



# The Wellness Family

Dr. Greeley Keeps You Informed

## Tummy Time and Crawling

Every parent knows that there are certain milestones that babies achieve at certain stages of development: following objects or parents with their eyes; responding to sounds; lifting their head and torso when placed on their tummies; eventually leading to crawling, walking and then running headlong into their toddler years. However, what many parents don't know is just how vital some of those milestones can be and why they shouldn't be missed.

### The Importance of Tummy Time

Infants benefit in many ways from "tummy time". Not only does it give their neck a workout but it also strengthens their trunk or core and encourages them to look around and reach for objects. Researchers have found that more tummy time equates with better motor skills which helps with social development. The stimulation to motor pathways may encourage growth in other parts of the brain.

Most doctors encourage parents to begin tummy time around 2-4 weeks after birth. It is suggested to begin with short bouts, perhaps just two or three minutes at a time, with the goal being 30 minutes a day. This can be divided in as many smaller increments as necessary until they develop more muscle control.

It's easy to understand why an infant may not be happy when on their tummy. Since their head is quite big compared to the rest of their body and their muscles are weak, most of them will fight tummy time and this can be frustrating for everyone. Yet, the benefits of tummy time are too numerous to ignore. Babies will typically begin to love tummy time around the age of 3-4 months when they can more easily see, reach and interact with their environment. However, until that time, they will probably need some encouragement.

### Helping with Tummy Time

It helps to remember that infants do not typically respond well to sudden changes. It's wise not to implement tummy time too abruptly. Instead of just plopping the infant on their tummy, start by lying them on the floor on their back and engaging with them so that they begin to understand that this is normal. Next, gently roll them to their tummy being sure to support the spine. If unsure of how to do this safely, ask your Family Wellness Chiropractor for recommendations. Once he or she is on their tummy, get down on the floor face-to-face and talk to them. Let them know that you're there to interact. Consider placing a few toys within reach and encourage the baby to lift their head.

It is wise to avoid too much padding since you want the baby to be able to move their body. Also, do not become overly concerned if he or she is kicking, grunting or making other noises since it may just be the effort required to begin using

their muscles. If they start crying in frustration then pick them up or place them in a more familiar position. It is best that they enjoy tummy time and, if it always results in them crying to the point of exhaustion, they may not. This could be detrimental to their development since multiple studies have found a positive correlation between the amount of time back sleepers spend in tummy time during their awake hours and improved motor skills development.



*Encourage your baby to spend time on their tummies and crawling.*

### Understanding STNR and ATNR

Between tummy time and crawling, there are two important reflexes developing. First is the Symmetrical Tonic Neck Reflex (STNR) also known as the crawling reflex. STNR is a transitional reflex that helps babies change from being on their belly to up on their hands and knees. Through lots of crawling, the STNR will fully integrate (disappear) at about 1 year. If it doesn't, it may contribute to challenges with skills such as posture, balance and hand-eye coordination potentially requiring future therapeutic intervention.

Next is an infant's Asymmetrical Tonic Neck Reflex (ATNR) which should fully integrate by approximately 6 months. This reflex is what causes a baby's arm and leg to stretch in the direction they are looking while the other arm and leg will flex or bend. The ATNR reflex actually develops in utero but is encouraged through tummy time as babies develop the ability to push themselves up off the floor with their hands and turn their head to look around with more neck control.

These reflexes develop more fully through tummy time and crawling, and a lack of integration may have future developmental effects. For example, Dr. Miriam Bender wrote in "Stopping ADHD" that at least 75% of the learning-disabled people surveyed had an immature STNR contributing to their disability.

### Benefits of Crawling

There is growing evidence that crawling plays a vital role in an infant's early childhood development. It helps with strengthening the trunk or core, improved balance, better

spinal alignment, enhanced visual-spatial skills, improved socio-emotional development and, as some studies suggest, may help avoid future learning problems.

First, crawling will help to develop the muscles and joints near the center of the body – the tummy, back, neck, hips and shoulders – which will play an important role in improved gross and fine motor skills, balance, hand-eye coordination and overall strength.

Equally important is the advancement of bilateral coordination. Crawling allows babies to create connections between both cerebral hemispheres. When infants coordinate their movements they first move one arm and the opposite leg then the other arm and the opposing leg in reciprocating motion; this is called cross-crawl patterning. The nerve impulses originate in each side of the brain cortex and cross at the brain stem in the corpus callosum to send the signal to the opposite arm or leg. When an infant is crawling their brain is developing neurological routes to help send these signals quickly back and forth. With the exception of rock-wall climbing, crawling is the only activity that will encourage the development of these patterns.

Additionally, it's important to take into account the typically unrecognized physical benefits of crawling such as: the development of the arches of the hand; the lengthening of the finger muscles; the recognition of the skill side of the hand (the side with the thumb) and the stabilizing side of the hand; as well as the development of the muscles in the hand especially the "web space" next to the thumb which affects future pencil grip ability.

### **Other Benefits of Crawling**

The visual system is developed while crawling since it challenges an infant to accurately move their eyes and adjust their vision to see items and different distances clearly. Infants will typically look up to see where they are going and then look down at their hand placement requiring their eyes to adjust.

Visual perception is also improved as crawling requires an infant to begin to understand spatial awareness. As they begin to explore their surroundings they exercise their visual perception as they are required to understand how far an item is from them as well as making their brain actually identify what they are seeing.

Additionally, crawling will benefit the sensory systems such as the vestibular system. This is the system that helps contribute to a sense of balance and spatial orientation based on what is being seen and experienced by the infant. Sensory input is being received all the time and crawling develops the systems that help our bodies know how to take that information and apply it to our lives at that moment. If these systems are underdeveloped it may result in sensory processing disorder which makes it difficult for a child to interact with their environment.

The accurate processing of sensory information helps develop body maps and motor planning, which is the ability to recognize an unfamiliar task and determine a way to complete it such as learning to climb stairs or get up onto the couch.

These systems and more are developed and improved through crawling.

### **In Summary**

Encourage your baby to spend time on their tummies and crawling. If your infant pulls themselves up with furniture and starts "traveling" too early in their development then gently put them back on the floor and encourage them to crawl. If needed, get down on the floor and crawl around with them. There are proven benefits from crawling, no matter your age.

Doctors of Chiropractic are the only healthcare professionals that recognize the important balance between the central nervous system and how the body functions. Your Family Wellness Chiropractor is available to answer any questions regarding your child's emotional, physical, and mental development. They are available to help ensure that your infant reaches each and every developmental milestone.



*Dear Patient,  
Dr. Greeley is dedicated to providing you with the absolute best in family wellness care. So take a moment today to discuss with your Family Wellness Chiropractor any concerns you may have regarding your family's overall health and wellness.*

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