



Bilateral Integration Skills for Special Needs

Shared by Christelle Nel

We thank Paediatric Occupational Therapist Christelle Nel for explaining the concepts of midline crossing and bilateral integration skills, and why they are so important in the development of our children.

Best Explained By Example

Peter is a 5-year-old healthy boy. He loves playing outside.

- He bunny hops (**bilateral integration**) to the jungle gym.
- He climbs up the steps (**reciprocal bilateral integration**) like a proper soldier.
- He slides down the slide headfirst (**vestibular stimulation**) and lands in the sandpit (**proprioceptive stimulation**).
- He loves hiding his toy animals and cars in the sand (**tactile stimulation**).
- Sitting cross-legged in the sand, he scoops up the sand with his right hand (**developing a preferred hand**) and fills the buckets on the left side (**midline crossing**).

During his outdoor play Peter develops many strong systems, including important bilateral and midline crossing skills.

During play children develop the skill of using both sides of their amazing brains.

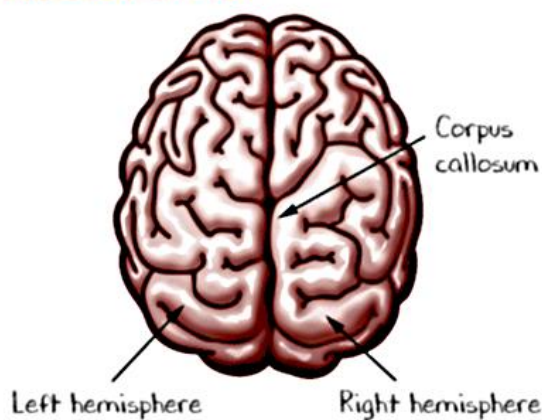
Defining the Midline

The '**midline**' is the imaginary line running through the middle of a person separating left and right sides of the body.

The development of midline crossing can be explained by the following five building blocks.

- **Bilateral integration skills**, involves using both sides of the body at the same time. Think of brushing your teeth. One hand opens and squeezes the toothpaste and the other hand handles the toothbrush. We do this on a daily basis without thinking of consciously activating our brain.
- **Core stability and trunk rotation**, where the muscles of the trunk help to stabilize the body so that the arms and legs can move in a controlled manner.
- **Hand dominance**, where the consistent use of one hand or foot helps develop **refined movement control**.
- **Planning and sequencing**, the ability to **follow multi-step instructions** to achieve a defined outcome or end point.
- **Body awareness**, the information that **muscles and joints** send to our brain that tells us about **our body position**.

THE BRAIN



Signals That a Child has Difficulty with Midline Crossing

- **Pencil-based activities may become difficult** and the child may avoid them. They will start with the hand nearest to the pencil or pen (e.g. the left hand) and as soon as they have to cross over the midline swap the pencil to the other hand (in this example, the right hand).
- The child may become angry or **frustrated with fine motor tasks that require refined movement**.
- The child may try to **avoid performing self-care tasks**.
- A child may **fail to notice all details on a page** when copying writing or drawing.
- **W-sitting with legs facing backwards** and therefore limiting upper body movement and trunk rotation as needed for midline crossing.



Activities to Develop and Enhance Bilateral Integration Skills and Midline Crossing

Here are some **helpful activities to try** with your child.

- Regular playful animal movements like bunny hops, crab walking or froggy jumps.
- Playing in shaving lotion using both hands simultaneously for doodling and drawing.
- Correct placement of toys or play objects. For example, if a child is sitting on the floor in a cross-legged or long-legged sitting position, the toys can be placed on the left side. The child then has to rotate their upper body in order to cross the midline to left and lift the toys with the right hand.
- Doing jumping jacks or drawing angels in the sand.

- Windmilling arms while standing with feet apart. To do this, have the child twist their upper body and touch the left foot with the right hand. Twist again and touch the right foot with the left hand.





Individual Therapy and Group Workshops

Christelle Nel qualified as an OT in 1996 at the University of the Free State. Her love and passion for working with children led her into paediatrics. She's the **owner of Monte Vista Therapy in Cape Town**, where she works with an expert multi-disciplinary paediatric team.

She offers both **individual and school-based therapy**. She also gives regular **training workshops** at schools and for the community. Her aim is to equip as many people as she can with the skills and tools to help children.

- WhatsApp Christelle on 082 437 0381 to learn more. Or find her on [Instagram: @christellenelot](#).

Mindstretch recommends Christelle. Our teachers have greatly benefited from her workshops!