

TUMMY TIME: DEVELOPMENTAL CONSEQUENCES & FUTURE IMPLICATIONS



- For most babies it is desirable and extremely important to spend time daily on his/her tummy (prone) while alert and supervised.
- Tummy time experience between the newborn and twelve month age impacts future development in many crucial ways.
- This brochure highlights the impact on overall body strength, mobility, freedom of movement in the upper extremities, balance, sitting posture, and bilateral integration.
- It seems clear that if a baby spends safe and supervised time in prone (on their tummy), the child will be afforded the best opportunity for optimal motor and functional development.



Tools To Grow, Inc.



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FOR HEALTH CARE PROFESSIONALS

ADVICE FROM A PEDIATRIC
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TUMMY TIME:

PRINCIPLES OF NORMAL DEVELOPMENT, DEVELOPMENTAL CONSEQUENCES & FUTURE IMPLICATIONS



ANTI-GRAVITY CONTROL:

- Needed for initiating, maintaining, and terminating movement.
- Future implications is decreased muscular strength.
- Developmental Consequences may range from poor sitting posture at the classroom desk to the need for adapted seating devices.

FREEDOM OF MOVEMENT IN SPACE OF ONE BODY AREA IS RELIANT UPON WEIGHT BEARING IN ANOTHER AREA :

- A baby positioned in prone that bears weight on her elbows has the freedom to explore with her hands while rotating her forearms from pronation to supination.
- Future Implications: try to use crayons, scissors, keys, zippers, or a fork with poor or absent forearm rotation.

ELONGATION OF MUSCLES PRECEDES ACTIVATION OF A SINGLE OR GROUP OF MUSCLES:

- While a baby spends time in prone, the anterior muscles (ex: hip flexors, abdominals, neck flexors) are being lengthened.
- As a result of this muscle elongation, these same muscles (ex: hip flexor, abdominals, neck flexors) are afforded the opportunity to fully activate in a controlled manner when in the supine position.

BALANCE BETWEEN ANTERIOR & POSTERIOR BODY PLANES:

- While in prone the child must achieve full extension against gravity with elongation of the antagonistic flexor muscles.
- Likewise, while in supine the child must also achieve flexion against gravity with elongation of the antagonistic extensor muscles.
- Future Implications: this balance is necessary before automatic reactions and equilibrium reactions can be fully realized.

CHRONOLOGICAL DEVELOPMENT IN THE PRONE POSITION

- This information assumes that a child is developing in a typical manner and has regular belly time experience.
- These sections consider the “developmental consequences” of each age range, and why safe and supervised routine belly time for babies is important.

NEWBORN

- When prone on a firm surface, a healthy and typically developing newborn can turn his head to keep his airway open.
- The newborn needs the opportunity of being prone with pressure on his upper shoulder and hands as a fulcrum to allow for movement in his neck to raise his head.

1 MONTH OLD

- When prone, the baby’s shoulders start to depress into the surface with more weight bearing.
- The baby’s weight is beginning to be shifted toward her upper chest.
- Developmental Consequences: This sets the stage for future activation of the muscles of the scapula and spine.

2 MONTHS OLD

- In prone the baby begins to experience active adduction of the scapula.
- This is very important for reinforcing extension of the spine.

3 MONTHS OLD

- In prone the baby should display more combinations of shoulder movement due to dissociation between the humerus and scapula.
- Future Implications: full dissociation is necessary for controlled reaching in space.
- Baby experiences a shifting of weight between the ulnar and radial side of her hand.
- Without belly time, a baby will miss this opportunity for opening and expanding the hand so as to develop arches.
- Future Implications: fully developed hand arches provide the foundation for individual finger movements and graded grasp and release.

4 MONTHS OLD

- At this age babies are social and easier to engage.
- There is good head control in prone.
- The Landau reaction provides strong adduction in the scapula in its shortened range.
- Future Implications: very important for future grading of shoulder movements.

5 MONTHS OLD

- In prone the baby can use his arms to push up high enough to place the base of support at the pelvis.
- This lengthens the hip flexors to for optimal activation.
- This is necessary for assuming the quadruped position.
- At this age the baby can also reach with one arm while the other arm is bearing weight on the surface. While doing so the child rotates his torso.

6 MONTHS OLD

- While in prone, the baby begins to reach up high with one arm, thereby rotating one side of his pelvis off the support surface.
- Developmental Consequence: baby is preparing to use the movements needed to creep and move into sitting.
- While in prone, babies also begin to use their arms to push back and shift their weight from side to side.
- Future Implications: may include decreased upper extremity strength and poor hand arch formation.

7 - 9 MONTHS OLD

- Baby pivots and belly crawls while prone.
- Without this experience overall upper body and arm strength may be decreased.
- Future Implications: child may refrain from upright locomotion (such as cruising, early walking) if he/she has ineffective protective extension.
- Around 8 months a baby may move from quadruped into the bear position. The bear provides an excellent opportunity to lengthen the hamstring muscles.
- Future Implications: without lengthened hamstrings and freedom in all planes of pelvic movement, a child may not be able to use a variety of sitting postures.

10 - 12 MONTHS OLD

- Given the opportunities afforded by regular belly time experience, at this age a baby has full spinal extension.
- This allows for optimal reaching, rotation, and bilateral hand use while floor sitting.
- The baby can freely move out of prone to sit, creep, or pull to stand. He/she is on their way!