

Late Walkers Are Naturally Smarter

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In this issue we examine the importance of crawling to an infant's development, and the possibility that infants who are early walkers may have lower grades at school.

Crawling is an important developmental exercise for infants. Crawling is a natural instinctive newborn reflex which is designed to protect a baby from asphyxiation when lying face down. A newborn infant has this crawling instinct right from birth, however mobility is delayed until the bones, joints and ligaments are strong enough to support and actively propel the infant into all corners of their newly found world. Babies will usually be ready to crawl actively at about 9-10 months. Delay in crawling can be an indication of orthopedic problems, such as congenital hip dislocation, or of neurological problems, such as cerebral palsy. Most of the time however, delay in crawling is merely an indication that the infant needs more time to achieve the necessary coordination and a required level of physical development. Since the time at which an infant commences crawling is so highly variable, parents should not be overly concerned if their child is a late starter.

An examination of the functional aspects of crawling indicates the relative importance of the development of cross-crawl patterning. The action of crawling requires simultaneous use of opposite extremities i.e., moving right arm with left leg, followed by left arm with right leg and so on, in a reciprocating motion. Motor nerve impulses to the extremities originate in each side of the brain cortex and cross in the brainstem to supply required motor activity to the opposite extremity. Since crawling requires the simultaneous use of opposite extremities, each crawling movement therefore requires the use of both the right and left hemispheres of the brain in a complex action of neurological coordination.

The importance of this phase of development has been the subject of several studies reported in the literature, which allude to the link between early walking and later academic difficulties. Studies of children who were categorized as "early walkers," i.e., those who crawled for a comparatively short time before commencing to walk, demonstrated lower performance scores on pre-schooler assessment tests, supporting the importance of early crawling experience in the development of sensory and motor systems of the body and general motor skill development.¹

Walking

The onset of walking is regarded as a major milestone in childhood development and is a much celebrated achievement, a time when parents have the videocam at the ready to record those first faltering steps. The age at which children start walking varies considerably, typically occurring at any time from 7-15 months. Parents of a "late walker" can be encouraged by this wide normal range in the walking commencement date. A child's body has an innate understanding of the appropriate stage at which the bones, ligaments, joints, muscles and the nervous system are ready and co-ordinated to withstand the forces of erect stature. Prematurely encouraging children to walk should be discouraged

since it may predispose to increased stress on spinal musculoskeletal structures, as well as possible delay in the development of neurological coordination. Several studies have hypothesized the importance of early crawling experience in the development of sensory and motor systems of the body and general motor skill development. The 1991 study of McEwan, et al., which compared the performance of crawlers and non-crawlers on the Miller Assessment for Preschoolers showed non-crawlers to have lower average scores.²

Once the infant begins to take those first steps, changes in the alignment of the lower extremities may start to appear, while at the same time the spine commences the task of accommodating to upright posture.

Positional changes of the lower extremities are common in children. During the first year of life, several rotational problems may present. At birth, the newborn infant's feet will usually turn inwards due to the typical position occupied in utero. This internally rotated condition of the feet is called metatarsus adductus and usually resolves spontaneously by the end of the first year in 90 percent of infants.³ A most important step in examining an infant with metatarsus adductus is to check for congenital hip dysplasia, since CHD is more common in this group. Most cases of in-toeing resolve spontaneously by the end of the first year of life and require only observation on the part of the clinician.

In initial walking efforts, the toddler walks on the forefoot with a broad-based flat-footed gait with the hips held in slight flexion and no reciprocating arm swing. By the age of two however most toddlers will have established an upright, heel-strike gait and will swing the arms. Abnormal walking patterns in young children are a source of much interest to the clinician. A waddling gait may be an indicator of orthopedic problems such as infantile coxa vara or of an undetected congenital hip dislocation. Abnormalities in position and placement of the feet may be due to congenital or acquired anomalies in the bones or joints of the lower extremities or pelvis. For example, medial displacement of the sacroiliac joint with fixation may produce lateral rotation of the leg and foot on the fixed side. The opposite is also true: Lateral sacroiliac displacement with fixation may cause medial rotation of the leg and foot on that same side. Because sacroiliac joint subluxation is frequently accompanied by a physiological short leg, frequent falls by a young infant while walking or running should be an indication for the child's chiropractor to evaluate the position, alignment and length of the lower extremities.

The first year of life is a time of milestones for the infant. Parents need to be aware that to rush the process may well not be in the child's best interests. Future academic difficulties would appear to be but one of the potential problems which can be created by the over enthusiastic parent.

References

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JUNE 1995