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National Survey of Pediatric Experts Indicates Increase in Infant Delays; More Tummy Time is Key

A national survey of 400+ pediatric physical and occupational therapists, averaging over 20 years' experience, confirms what early childhood medical professionals have been observing: two-thirds of therapists reported a rise in early motor delays in infants in the past six years, and those who saw an increase said that lack of Tummy Time while awake is the number-one contributor to the escalation in cases. Tummy Time is supervised time while awake that babies spend on their abdomens. An early motor delay occurs when a child isn't able to meet critical physical milestones in the first months and years of life, which can later affect a child's ability to learn basic skills such as grasping, crawling, standing and walking.

The survey was conducted by Pathways Awareness, a national not-for-profit that educates parents and medical professionals about the benefits of early intervention for children who show delays in reaching early developmental milestones. The survey was conducted with assistance from the Neuro-Developmental Treatment Association (NDTA) and the Pediatric Section of the American Physical Therapy Association (APTA). The goal of this survey was to quantify the observations of these highly qualified pediatric professionals, as well as identify possible contributors to the increase in cases.

When parents and medical professionals know what to look for, it's simple to recognize the signs of an early motor delay – but missing the cues or deciding to "wait and see" can lead to major developmental problems. Treatment and prevention can be as simple as more Tummy Time for babies when awake, or, for more complex cases, physical, occupational and speech therapy.

Backsleeping, "Container" Lifestyle May Contribute

The vast majority of babies now sleep on their backs to help prevent Sudden Infant Death Syndrome (SIDS). The Back-to-sleep campaign reduces the risk of SIDS by 40%, but also means that babies miss out on the 12 or so hours of Tummy Time they used to get each day. Back-sleeping, coupled with more awake time in "containers" like car seats, bouncers and strollers, adds up to so much back time that babies aren't able to develop their trunk muscles, contributing to the increase in early motor delays.

Each year more than 400,000 children in the U.S. are at risk for an early motor delay, and the actual incidence is one in 40, a 150 percent increase from 25 years ago, and a rate even higher than incidences of other accelerating conditions like autism.[1] While previous studies have linked lack of Tummy Time to early motor delays,[2] the survey by Pathways does not definitively identify lack of Tummy Time as the cause of the increase in early motor delays. Rather, the survey quantifies experienced observations by qualified professionals, which may serve as a hypothesis for a future scientifically controlled study on the rate of increase and causes of early motor delays. In addition to back-sleeping and lack of Tummy Time, the increase may also be caused by factors such as a higher survival rate of preterm babies, increased numbers of twins and triplets (who may be crowded in the uterus) and increased survival of children with cardiac, neurological and genetic disorders.

[1] Statistics compiled by the Pathways Awareness Medical Round Table from a variety of sources, including the March of Dimes, *Pediatrics* Annual Summary of Vital Statistics, and the Centers for Disease Control and Prevention

[2] Influence of supine sleep positioning on early motor milestone acquisition. *Dev Med Child Neurol.* 2005; 47(6):370-6; discussion 364 (ISSN: 0012-1622)

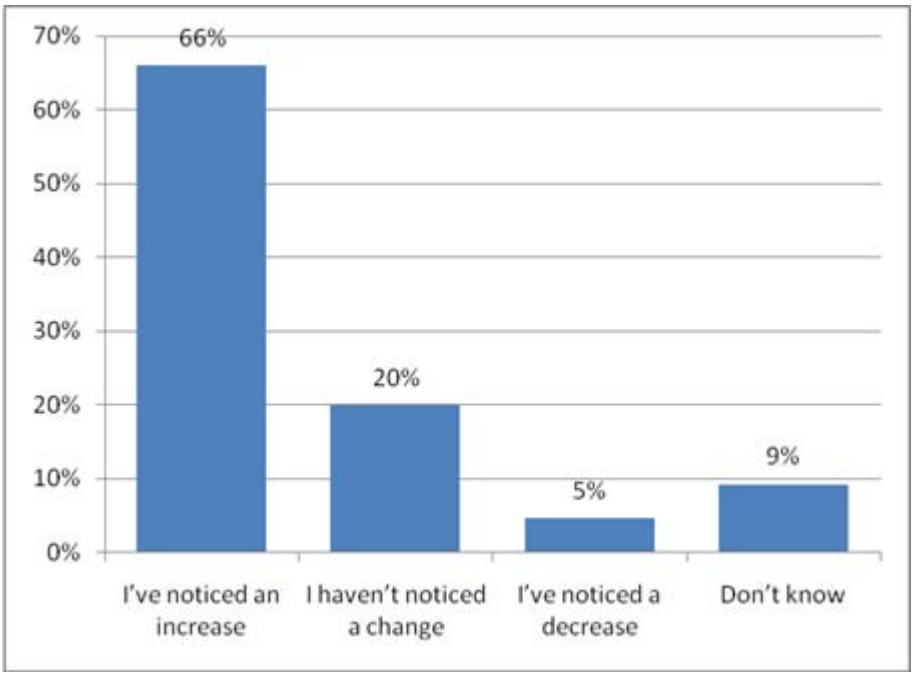
Survey Methodology and Results

The web-based survey was conducted between February and May 2008 by Pathways Awareness. Respondents were 409 highly qualified physical and occupational therapists who belong to the APTA or NDTA, who work with pediatric clients on a regular basis, and who average more than 20 years of experience. All results reported are significant at the 95 percent confidence level.

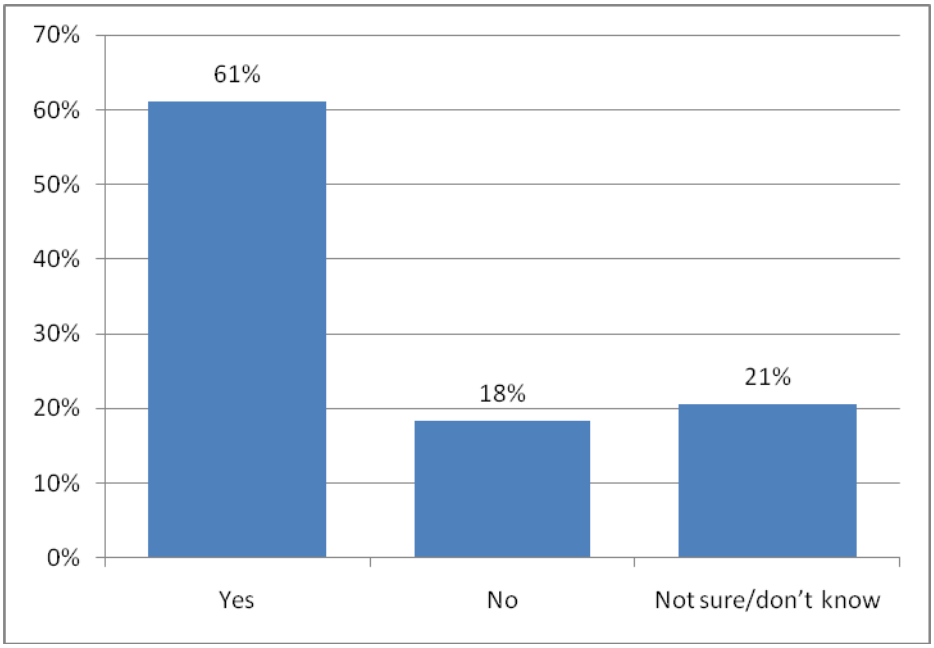
- Two-thirds of therapists (66 percent) reported that they had observed an increase in early motor delays in babies under twelve months in the past several years.
- Nearly two-thirds (61 percent) of all respondents thought that early motor delays could be caused or exacerbated by back sleeping, and 77 percent had observed early motor delay cases that could be attributed to babies spending extensive time on their backs while they were awake (in car seats, bouncers, etc.)
- The majority of therapists (76 percent) who observed an increase in early motor delays noticed this phenomenon starting within the past six years: most observed an increase starting 4-6 years ago (38 percent) followed by 0-3 years ago (38 percent).
- Of therapists noting an increase in early motor delays, the vast majority named lack of Tummy Time while awake as the number-one reason for the increase in early motor delays (84 percent), followed by the increase in premature births (59 percent) and back sleeping (54 percent).
- Therapists observed that most parents have little or no understanding of Tummy Time (70 percent)

Selected Survey Questions and Results

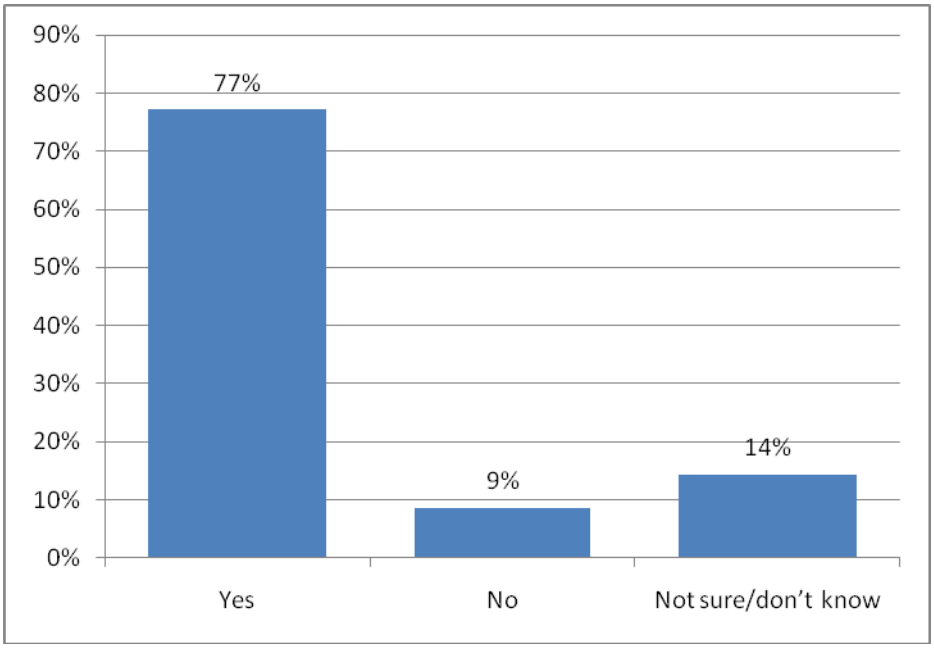
Q1: Have you noticed a change in the number of cases of early motor delays in babies under 12 months of age over the past several years? (n=409)



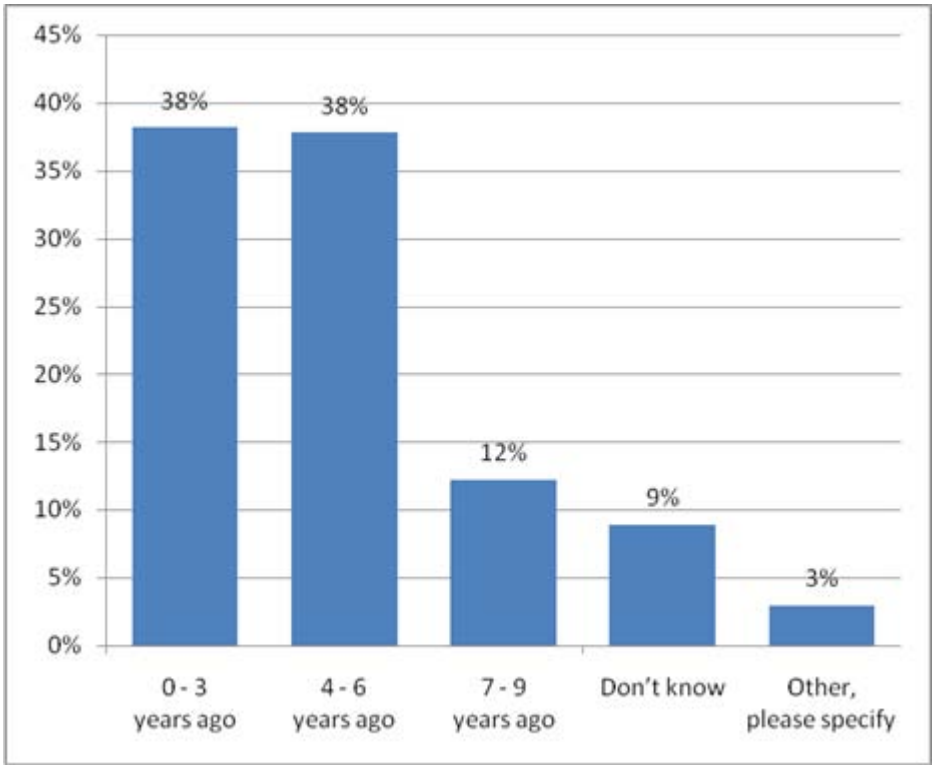
Q2: Do you think that early motor delays can be caused or exacerbated by back sleeping? (n=398)



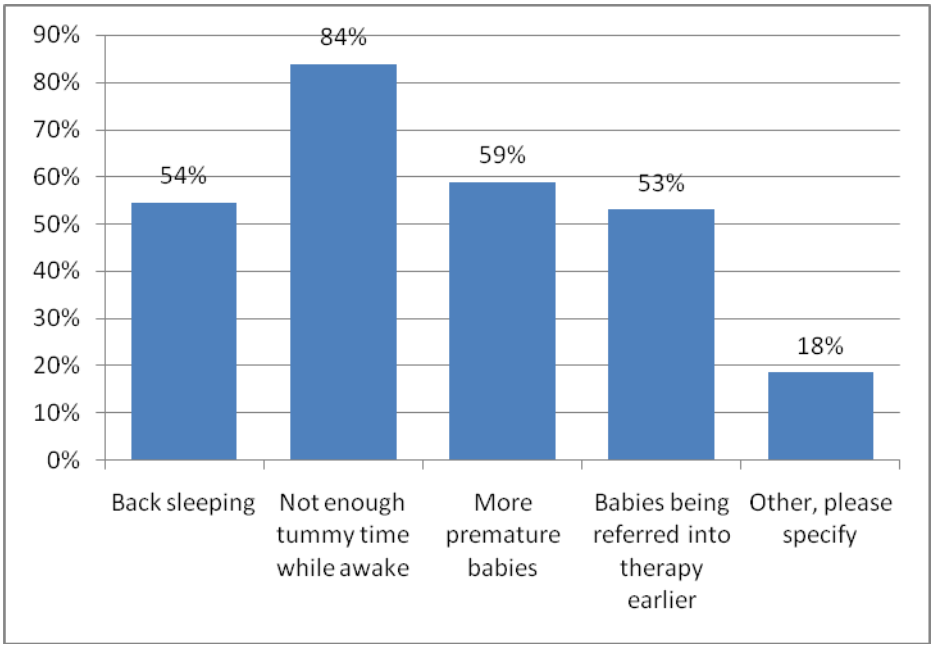
Q3: Have you seen early motor delay cases in your practice that can be attributed in part to extensive time on the back when babies are awake (in car seats, bouncers, etc.)? (n=398)



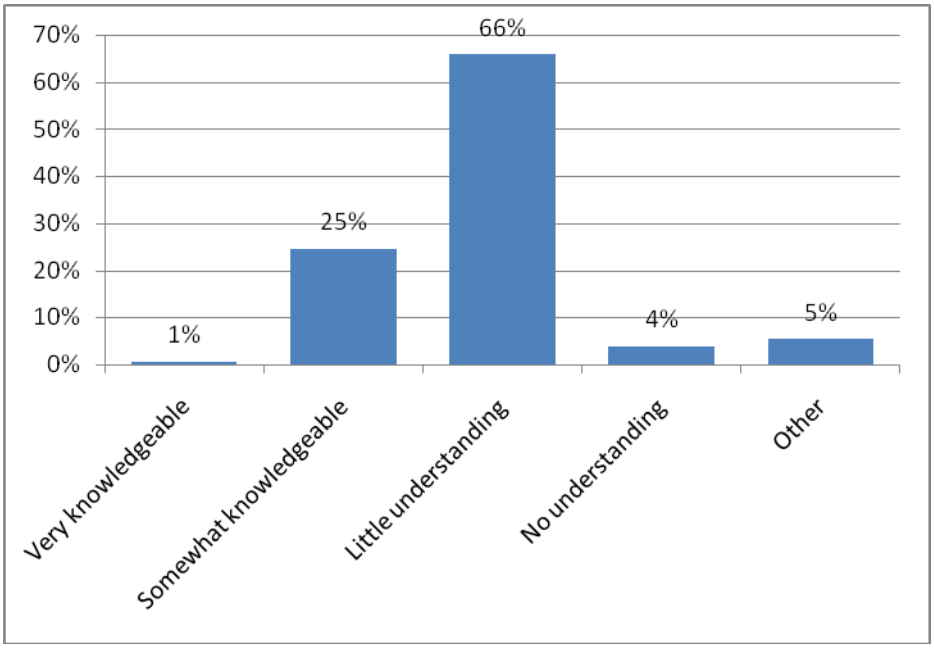
Q4: When did you start seeing an increase in early motor delays in children under 12 months? (answered only by respondents who noted an increase in early motor delays, n=270)



Q5: To what do you attribute this increase in early motor delays? (Please mark all that apply.) (answered only by respondents who noted an increase in early motor delays, n=270)



Q6: Please rate the average parent's understanding of "Tummy Time"—how they should position the baby, when they should start, and how much time babies need in the prone position. (n=395)



Why Babies Need Tummy Time and What Parents Can Do

New parents are concerned with the basics: sleeping, eating, changing and nurturing. We know that babies are spending more and more time on their backs and the pressure on the infant's head can create a flattening of the back of the skull called positional plagiocephaly. Tummy Time and repositioning an infant are two easy preventative measures that can help reduce the chance a baby will develop positional plagiocephaly. Untreated, plagiocephaly can lead to permanent deformation of the skull that can impact facial symmetry which can lead to problems such as speech and vision issues.

Babies often complain about being placed on their tummy, but if Tummy Time is begun early (even from just a few days old) and maintained on a consistent schedule, it will become a part of their daily routine. Tummy Time can improve head control which is needed for the next stages of development. Tummy Time is critical for building muscle strength in the back, neck and shoulders, strength that children also need to meet their developmental milestones. Simply holding and soothing baby in a different position can help infants become accustomed to Tummy Time. Pathways Awareness developed "Five Essential Tummy Time Moves," a short instructional film that details five simple moves that shows parents how Tummy Time can become a natural part of baby's day, rather than simply another item on their ever-growing "to do" list. There is also a printed handout which includes tips and suggestions for integrating Tummy Time into an infant's day. Pathways recommends babies start with Tummy Time for just a few minutes per day, eventually building up to an hour a day, in several shorter intervals, by three months.

Suggestions for parents can include singing songs or calling their name while your baby is tummy to tummy with you, getting down to baby's level for eye-to-eye contact and carrying baby tummy down with one hand under the tummy and between the legs – the "football hold." When a parent takes time to play with baby on their tummy, they not only further their physical development, but also build a bond and support socialization skills.

If parents have concerns about their child's developmental milestones, a growth and development chart and more information about developmental warning signs are also available on the Pathways web site, www.PathwaysAwareness.org and by calling Pathways' parent-answered help line, 1-800-955-CHILD (2445), or emailing Friends@PathwaysAwareness.org. The development chart has been endorsed by the American Academy of Pediatrics, the National Association of Pediatric Nurse Practitioners, the American College of Osteopathic Pediatricians and the American Physical Therapy Association, Pediatric Section. Pathways Awareness is a national, non-profit organization dedicated to raising awareness about the gift of early detection, the promise of early therapy and the benefits of Tummy Time.

Relevant Research

1) Influence of supine sleep positioning on early motor milestone acquisition. *Dev Med Child Neurol.* 2005; 47(6):370-6; discussion 364 (ISSN: 0012-1622)

71 healthy four-month-olds and 50 healthy six-month-old infants were recruited to measure the effects of supine sleep positioning on early motor milestone development. Researchers found that at four months, no infants were exhibiting motor delays based on standardized motor assessments. However, by six months, 22 percent of these previously typically developing children exhibited gross motor delays. The authors concluded that awake prone positioning consistently emerged as the most significant predictor of early motor development.

2) Association between sleep position and early motor development. *J Pediatr* 2006 Nov;149(5):623-629. (ISSN: 0022-3476)

Another article based on the same research above.

3) The effects of prone positioning on the quality and acquisition of developmental milestones in four-month-old infants. *Pediatr Phys Ther* 2007;19(1):48-55.
This study looked at whether positioning infants on their tummies while awake affected motor milestones. Among 100 4-month old infants, significant differences in the achievement of seven tummy, three back, and three sitting milestones were seen in infants who spent time awake on their tummies compared to those who didn't.

4) Impacting infant head shapes. *Advances in Neonatal Care,* Vol 5, No 6 (December), 2005: pp 329–340
Infant sleep position impacts the development of head shape. Since the American Academy of Pediatrics' Back to Sleep Campaign, the incidence of positional plagiocephaly (misshapen head) has increased dramatically with a concurrent rise in the incidence of torticollis (tilted neck).
Infants who require newborn intensive care, particularly premature infants, are more prone to positional plagiocephaly and dolichocephaly. Both can be prevented or minimized by proper positioning.

5) Diagnosis and management of positional head deformity. *Am Fam Physician 2003*;67:1953-6
The incidence of positional head deformity increased dramatically between 1992 and 1999, and now occurs in one of every 60 live births. With early detection and intervention, most positional head deformities can be treated conservatively with physical therapy or a head orthosis ("helmet"). Pediatric physical therapists can teach caregivers how to carry the child to lengthen the sternocleidomastoid muscle, how to encourage prone playing, and how to alter eating positions to diminish the side preference.