Magical Milestones for Healthy Baby Development

Dr Melodie de Jager

1. Milestones- an overview

Motor milestones are beacons of progress; they show moms and dads if their baby’s senses of touch, smell, taste, hearing and sight as well as the inside senses and the muscles are developing in sequence like nature intended it to be. If the senses and muscles are wired well and integrated to form a detailed and functional map of baby’s body, baby will reach each milestone in sequence and within the appropriate time frame.

If the pregnancy progressed without a glitch and baby’s birth went smoothly, then it is up to mom, dad and caregivers to provide baby with enough freedom of movement (with safety in mind) and stimulation to meet each motor milestone with great excitement. There are many other kinds of milestones: emotional milestones, social milestones, language milestones and cognitive milestones, but this article focuses on the motor milestones only.

All the other milestones are equally important, but the developmental priority from conception until 14 months is physical development. Sensory development is equally important, but due to a baby’s limited ability to tell mom, dad and the paediatrician what he can feel, smell, taste, hear or see, measuring sensory progress is a little more difficult.

Milestone tips:

- Milestones are beacons of progress
- The order in which milestones are reached is important
- Reaching milestones earlier is not better
- Physical development should be optimised between 0-2 years

If one looks at the graph you will see that birth to 2 years is the time that the brain grows the most, we must make the most of these two years.

Wherever “he/him” is used to refer to “the child”, “she/her” is also implied.
2. **Breastfeeding**

Feeding is life saving and even though it is seldom viewed as a motor milestone, it actually is baby’s first motor milestone after birth. A sucking baby is content, because the rhythmic pressure of his tongue on his palette is soothing and helps baby to relax and dissolve the overdose of stress hormones, when he gets startled or stressed. Sucking for nourishment is called suckling. Sucking with an ‘l’ – suckling, is much harder than sucking because baby needs to grasp moms breast firmly with his lips, his tongue needs to cup around the nipple or teat and he needs to suck in such a way that he creates lots of suction to get any milk out of there. At the same time he needs to swallow and breathe too. What an accomplishment to be able to feed and baby is not even an hour old yet!

**Sucking** is for nurturing (to feel good)

**Suckling** is for nourishment (food)

**WHAT BabyGym® CAN I DO TO ENCOURAGE BABY TO FEED WELL?**

- Gently simulate contractions around the crown of the head by rhythmically and gently applying and releasing pressure before a feed and even during a feed when he is about to fall asleep and not done yet.
- Gently draw the outline of the lips with your finger, a cotton bud or a thimble toothbrush.
- Use your finger to outline the inside of the mouth. This helps to close baby’s lips and promote suckling.
- Massage the hand and firmly apply pressure to the palms of the hands.
- When feeding hold baby and swop arms mid-feed. Make eye contact.

3. **Strong neck**

A baby that suckles with ease is a happy and growing baby, but growth alone is not enough, baby also needs to develop. Development happens from top to toe (cephalo-caudal), ‘top’ refers to his neck and ‘toe’ refers to the core muscles of his back and tummy. This means that a developing baby can turn his head from side to side and increasingly hold his head up to learn to see a bit further and start making contact with the world around him. Once his head is stable, his tummy and back muscles must also learn to develop so he can become mobile.

Once baby has repeatedly fought the pull of gravity by attempting to raise and turn his floppy head while enjoying tummy time or during rug time, his muscles will have strengthened enough to want more. Once he has successfully strengthened his neck and shoulder muscles, baby is no longer satisfied to only engage through touch, smell, taste and hearing; baby’s sense of curiosity to know what is further afield stimulates his eyes to work together. To enable baby to see further afield, his eyes need to work like the team of horses pulling a cart and his core muscles need to develop.

The core muscles are the neck, tummy and back (abdominal) muscles, as well as the stabilising muscles that prevents baby from toppling over sideways. The muscles of the shoulders, arms and hands as well as the hips, legs and feet can only develop once the core is strong and stable. Core stability is needed before a baby can naturally roll over, sit, crawl, feed himself or walk.

A strong neck and a stable head lead all physical development

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4. Rolling – left/right brain

Rolling over is the result of the hours baby has spent flat on a rug, exploring his range of movement when on the back or tummy, hence the term ‘rug time’. When a baby explores the range of his arm and leg movements freely, he becomes more aware of his direct environment; he becomes curious to explore.

Baby’s left brain controls his right arm and leg, while baby’s right brain controls his left arm and leg. Stimulating his left brain is important because it develops the mechanics and wiring needed for language development, logical reasoning, planning and organisation, attention to detail and the ability to store facts in an orderly manner. Stimulating his right brain is important because it wires baby’s brain to be flexible and a creative problem solver. A stimulated right brain also means baby can grow up to be a lateral thinker, with great spatial skills and the ability to see the bigger picture. Due to the different functions of the left and right parts of the brain, rolling over in both directions is important.

WHAT BabyGym® CAN I DO TO ENCOURAGE BABY TO ROLL OVER?

- Make sure that your baby suckles well, develops strong neck control and has strong tummy and back muscles by allowing him to play unsupported and flat on the carpet. Baby will moan, but encourage rug time by placing a colourful toy on a plain rug just out of reach. Sit on the rug with baby and encourage baby to reach for the toy by moving the toy to the left and right of his body to hold baby’s attention and interest.
- Make sure baby is not wearing tight clothing, bulky, sopping wet or scratchy nappies, as this can also prevent movement.
- If your baby finds it difficult to roll, you can help him roll until sufficient muscle memory has been created. Roll baby onto his side and let him complete the rolling process on his own. Repeat for a few days until baby starts rolling over by himself. Remember baby needs to roll to the left and to the right.
- Rolling over is a precursor to crawling and later to reading and writing ease. It is worth the effort to encourage baby to roll to the left and to the right. Pack away the pram, supporting chair and walking ring and unfold the rug!

5. Sitting – muscle tone

When baby started to roll over, it was celebration time because that movement said that baby’s neck and core are stabilising well and the part of the brain responsible for the first step in an upright posture is about to be wired. Raising his head off the ground was preparing baby for an upright posture, but sitting will say: “I have defied the pull of gravity, look, my back is straight!”

Balance develops when baby senses where ‘up’ is and moves his head in that direction and muscle tone develops when baby pushes his own weight away from the ground and holds it before he lies down again.

Baby needs to learn two kinds of balance - to stay up while in the same place, and to stay up while moving. Staying up does not only mean standing straight like a soldier on parade, it also means to not fall over. Staying-up-while-in-the-same place is the first of the two to develop and is a direct result of baby’s stable neck, strong core (tummy and back muscles) and trunk rotation, which develops when the hips and shoulders work independently while a baby is rolling over. Staying-up-while-moving develops later when baby is sitting, crawling, self-feeding, cruising and walking. The ultimate form of balance is to STOP moving and to sit or stand STILL.

There are two kinds of balance:

Static balance - to hold a posture without support, like when you are sitting or standing; in other words being upright without moving around.
Dynamic balance - to hold a posture while moving in a coordinated way.
WHAT BabyGym® CAN I DO TO ENCOURAGE BABY TO SIT?

- Enough rug-time allows baby to roll over and, with time, space and practice, starts supporting himself on his own forearms.
- After a while, he will start supporting his weight on his hands with extended arms while spreading his legs to establish a stable base.
- His newly developed tummy and back muscles come to his aid in attempting to raise his body up into an upright position.
- Initially he may lean forward and support his body on both hands, but soon his balance and coordination allow him to sit upright.

6. Grasping – early speech

Sitting is an important motor milestone, because baby starts developing new ways of seeing what the world looks like from a stable sitting position. This new way of seeing rewrites his body map to become more three-dimensional, and this three-dimensional world looks just so much more exciting and is begging to be explored. It is baby’s growing sense of curiosity that sparks the need to reach out with his hands to develop hand coordination. Hand-eye coordination develops when baby’s eyes spot something worth exploring and he reaches towards it.

For the first few months he just swats at a swinging toy, then he manages every now and then to accidentally grab a toy, till finally he starts to reach for a toy and deliberately, rather than reflexively grasp it firmly and on its way to his mouth it goes. Baby’s consistent practice over the months and mom and dad’s unwavering ability to come up with new and exciting things made from different textures for baby to reach out for, to touch and to grasp, all help to make his arm and hand movements smoother, more controlled and more accurate.

Being able to sit enables baby to develop social interaction and eye-hand coordination necessary for self-feeding, playing, drawing and many years later for writing and reading.

7. Creeping and crawling

Crawling is quite far down the line of motor milestones and draws together the wiring and maps of all the previous motor milestones. Once rug-time has supplied the ideal conditions to merge all these maps and wiring, baby is ready to crawl and strengthen his advanced map, to be able to have postural control, balance, locomotion and manipulation. But, this means baby cannot only crawl for a few days and then get up and start cruising, baby needs to crawl for quite a while to insulate his advanced map.

Research has indicated that it takes more or less 50 000 repetitions of a specific movement to complete the wiring and insulation.

Mom, dad and caregiver, you will have to be quite ingenious to come up with games to keep baby on his knees - as the old people used to say: you must crawl before you can walk.

Locomotion means to move, and crawling is baby’s first experience of moving forward. He has been moving from one place to another rolling to the side, but he has not moved forward yet. Crawling teaches baby to move forward. While crawling, baby becomes aware of the left and right sides of his body and of crossing the midline between the left and right side of the body and his brain. This happens naturally when his head moves to look at his left hand and then as he crawls and he puts the right hand forward, his head turns, he crosses his midline and looks at his right hand.

Children who cannot cross their midlines tend to write or draw until they get to the middle of the page and then change the pencil to the other hand; or they stop reading at the middle of the page; or they start reversing letters and numbers and turn sideways at their desks. This happens because crossing the midline involves both eyes, both
ears, both hands and both feet as well as the core muscles on both sides of the body effectively stimulating both hemispheres and all four lobes of the brain.

Baby also learns to navigate and experience in and out, and over and under; very important experiences to make sense of his ‘world map’, when he needs to crawl over the carpet and under the table and out of the passage and into the kitchen. At this stage mom and dad’s home is baby’s whole world; home is baby’s mini map of the world.

**WHAT BabyGym® CAN I DO TO ENCOURAGE BABY TO CRAWL?**

To ensure baby is going to crawl, pull out the checklist and double check: did baby suckle well? Does baby turn his head with equal ease to the left and to the right? Can he lie on his back and vigorously kick with both legs? Does baby roll? Does baby have such strong tummy muscles that baby can do ‘ladies’ push-ups and sit-ups? Can he push his weight unaided off the floor and coordinate his muscles to move into a sitting position?

Create loads of opportunities for baby to lie flat on his tummy and his back to move unhampered on a rug. When a baby is ready to become mobile, he starts moaning, pushing and shoving - a very good sign because moaning is early talking and sparks the need for new wiring to form in his brain. This wiring takes a while to develop, which means that baby will continue moaning, pushing and shoving until all the necessary muscle strength, coordination and muscle control have developed to push him up into an all fours position.

A word of caution: mom, dad, granny and caregiver, stop yourself and each other from continually coming to baby’s ‘rescue’ during this period to save himself (or yourselves) from the moaning and struggling, it may just rob him of an opportunity to synchronise the workings of all the different muscles, senses and brain.

- Place toys or a treat just out of reach to stimulate the desire to be mobile.
- If baby shows no sign of starting or wanting to crawl, fold a tea towel or towel nappy into a rectangle. Place the rectangle on the floor and place baby on his tummy on the folded cloth with its ends sticking out on both sides of baby. Pull the ends upwards and baby’s body will automatically rise into an all-fours position. Gently rock baby forwards and backwards. Do this daily, until baby starts moving to crawling out of his own accord.
- Put baby on your lap or the rug and take his ankles in your hands. Push the ankles upwards one at a time to bend the knees one after the other as though baby is riding his bicycle. Move the legs slowly as though going up a hill and then fast as though going downhill. Sing the same song or say the same rhyme every time baby is cycling and soon he will start anticipating with great pleasure when you will be going faster or slower. Dad, baby needs your help. Baby tends to open his knees diamond-shaped while he is cycling. Watch his wheel alignment, baby’s knees need to go up straight (ankle and knee aligned) to teach his muscles what crawling feels like.

8. **Standing, cruising, walking and talking**

Until baby has started to move from one place to another, baby has been ‘an extension’ of mom and totally dependent on mom. The moment baby can pull up and stand upright, baby becomes his own person. Standing, cruising and walking are like graduating from ‘everything is about me’ to learning about ‘we’. Where up until now
baby’s focus was discovering his body and what it can sense and do, once baby can stand, cruise and walk, the focus shifts from ‘me’, to discovering ‘we’ - the environment, objects and people.

Once baby can stand, cruise and walk, he is free to reach out; to expand his territory and finds his world a source of intense stimulation and fun. Now his three-dimensional map of a table is complete - he saw it from underneath while he enjoyed rug time; he saw it from the side when he sat and crawled and now he can finally see it from the top too and voila! - his three-dimensional map of this table is complete.

New objects mean new words and baby’s vocabulary expands rapidly. This is a time of discovery and nothing is perceived as out of bounds. Ensure your home is child-safe!

Bare feet are the best shoes baby can wear, because they can bend and straighten; allow his foot to arch and his toes to grasp onto gravity without a sole obstructing them.

Mom and dad, your response to baby’s attempts and falls determine what happens next – the more you protect, the more baby hears you say: “I don’t think you can do it.” The more you allow baby to learn from falling, but comforting him and putting him down to go again, the more baby hears you say: “I know you can do it.”

WHAT BabyGym® CAN I DO TO ENCOURAGE BABY TO WALK?

- If baby still doesn’t pull himself up, place him in a kneeling position in front of a low but sturdy object. Raise the one knee and put the foot flat down on the ground. Keep his knee straight above his ankle and gently lift baby in such a way that it will shift his weight onto his foot. Slowly raise baby into an upright position so his weight is on both his feet. Repeat a few times over a couple of days, till baby has developed sufficient muscle memory to know how to do it on his own.
- Push toys, kiddies’ strollers and cooler boxes provide superb opportunities to practice walking while comforting baby with the idea that he is still being supported by the push or pull toy, stroller or box.
- If you are in doubt, rather ask for help and guidance from a professional person such as a neurodevelopmental physiotherapist or an occupational therapist with SI (sensory integration) training, or visit www.babagym.co.za for a BabyGym® Instructor near you. Raising your little one is teamwork, you don’t need to know everything, you just need to know who to ask.

Baby no longer just responds to others, he now starts initiating contact with others by calling out, extending his arms to be picked up and wants to play games like peeka-boo, catch me if you can, etc. During the same period baby follows every move mom and dad makes so he can learn from you. Baby also starts imitating mom and dad’s speech and it is at this stage that simple repetitive sounds such as “ma-ma”, “da-da”, and “ta-ta” emerge. At the end of baby’s first year, the three of you (mom, dad and baby) have built a rich repertoire of ways to communicate that makes baby instinctively aware that he is loved and accepted. It is from this secure and warm ‘nest’ developed over time that baby ventures forward to make friends and to be a friend.

Bibliography


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