



The vestibular system, located in the inner ear, is responsible for processing movement, balance, and spatial orientation. Beyond its physical functions, the vestibular system plays a critical role in regulating the autonomic nervous system and influencing our internal sense of felt safety—a state in which we perceive ourselves as physically and emotionally secure. When the vestibular system functions optimally, it provides the brain with consistent, reliable information about where the body is in space. This stability promotes a sense of grounding and control, which is essential for feeling safe. However, when a child experiences hypervigilance—a heightened state of alertness often linked to trauma—their vestibular system may become dysregulated, impacting their ability to achieve this sense of safety.



What might you notice

Instability in Spatial Awareness:

The child may feel physically ungrounded or disconnected from their body, leading to a persistent sense of insecurity.

Heightened Sensory Needs:

The brain may seek additional vestibular input (e.g., movement) as a way to recalibrate and regain a sense of control, safety and grounding

Fight, Flight, or Freeze Responses:

Hypervigilance can amplify the body's survival responses, which are closely tied to vestibular input. For example, running (flight) or freezing in place are responses that engage the vestibular system.



Impact on learning

- Struggles with focus and attention—seeks movement to stay engaged or becomes overwhelmed by too much movement in the environment.
- Difficulty with transitions—moving between activities or locations may feel disorienting.
- Challenges with handwriting and fine motor tasks due to poor postural control.
- Reduced confidence in PE and playground activities, leading to social difficulties.
- Increased anxiety in busy or unpredictable environments (e.g., assembly, fire drills).
- Frequently leaving their seat or the classroom.
- Running in hallways or climbing on furniture.
- Fidgeting, rocking, or spinning in their chair.
- These behaviours are often attempts to self-regulate and restore a sense of felt safety. School staff and caregivers can support these needs by providing structured movement opportunities and creating a sensory-friendly environment.

Why movement matters

Movement directly influences the autonomic nervous system, particularly the parasympathetic system, which is responsible for calming the body. By engaging in movement activities, children can:

Recalibrate Their Sensory System: Movement provides consistent vestibular input, which helps the brain organise and interpret sensory information more effectively.

Ground Themselves: Engaging in controlled, predictable movement helps the child reconnect with their body and environment, reducing feelings of disconnection or overwhelm.

Release Stress: Movement allows the body to release stored tension and energy associated with hypervigilance.

Enhance Emotional Regulation: Vestibular input can help regulate mood and reduce anxiety, contributing to a greater sense of safety and stability.



VESTIBULAR

Recommendations

SENSORY CIRCUITS

A sensory circuit is a purposeful, structured, and sensory-based movement routine that helps children to self-regulate and promote a calm and alert state. Sensory circuits typically include a series of activities that involve alerting, organising and calming sensory input. These activities are designed to meet the individual needs of the child and provide them with the sensory input they require to regulate their emotions, behaviour and focus. Sensory circuits are an excellent way to energise a child or settle them, ready to learn and engage with the school day. By incorporating sensory circuits into the daily routine, parents and teachers can support children with their behaviour and concentration at school and home



Benefits of sensory circuits for children impacted by trauma

- Predictable start to the day
- Positive co-regulation time with a trusted adult
- Opportunity to start the day as a success
- Increasing confidence & self-esteem
- Develops body awareness./ interoception
- Opportunity for positive feedback
- Opportunity to build underdeveloped sensory systems and motor skills
- Supporting to identify calming strategies
- Sets the child up for their best learning

Sadie Charlton, Sensory Occupational Therapist from Rotherham has created a free resource of Sensory Circuit Cards available for schools. The cards include a number of activities that follows the structure of ALERTING > ORGANISING > CALMING and even includes bonus CONNECTION cards especially with care-experienced children in mind.

This a very popular resource used widely throughout Rotherham and is easy to print, laminate and 'play'.

Email virtualschool@rotherham.gov.uk to request a copy for your school.



VESTIBULAR HACKS

Strategies for children who are sensitive to vestibular input



Seating & Posture



- Stable seating – Use chairs with footrests or provide a box under their feet to create a grounded feeling.
- Avoid wobble cushions – These can increase discomfort for children with vestibular sensitivity. Instead, ensure they have a firm, supportive seat.
- Allow alternative seating options – Some children feel safer sitting on the floor against a wall or in a designated 'safe seat' away from busy areas.
- Keep seating consistent – Avoid unnecessary changes in where they sit, as this can increase anxiety.
- Assembly Support – Allow the child to sit against a wall or on a bench rather than on the floor, so they feel more secure and stable. If sitting on the floor, a carpet square, yoga mat, or a weighted lap pad can provide a sense of grounding.
- Near an Exit – Sitting near the door allows for an easy escape if they become overwhelmed.



Voice of the child Questions to ask

- "How do you feel when you have to move around a lot, like running or jumping?"
- "Are there any playground activities that feel too fast or wobbly for you?"
- "Do you like sitting still when doing your learning, or does your body feel like it needs to move?"
- "Is there a way we can help make moving around feel easier or safer for you?"
- "What kind of movements help your body to feel calm?"
- "What kind of movements help your body to feel awake?"



Transition Support



- Slow, predictable transitions – Give advance notice for movements (e.g., "In two minutes, we'll stand up and line up slowly").
- Visual supports – Use a visual schedule or social stories to help them understand movement-based activities.
- Provide a 'movement buddy' – A peer or adult can help guide them through physical transitions like walking to assembly or PE.
- Reduce rushing – Allow extra time for transitions so they don't feel pressured to move quickly.
- Go First or Last – Allow them to walk to assembly when the corridor is less busy to avoid being jostled. Likewise, allow access to the cloakrooms during quieter times.



Environmental Hacks



- Reduce visual distractions – A clutter-free space helps with spatial awareness and reduces sensory overload.
- Limit background noise – Sudden or unpredictable noises can increase feelings of disorientation, so a quieter workspace can help them feel more secure.
- Provide clear personal space – Avoid crowded seating arrangements where they may feel unbalanced due to movement around them.
- Clearly define their boundaries to help feel more contained eg; carpet spot, box tape on the floor around the desk space.
- Use visual prompts as reminders for busy places eg; highlighting where their peg is.



Environmental Hacks



- Modify PE & Playground Activities – Swap fast, unpredictable movements for slow, controlled tasks like step-by-step obstacle courses or balance challenges.
- Grounding Before & After Movement – Use deep pressure (wall push-ups, feet pressing into the floor) before and after activities to help with stability.
- Provide Stability – Encourage activities with feet on the ground, such as slow rocking, stretching, or yoga poses for controlled movement.
- Predictable & Controlled Participation – Let children observe first, break tasks into steps, and introduce movement gradually.
- Regulating Rhythmic Movement – Use slow, repetitive motions like swaying, marching, or rocking to help with sensory regulation.
- Alternative Participation Options – Allow movement breaks, seated exercises, or quiet spaces if an activity feels overwhelming.



VESTIBULAR SNACKS

Increasing safety through movement

Regulate to
LEARN



Environmental Adaptations

- Activation Stations – Create designated areas for controlled movement breaks (e.g., wall push-ups, stepping stones, balance boards).
- Active Pathways – Use tape or floor markings for stepping, hopping, or zig-zag paths in corridors to channel movement.
- Swinging or Rocking Options – If space allows, provide rocking chairs, therapy balls, or balance boards for gentle movement.
- Standing Workstations – Offer standing desks or adjustable-height desks for learners who focus better when upright.
- Heavy Work Opportunities – Assign movement-based classroom jobs like stacking chairs, moving books, or handing out resources.

Transition Support

- 'First Move, Then...' Approach – Allow a short movement activity (e.g., five star jumps or pushing against a wall) before lining up.
- Predictable Movement Cues – Use a visual timer, song, or verbal countdown to signal when it's time to transition.
- Movement-Based Lining Up – Instead of standing still, let children march, step side to side, or sway while waiting in line.
- Jobs to Ease Transition – Give them a movement-based task like carrying a book, holding the door, or being a 'line leader' to focus their energy.
- Provide a Transition Object – Let them hold a fidget, weighted item, or resistance band to push or pull while waiting.
- Pair with a Buddy – Let them stand next to a calm peer who can model staying still and regulated.
- Wall Support – Allow them to lean against a wall or press their hands against it for grounding input while waiting.
- Staggered Transitions – Let movement-seeking children go first or last to reduce the time they need to stand still.



When a child is constantly moving, rocking, or seeking intense vestibular input, our instinct might be to provide more movement opportunities, like a wobble cushion or more intensive movement input.

However, for care-experienced children who may have missed key developmental movement milestones, this behaviour could be a sign of an under-developed vestibular system rather than just a need for more movement.

Before introducing a strategy, ask yourself:

- Does this child have the core strength and postural control to use this tool effectively?
- Is the strategy helping them stay regulated and engaged, or making them more dysregulated?
- Have I observed whether the child looks more settled or more unsettled after using this adaptation?

Trial strategies carefully, and watch for signs of improvement or difficulty. If a wobble cushion or other movement-based support seems to be making things worse, focus on developing foundational skills first—like core stability and balance—before adding extra movement demands.

For more guidance, see the section on 'Under-Developed Sensory Systems'.

Seating & Posture

- Dynamic Seating Options – Wobble cushions, stool seating, or standing desks allow subtle movement while working.
- Foot Engagement Tools – Attach resistance bands to chair legs or provide foot fidgets to allow controlled movement.
- Weighted Lap Pads or Compression Vests – These provide grounding input and help with body awareness at the desk.
- 'Active Sitting' Breaks – Let students stand, stretch, or do a quick movement (e.g., toe raises, chair push-ups) between tasks.
- Alternative Workspaces – Offer different learning positions like lying on the floor with a clipboard or kneeling at a low table.

Calming Movement

- Slow, Rhythmic Rocking – Allow access to a rocking chair, therapy ball, or slow side-to-side body movements.
- Deep Pressure with Movement – Encourage wall push-ups, chair push-ups, or carrying weighted items (e.g., books in a backpack).
- Slow, Intentional Spinning – Provide controlled spinning on a swivel chair for self-regulation (limit to a few slow rotations).
- Swinging or Hanging Activities – If available, use playground swings or hanging bars for slow, soothing input.
- Seated or Floor-Based Weight Shifts – Teach gentle rocking in a chair, shifting weight from side to side while seated, or stretching in child's pose.
- Sensory Circuits – Use the VSR Sensory Circuit cards to offer structured & purposeful movement opportunities scheduled within the school day.

