

Please do not sit me until I do it by myself!



Dr Jane Williams

Babies just love to move. We know this by watching babies who are frustrated by their immobility! Thinking they can assist children to be more mobile, many parents prop their babies up into a sitting position at a very early age – sometimes as young as four months. Yet, despite the best of intentions, this position actually slows a baby’s pathway to mobility. Instead of making their muscles stronger and therefore able to propel them along, sitting actually has the opposite effect – it prevents the muscles needed for movement to be strengthened. So when should we allow our babies to sit and how do we encourage them to move without placing them into this more upright position?

Alice, five months old, is laying on her tummy closely watching her older three year old sister play with some brightly coloured toys that look and sound just great! “If only I could get my hands on those!” she thinks. But Alice is not yet moving and so she starts to whinge. Mum comes running in, props her upright using pillows and towels,

places a toy in her hands and sees that she is happy. But is mum really doing Alice a favour by sitting her up?

In actual fact, Alice’s body is not yet developmentally ready to be sat upright. Alice will sit herself up when her brain and body are ready. Once she has developed adequate muscle and balance control – usually around six–eight months of age (of course some babies are earlier and others later) – she will sit herself upright without mum’s help. Being able to sit upright usually occurs after muscle strength in her legs, arms, shoulders and back through tummy crawling is well developed and her brain has matured to a point where important postural reflexes that aid in the healthy development of balance, posture, movement and stability are present.

Postural reflexes and their important role in the development of sitting Postural reflexes are important for the development of muscle control and strength that enables Alice to sit by herself and then pull herself up to

standing and walk upright with balance and control. They develop as a result of the activation and then inhibition of the primitive reflexes that stimulate early movement – such as sucking, opening and closing of the hands and reflexes that cause the body to move when the head is turned from side to side or tilted forwards or backwards. These are unconscious automatic reactions. As the infant’s brain matures these reflex movements are inhibited by voluntary control, so babies are able to decide when to suck, when to hold onto and let go of something and when to move. A further indication of the maturing brain and neurological pathways is the development of postural reflexes. Postural reflexes differ from primitive movement reflexes in that they are present for life and are essential for balance, coordination and upright posture. They enable the child to maintain the head and trunk in a specific position when the body position is altered in any way. To enable Alice to sit safely without falling and to maintain a strong upright posture,

she needs to have two important groups of postural reflexes active, these are called the 'head righting reflexes' and the 'equilibrium reflexes'.

Head righting reflexes

Before Alice can sit up, she must accomplish mastery of head control and be able to automatically adjust the position in which her head is held in response to movement. This is necessary as the head must maintain a position in which the eyes are always set on an equal plane with the horizon. This enables the healthy development of balance, the smooth control of the muscles of the eyes and development of visual perception. Head righting reflexes are stimulated by visual clues as the eyes begin to fix on a target despite other movements of the body. Control of the head is gained in tummy position much more quickly than if a child is always lying on his or her back, so there are considerable differences in the ages in which children develop head control and the head righting reflexes mature. The textbooks report that around 5 - 6 months of age is when the head righting reflexes begin to mature.

Equilibrium reflexes

Equilibrium reflexes play an important part in protecting the body from danger and help to keep the body upright against gravity. They occur in response to a sudden change in position or when balance is lost. The fluid filled canals in the inner ear – the vestibular system - working in tandem with the eyes, to tell the brain that the body has changed position and for the body to respond accordingly. One form of equilibrium reflex is the ‘parachute reflex’. The parachute reflex is designed to protect the child from falling and banging her head. The arms automatically reach out sideways when a person topples to one side, or reach forward/backward when a person falls forward/backward. The sideways parachute reflex is essential if the child is to sit unaided and usually appears from the 6th month of development. It is also important for protection during early attempts of standing, cruising and walking. At 5 months of age, Alice has yet to develop the parachute reflex, this is why mum needs to ‘prop her up’ with pillows - she cannot prevent herself from falling over.

Head righting reflexes and equilibrium reflexes work together

Maturation of the head righting reflexes and the equilibrium reflexes is dependent upon the maturation of the vestibular and visual systems. Messages from the balance organs of the middle ear (vestibular system) work together with the eyes to tell the brain how the body is positioned in relation to gravity and the surroundings. If the messages from the vestibular apparatus of the middle ear and the

messages from the eyes fail to come together well, or are late, then sitting up will be delayed. This occurs because the vestibular system plays a very important role in the generation of muscle tone - especially in the muscles that straighten out and hold a child in an upright position. If the vestibular system is impaired or disorganised in any way, the muscles have low tone and this affects the attainment of developmental milestones such as sitting up. The muscles that power eye movements are also controlled by the messages received from the vestibular organs.

Just as gyroscopes help pilots know their position in space, the vestibular system assists Alice in the guidance of movement and vision. Messages from the vestibular provide the physical reference that gives proper meaning to what she is seeing. If the vestibular system is not functioning effectively then control of eye movement and visual perception is affected, and these are also essential ingredients that allow Alice to sit herself upright with control and confidence.

Do not be in a hurry for your child to sit. Nature will determine the timing, but you can certainly help this to occur by providing the right environment.

- Lots of tummy time – helps develop head control, visual fixation and tracking skills.
- Vestibular stimulation – rocking, rolling, spinning, dancing and moving aid in the maturation of the balance organs.
- Massage – stimulates blood supply to the muscles of the body and helps development of muscle tone.
- Lots of love and hugs – the most nourishing environment for healthy brain development.

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