

## Sensory Integration and Learning

Our bodies are designed to go through a systematic set of movement patterns from birth. These patterns develop our brain, get us into a standing position and eventually help us do more complicated activities such as write and tie our shoe laces. The simple movements we explored as babies, “switched on our brains”, developed our muscles and helped us learn about our bodies.

The stages of development are systematic, each leading to the next and building upon each other. The following is a simple outline of those stages that should happen naturally if the child is not hindered.

1. The baby starts on the floor on their tummy, stretching and moving and lifting their head
2. The baby pushes their body and lifts their chest off the floor
3. The baby pushes and rolls onto their back
4. The baby reaches across their body and rolls onto their tummy
5. The baby, on their tummy, reaches for a toy and pushes with their foot at the same time. They MOVE forward!
6. The baby uses a movement of hands and feet to scoot along on their tummy. This becomes a cross pattern tummy crawl.
7. The baby starts to wiggle and push and gets into sitting position, then leans forward into a four point position
8. The baby moves hands and feet in a homo-lateral crawl
9. The baby moves into a cross pattern crawl
10. The baby pulls to stand against objects
11. The baby moves away from their support
12. The baby walks unsteadily with hand and feet moving simultaneously- hands raised
13. The baby improves balance with practise and changes to a cross pattern walk
14. The toddler learns to run
15. The toddler explores and tries to jump off the ground, eventually mastering if allowed
16. The child explores balancing on one foot
17. The child learns to hop
18. The child learns to skip

Unfortunately, for many reasons, children are missing stages. Parents are ‘helping’ their babies with play, but unfortunately, listening to the marketing about what babies need for play and learning, isn’t always in the best interests of child development. So we see very young babies propped into a sitting position before their muscles are ready to support them. We see babies sitting in ‘walkers’ or ‘play-stations’ in a vertical position, when they have not mastered cross pattern movements. We see babies propped to look at screens well before their eyes have developed.

The importance of these motor stages may not become evident until the first year or two at school. The child with impaired sensory development may:

1. Not be able to sit still and use their hands independently of other body movement
2. Be clumsy
3. Have a poor pencil grip and awkward fine motor skills
4. Have difficulty with the fine motor control of their eyes (tracking and convergence) therefore struggle with reading
5. Be fidgety, wanting to move about on the floor or chair
6. Have difficulty seeing patterns in mathematics

Many children with Sensory Integration dysfunction, may be seen to have symptoms and behaviours similar to a child diagnosed with ADHD, dyslexia or learning impairments.

Imagine a child sitting in the classroom. A list of spelling words to copy is before them. They are using their eyes to keep their balance on the chair, instead of their muscles, so they get tired and can't keep their place as they read and write, therefore making lots of mistakes as they copy. When they turn their head to read the board, as they are sitting side on, their arm reflexively wants to straighten, making hand-writing difficult. They move to the floor to listen to a story, but find it difficult to sit still, as when they raise their head to look at the teacher their legs want to move. Unfortunately this child has sensory integration delays, perhaps primitive reflexes that have not been integrated, so they constantly experience minute reflexive movements as other parts of their body move.

The good news is that the brain can be retrained and missed stages revisited. By implementing a gross motor programme where fundamental movements are repeated and cross pattern and homo-lateral body movements are encouraged. Training the body to move its various parts independently, smoothly and automatically is imperative for more complex cognitive activities.

### References

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