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Activating the Brain's Starter Motor

A child who can't stop moving might be trying to get his brain going.

Do you have students who never sit still? Are they constantly turning their heads, moving or wriggling? Do they delight in rocking on the back legs of their chairs? But then, when they're working, they suddenly droop over their desks? These children quite often have no appreciation of the space their bodies take up and will invade others' without realising it. Think of the child who jostles other children when sitting on the mat or joining a line, because he just didn't realise that he wouldn't fit into that small space. They might even have been labelled as ADD or ADHD children.

The issue may be that their brain's vestibular system (the brain's "starter motor") is not yet fully activated.

A lack of movement and practicing balancing during pre-school years can exacerbate this issue. So can too much sitting in front of the TV, repeated ear infections and childhood allergies.

The vestibular system (think of building's entrance way) is the pathway by which all sensory information enters the brain. Movement creates and enhances these pathways. This system is the first to be fully developed in utero and is functioning by about five months after conception. At this stage, the foetus moves its head frequently; these early movements later turn to crawling, walking and running. Every movement the child makes helps stimulate the vestibular system, which in turn stimulates the brain for new learning. You can feel the effect of the stimulation on your brain: Think of the buzz that an amusement park ride or a flight simulator gives you.

Several small organs tell us about our movement and position (illustration 1). In the inner ear, situated behind the mastoid bone (the lump behind your ear), are the utricle and the saccule, which monitor us when we are still, keeping us stable. The three semicircular canals keep us balanced when moving, with each canal responsible for a different plane. Nerves carry impulses from there, via the medulla oblongata, pons and cerebellum, to the neocortex. This nerve network is part of the reticular activating system (RAS) (illustration 2).

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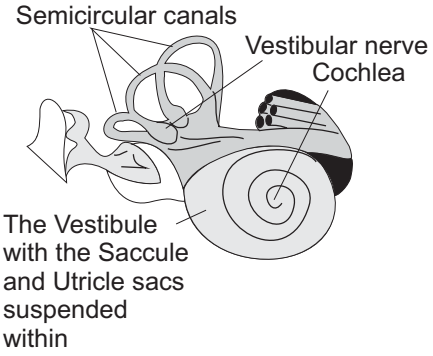

Illustration 1 Inner Ear

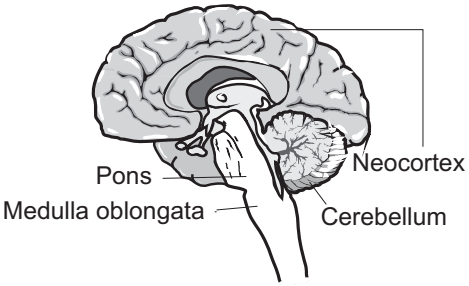

Illustration 2 The Brain

Children who are constantly on the move may not have a sufficiently developed RAS. They need to keep moving to wake up the neocortex area where all our higher-level learning and processing occurs. Just watch these children when they keep still: Do they soon go off in a daydream as their brain shuts down?

Sound enters our brain via our ears, through the vestibular system. It appears that the upper ranges of sounds are particularly effective in maintaining alertness and energy within our body. We seem to know this on an instinctive level when we use a higher pitch voice to "talk" to babies. A study showed that when monks in monasteries in France stopped their Gregorian chanting (upper register vibration and harmonics), they needed more sleep, achieved less and were ill more often. Factory workers who lost the upper range of hearing through constant noise pollution also showed signs of being more listless and non-productive. The lesson: Let's watch the noise pollution that we subject our children to if we want to maximise their alertness and energy.

The vestibular system's job to send feedback to the brain, which then readjusts our balance to keep our eyes level so we can read or write as we sit in a chair. We have over 40,000 bits of information going to our brain every second. The vestibular system filters the unimportant information and transfers the important information for storage. Think about when you enter a room full of people. You're aware of the noise and then as you start to talk to someone really interesting, it is as if the background noise fades away. Children who are sensitive to the noise in the classroom may not have their RAS system working properly.

As we make our playgrounds more "safe" and remove equipment we perceive as dangerous, we are also stopping our children from clambering and climbing and being able to

practice balancing. We will find more and more children who are clumsy and accident prone, because they haven't fully developed their vestibular system.

We can help activate this system by engaging in a movement-based program such as Neuro-Linguistic Kinesiology's Mental Fitness exercises. This program has a number of beneficial "switch on" exercises, including one which involves holding the navel and the mastoid bone behind the ear. The action of placing the hand over the navel (Illustration 3) works by bringing attention to the body's centre of gravity to help balance. Holding the mastoid bone brings the body's awareness and energy to this area. The cross-crawl (illustration 4) requires balance while working both sides of the neocortex, again activating the vestibular system. The more slowly these exercises are done, the more effective they are. Think of some children who walk early, or in fact, run. If they slowed down, they would fall over as they may have bypassed the stage that gives them control of balancing their head on their shoulders, which is part of learning to crawl.

So next time you have a "wriggler" in your class, remember that he might be using this movement subconsciously to start his brain up and allow the information in. We need to encourage children to practice their balance from an early age and when children display the signs of an undeveloped vestibular system, consider a movement-based program to help them to develop it fully.

Illustration 4 Cross Crawl

Activating both sides of the brain and the body.

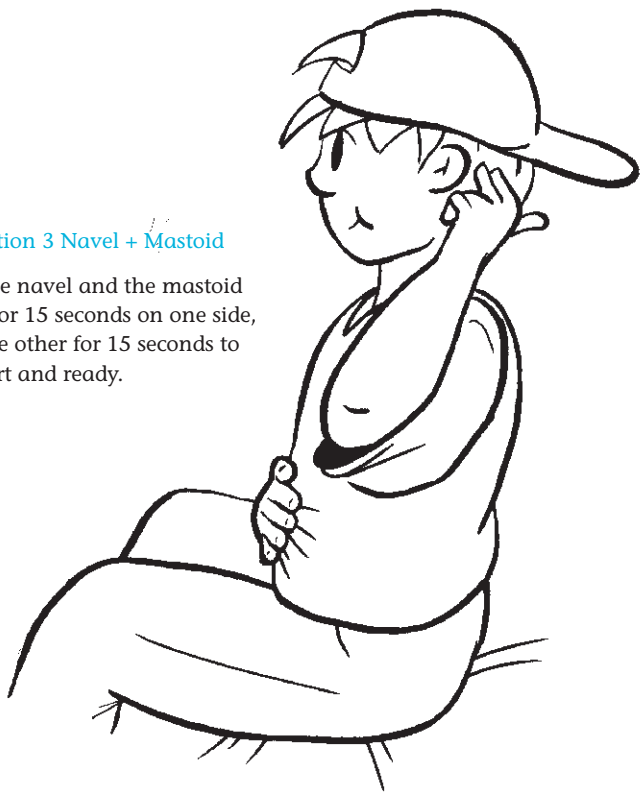

Illustration 3 Navel + Mastoid

Hold the navel and the mastoid bump for 15 seconds on one side, then the other for 15 seconds to feel alert and ready.

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