



Brain Beats Music

What's the big deal with Midline Development?

When my daughter had just started school, I volunteered in her classroom as a parent helper during story writing time. There was a lovely boy in her class who was very bright, but every time he was working at writing a story he would get into trouble with the teacher for either bumping his exercise book into the child on his left, or falling off his chair, always towards his right. He was right-handed. The teacher was getting rather exasperated about this frequent behaviour. After observing him writing I noticed that he did not seem to be able to control his body easily when he attempted to cross his left ↔ right midline. This meant that in order to do his work he had adapted to moving his exercise book from side to side, rather than his hand. When he was told that he must not move his exercise book, he adapted by moving his whole body along with his pencil, until ultimately, he fell off his chair again. As soon as I pointed out my observation to the teacher we were able to put in place daily midline exercises for the whole class and within a matter of weeks the issue was resolved. A happy ending to what must have been very frustrating and embarrassing for that little boy.

The body has three midlines:

- left ↔ right (sagittal plane),
- front ↔ back (coronal plane), and
- top ↔ bottom (transverse plane).

It is important that children develop all three midlines. During midline development children generally go through the following stages:

- **Bi-laterality** is when movements are mirrored on both sides of the body. Neither side of the body is dominant, and the midline separates each side. At this stage of midline development the brain uses the hand which is closest. It is important to use both sides of the body until dominance has been established.
- **Homo-laterality** is when one side of the body remains still while the other side moves.
- **Laterality** is the ability to do something different with one side of the body while the other side does something else. It is characterised by oppositional movements. For example, one hand up and one hand down, or one hand in front and one at the back.
- **Cross-laterality** means crossing the midline - one side of the body crosses over the other. At this stage children develop independent movement across the midline.

Once midlines are well established, automaticity and integration can develop.

- **Automaticity** is the ability to do something without thinking. This develops through repetition. You can't do more than one thinking task at one time. Once automated, children can move on to more advanced tasks and eventually be able to do more than one (non-thinking) task at a time. Automaticity frees up the brain for higher level tasks.
- **Integration** is when the left and right brain hemispheres work together seamlessly. It is whole brain learning.





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Question: What is the difference between these letters?

b p d

Answer: Each is made up of a circle and a line. However, without well-established midlines, children will see no difference between these letters. Making mistakes with letters or writing them backwards is normal and is often a sign that midline development is in progress. Midline development allows children to build hand stability, write fluently, and eye track across a page. Teaching reading and writing before midlines are established may simply cause frustration for the child.

Some activities that encourage midline development include clapping, crawling (forwards, backwards and sideways), walking, galloping, hopping, marching, skipping, bending upside-down, using monkey bars, making an X with arms or legs, swinging arms left ↔ right or front ↔ back. Many of these movements can be practiced when enjoying songs by **Brain Beats Music**, such as *I'm a Ball*, *Oh I am a Pirate*, *Stretchy Circle*, and *If I were a Tiger*. What fun ways to reinforce midline development!

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