caregiving, these foundational experiences may have been disrupted. This makes it even more important for caregivers and professionals to understand the role of sensory and motor opportunities in early development, and to intentionally provide nurturing, repetitive, and attuned sensory experiences to support healing and growth from the very start.

0-12 MONTHS



- Tummy Time: Daily, supervised tummy time builds core strength, supports postural control, and helps with vestibular and proprioceptive input.
- Skin-to-Skin Contact: Regulates baby's heart rate, breathing, and temperature; essential for bonding and calming the nervous system.
- Gentle Infant Massage: Provides calming tactile input, supports body awareness.
- Visual Tracking: Use high-contrast toys or faces to encourage visual tracking and eye coordination.
- Soothing Sounds: Soft singing, lullabies, or gentle rhythmic sounds (like white noise) can be regulating for the auditory system.
- Baby-Wearing: Using slings or wraps offers calming proprioceptive and vestibular input, and promotes bonding.
- Exploring Textures: Soft toys, fabrics, sponges, and natural materials (supervised) can help develop tactile discrimination and curiosity.
- Water Play: Splashing in a shallow tray or during bath time provides soothing multisensory input.

12-24 MONTHS



- Climbing and Crawling Tunnels: Encourages gross motor development, coordination, and body awareness.
- Push and Pull Toys: Stimulate proprioceptive and vestibular systems while developing strength and balance.
- Simple Obstacle Courses: Soft cushions, mats, or furniture for climbing and crawling over safely can provide rich sensory input.
- Sensory Bins: Use rice, oats, water beads (with supervision), or sand to stimulate touch and encourage exploratory play.
- Cause-and-Effect Toys: Buttons, levers, and pop-up toys help with fine motor skills and sensory-motor integration.
- Rhythm and Movement Games: Dancing, clapping games, and musical instruments support auditory processing.

2-3 YEARS



- Heavy Work Play: Pushing toy carts, carrying soft weighted items, or helping with "chores" like filling laundry baskets provides proprioceptive input.
- Messy Play: Finger painting, shaving foam, or play dough encourages tactile tolerance and fine motor control.
- Swinging and Spinning: Swings, sit-and-spin toys, or rocking horses help develop vestibular processing (always supervised and in short bursts).
- Outdoor Nature Play: Walking on uneven surfaces, picking up natural objects, or jumping in puddles integrates multiple sensory systems.
- Water and Sand Play: Pouring, scooping, and filling supports both sensory exploration and fine motor development.
- Imitative Play and Interaction: Games like peekaboo, turn-taking, and shared attention supports social connection and co-regulation.



[SENSORY DEVELOPMENT IN BABIES & TODDLERS \(NHS BORDERS\) LINK](#)