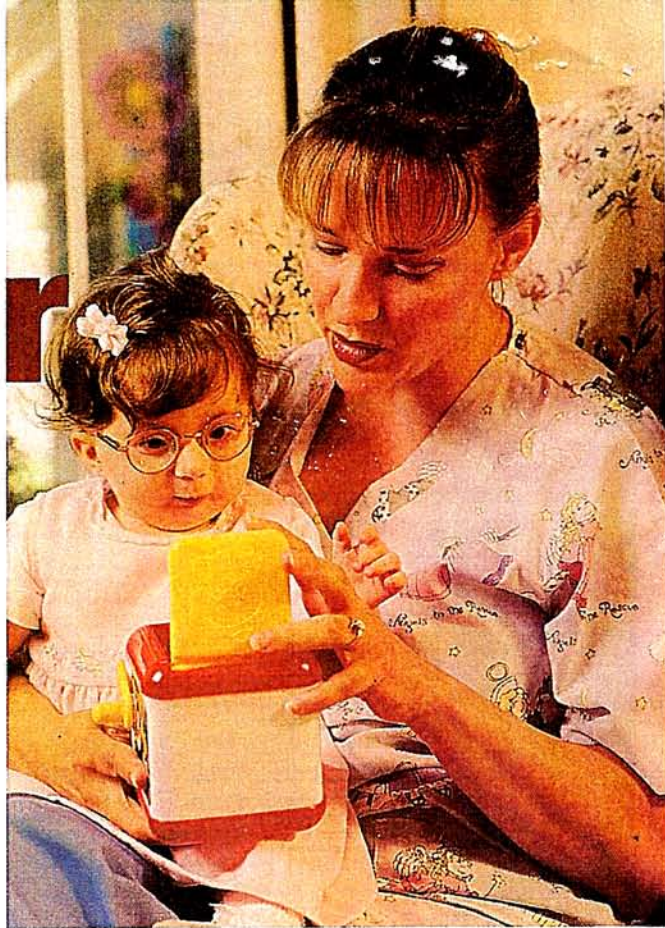


Early Motor Delays

Nurses have the opportunity to promote detection and treatment **BY ROSEMARY WHITE-TRAUT, DNSc, RN, FAAN**



AS MANY AS 400,000 CHILDREN born each year are at risk for some form of early motor delay, and one in 40 have an early motor delay, considerably higher than the incidence of other developmental problems such as autism (1 in 166).^{1,2} Early motor delays can be indicative of a range of issues, from torticollis to cerebral palsy of varying degrees.

While there is some expected correlation between low birth weight, premature birth, or other pregnancy or delivery complications and the incidence of early motor delay, anecdotal evidence from therapy practices suggests the recent rise in the incidence of early motor delays may be partly an unintended consequence of the “Back to Sleep” SIDS prevention initiative reducing “tummy time.” Leaving an infant on her back while awake shortens the baby’s primary opportunities to develop gravity-fighting musculature and gross motor skills.³

Early Identification

Despite the significant prevalence of early motor delays, only 36 percent of parents with children under 36 months surveyed nationwide could accurately identify what infants should be able to do by the end of 3 months, the earliest age at which parents and clinicians can begin to identify early motor delays. Only 5 percent would seek help immediately if their child failed to meet those first milestones.⁴

While parental awareness of milestones rose

in correspondence to age (they were far more likely to accurately identify 9-month and 12-month milestones), there remained relative complacency with regard to seeking help if a child missed even the later milestones (15 percent at 6 months, 43 percent at 9 months, 50 percent at 12 months and 51 percent at 15 months).⁴

Clearly, clinician observation remains critical to early identification and intervention for early motor delays. However, overall clinical attention to early development also is lacking according to recent studies. It has been estimated that, while approximately 12-16 percent of children experience developmental problems, only one-third of those children — usually those with the most obvious conditions — are identified in pediatric practices prior to school entry.⁵

This suggests pediatricians are struggling to meet the American Academy of Pediatrics (AAP) policy that “pediatricians should provide screening and surveillance using a combination of methods best designed to take advantage of multiple sources of information.”⁶ The Commonwealth Fund study noted among its strategies and recommendations, “As indicated in the AAP survey, physician residents and practicing pediatricians will need training to: 1) integrate methods of eliciting parents’ concerns and assessing children’s abilities into their practice, and 2) use those results to guide and improve interactions with parents.”⁵

Further, a report of the Future of Pediatric Education Workgroup in 2000 “affirmed the need to change pediatric education to develop competencies in developmental and behavioral pediatrics.”⁷

However, basic nursing education, as well as advanced nurse practice educational programs, already embody the interaction and observation skills to improve early detection and treatment of early motor delays. As the pediatric medical community rallies to better address early motor delays, nurses already are poised to lead the charge.

Early Detection Matters

The apparent difficulty in successful monitoring for early motor delays does not bode well for infants. Early intervention with physical, occupational and speech therapies can help children with early motor delays master basic life skills that might otherwise remain unattainable, or at least significantly more difficult to acquire.

The infant brain’s plasticity, its ability to create new pathways in response to injury or illness or other external stimuli, is a benefit; yet, it also may create a potential deficit. Whereas plasticity enables children in therapy to overcome early motor delays to sometimes significant degrees, it conversely enables

Figure: Guide for Early Detection

	Typical Speech Development*	Typical Play Development*	Typical Physical Development*	Signs to Watch for in Physical Development*
<p>Early Detection is the Best Prevention!</p> <p>Important Parent Ideas:</p> <ul style="list-style-type: none"> Keep a notebook for your concerns and observations. Review this chart and check the signs you see in your baby.** Share your concerns, this chart and your notebook with your child's doctor or health care professional. <p><small>**It is okay to check boxes in both the area of Typical Development and Signs to Watch for.</small></p>	<p>BY 3 MONTHS</p> <ul style="list-style-type: none"> Sucks and swallows well during feeding Quiets or smiles in response to sound or voice Coos or vocalizes other than crying Turns head toward direction of sound 	<p><i>While lying on their back...</i></p> <ul style="list-style-type: none"> Visually tracks a moving toy from side to side Attempts to reach for a rattle held above their chest Keeps head in the middle to watch faces or toys 	<p><i>While lying on their tummy...</i></p> <ul style="list-style-type: none"> Pushes up on arms Lifts and holds head up 	<ul style="list-style-type: none"> Difficulty lifting head Stiff legs with little or no movement Pushes back with head Keeps hands fistled and lacks arm movement
	<p>BY 6 MONTHS</p> <ul style="list-style-type: none"> Begins to use consonant sounds in babbling, e.g. "dada" Uses babbling to get attention Begins to eat cereals and pureed foods 	<ul style="list-style-type: none"> Reaches for a nearby toy while on their tummy <p><i>While lying on their back...</i></p> <ul style="list-style-type: none"> Transfers a toy from one hand to the other Reaches both hands to play with feet 	<ul style="list-style-type: none"> Uses hands to support self in sitting Rolls from back to tummy While standing with support, accepts entire weight with legs 	<ul style="list-style-type: none"> Rounded back Unable to lift head up Poor head control Difficult to bring arms forward to reach out Arches back and stiffens legs Arms held back Stiff legs
	<p>BY 9 MONTHS</p> <ul style="list-style-type: none"> Increases variety of sounds and syllable combinations in babbling Looks at familiar objects and people when named Begins to eat junior and mashed table foods 	<ul style="list-style-type: none"> In a high chair, holds and drinks from a bottle Explores and examines an object using both hands Turns several pages of a chunky (board) book at once In simple play imitates others 	<ul style="list-style-type: none"> Sits and reaches for toys without falling Moves from tummy or back into sitting Creeps on hands and knees with alternate arm and leg movement 	<ul style="list-style-type: none"> Uses one hand predominately Rounded back Poor use of arms in sitting Difficulty crawling Uses only one side of body to move Inability to straighten back Cannot take weight on legs
	<p>BY 12 MONTHS</p> <ul style="list-style-type: none"> Meaningfully uses "mama" or "dada" Responds to simple commands, e.g. "come here" Produces long strings of gibberish (jargon) in social communication Begins to use an open cup 	<ul style="list-style-type: none"> Finger feeds self Releases objects into a container with a large opening Uses thumb and pointer finger to pick up tiny objects 	<ul style="list-style-type: none"> Pulls to stand and cruises along furniture Stands alone and takes several independent steps 	<ul style="list-style-type: none"> Difficulty getting to stand because of stiff legs and pointed toes Only uses arms to pull up to standing Sits with weight to one side Strongly flexed or stiffly extended arms Needs to use hand to maintain sitting
	<p>BY 15 MONTHS</p> <ul style="list-style-type: none"> Vocabulary consists of 5-10 words Imitates new less familiar words Understands 50 words Increases variety of coarsely chopped table foods 	<ul style="list-style-type: none"> Stacks two objects or blocks Helps with getting undressed Holds and drinks from a cup 	<ul style="list-style-type: none"> Walks independently and seldom falls Squats to pick up toy 	<ul style="list-style-type: none"> Unable to take steps independently Poor standing balance, falls frequently Walks on toes

* Remember to correct your child's age for prematurity.

courtesy Pathways Awareness Foundation (www.pathwaysawareness.org, 800-955-2445)

children with undetected or untreated early motor delays to adapt their skills to compensate for their delay. These adaptations can result in compromised movements and behaviors that, in essence, must be "unlearned" through therapy to optimize a child's functions, including walking, talking and eating.

For this reason, the popular "wait-and-see" approach broadly held by many clinicians and parents alike is misguided in the case of early motor delays. Children who enter therapy later can face exponentially more difficult challenges in correcting their compensatory skills.

Nurses on the Front Line

Lengthy neurodevelopment examinations cannot be conducted at every well-baby visit. However, basic, disciplined observation will help identify children at risk for some degree of cerebral palsy and other motor delays. The challenge then lies in the brevity of the typical pediatric visit. Nurses, however, have an opportunity to supplement physician observation while recording vital signs and growth metrics, and observing the infant's movement patterns.

Direct observation of infants, as well as pointed queries to parents/caregivers, can identify potential areas of concern during the current or following examination. Further, nurses can broker difficult conversations between families

and physicians, and support families referred to therapy or early intervention services or who seek those services themselves without referral.

Important Observations

Observing infant movement is a labyrinth of nuances amidst cries and coos. However, there are specific movements, and qualities of movements, one can look for in various positions at the respective well-baby visit.

A common misstep in the harried pediatric examination environment is to check for a specific skill (e.g., grasping for a raisin) and to "check it off" as a child grasps with one hand while tightly clenching their other fist awkwardly by their head. Observations of a child's ability to move against gravity and coordinate sensory input and gross and fine motor skills must be holistic as well as specific. The Figure illustrates the most basic milestones that should be monitored by parents and clinicians in a child's first years.

A Mindful Approach

As important as the skills to make this early diagnosis may be, so too is an appropriately balanced approach. On one end of the spectrum, most children may only need temporary corrective therapy, if any, and may not face a protracted period of disability. Identification of an early motor delay should not be assumed a

catastrophic sentence.

However, on the other end of the spectrum, is it not productive to set unreasonable expectations for absolute normalcy. A child with an abnormal gait who has improved enough to run down the hall faster than her parents has the potential to continue developing to her fullest potential. ■

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