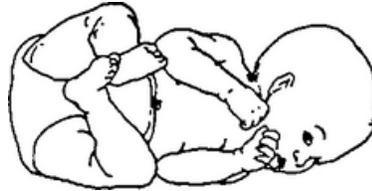


# Development of Head and Trunk Control

Reference: Communication Skill Builders



Because room in the womb is so limited, babies are born curled into the fetal position.



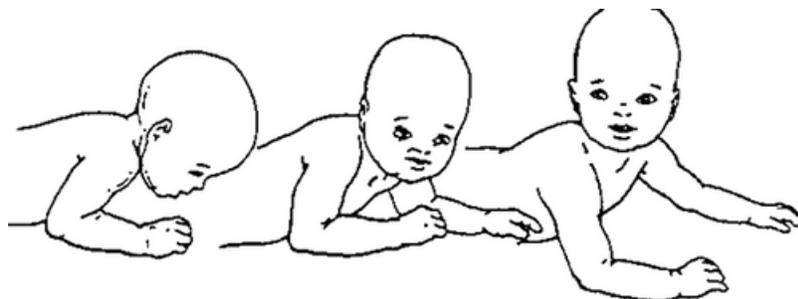
After birth, the fetal position helps protect the baby. The strong curving, called flexion—lasts for about sixteen days, and makes it seem as if the baby has some head control, since the head appears to be held in the middle. The flexion makes it uncomfortable for the baby to stay in the tummy lying position, because it drives the baby's weight onto the face.

## Development of extension

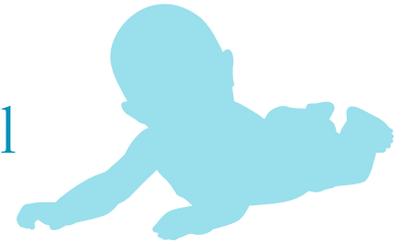
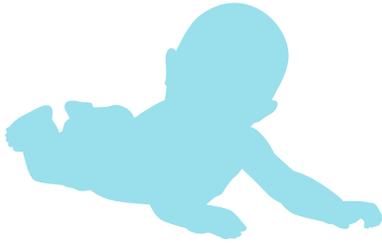
Your baby automatically begins to move out of the fetal position. Extension is your baby's first active movement: it occurs when the skull, neck, and back work against gravity when the baby is tummy lying. At first, the head is turned to the side and the arms are beneath the body when attempting the first head lift.

Reflexes called righting reactions help your baby keep the head upright and aligned with the body. Righting reactions, which are stimulated in the inner ear by the force of the surface pushing against the head, forces within the vertebra, and the infant's visual interest, keep the head in a position where the eyes are horizontal and the face is vertical.

At first, all your baby can do is lift the head briefly and turn it from side to side. After lots of practice and repetition, the baby can hold the head at an angle with the forearms carrying some weight. Finally, the head comes all the way up and the elbows are straight.



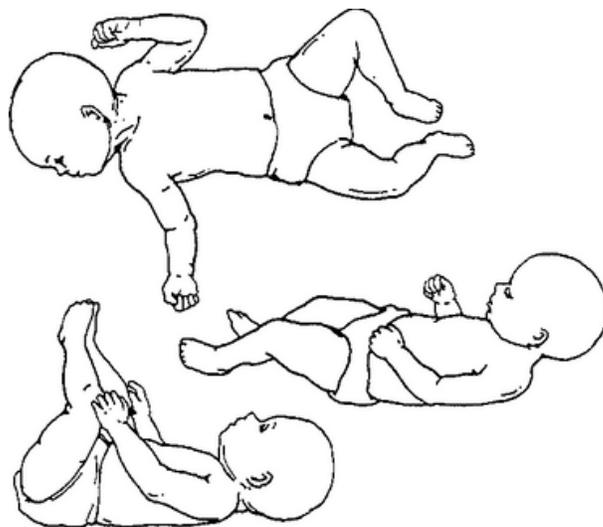
# Development of Head and Trunk Control



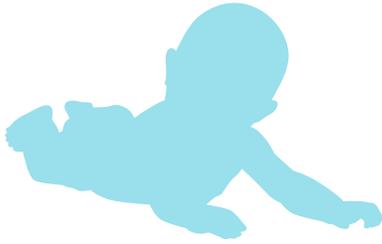
## Development of flexion

Extension appears first, but flexion follows soon after. Flexion develops with the baby in the back lying position. Flexion occurs when the muscles on the front of the body contract. Once your baby works out of the fetal position, active flexion begins.

Your baby's posture is not symmetrical because of something called the asymmetrical tonic neck reflex—the ATNR. This reflex affects the posture of the head, neck, and limbs. Your baby begins to work out of the ATNR by exploring the chest with the hands. As the hands move toward each other, the head and eyes begin to move toward the middle briefly.



After lots of practice and repetition, your baby can put one hand over the other on the chest or abdomen. Your baby examines the hands carefully: vision helps the head remain stable in the middle, giving your baby a symmetrical position. Then the baby begins to lift the head, as if doing sit-ups. With the hands at the center of the body and the eyes looking down to the feet, the baby begins to lift the legs toward the body. The hands first reach the thighs, then the knees, then the feet. Finally, the baby is able to put the feet in the mouth.



# Development of Head and Trunk Control



## Development of lateral movement

Your baby achieves symmetry—the midline position—when extension and flexion in the head and trunk are balanced. This lets the baby learn about the middle of the body. The baby is able to push up, bring feet to mouth, and sit momentarily. Now it's time to move out of these positions.

Controlled flexion and extension work together to bring about lateral movements. In lateral movements, all the body weight shifts to one side, freeing the opposite side for movement. In the tummy lying position, the baby begins to roll, pivots in a circle on the tummy, and crawls on the tummy. In the back lying position, your baby begins to roll.

When sitting, your baby can prop on the arms to keep from falling and can reach for toys placed to the side or held in the air. Lateral movements are how the baby learns about the sides of the body.

## Development of rotation

Rotation—a twisting movement along the spine—is the most advanced movement pattern. Like lateral movement, it requires a balance between flexion and extension of the head and trunk. Rotation improves the baby's balance and makes the baby's movements as efficient as possible.

Rotation lets the baby use reflexes called equilibrium reactions. Equilibrium reactions are how the body responds to a shift in the center of gravity and tries to keep from falling. Rotation can be seen when your baby begins to crawl rapidly, bottom swinging from side to side.

In the sitting position, rotation can be seen when your baby turns the upper body without moving the hips. Another time is when the baby moves from sitting to hands and knees and then back to sitting. You can also see rotation in a baby's walk, when the arms swing opposite the hips. Rotation lets the baby learn about the front and back of the body and how the sides of the body work together.

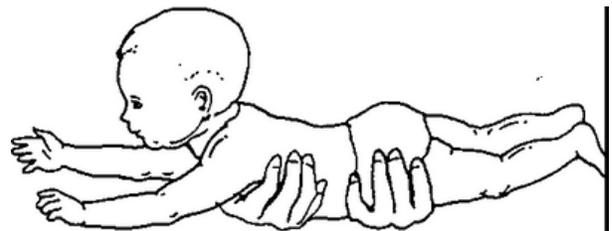
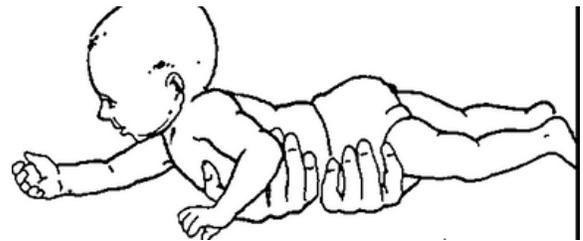
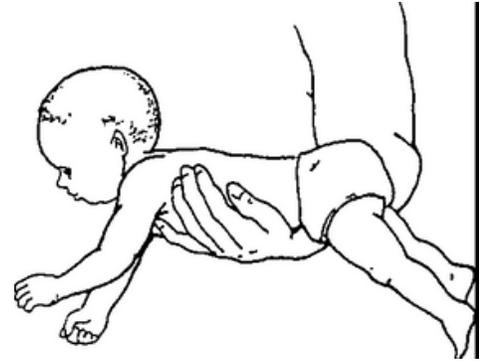


# Development of Head and Trunk Control



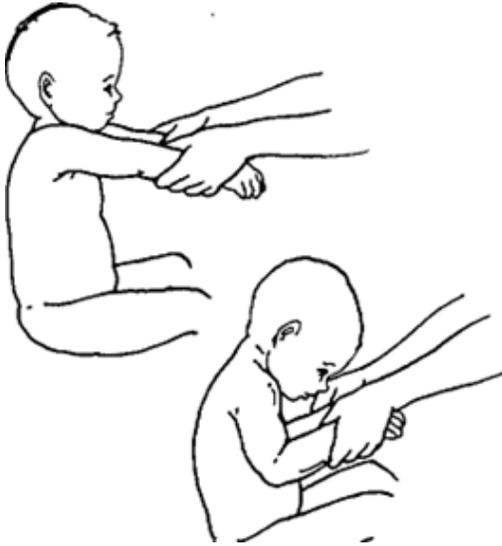
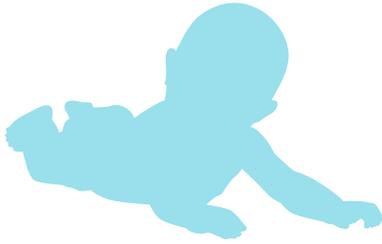
## Testing head and trunk control

To test for head and trunk control, the examiner will put your baby into different positions to see how your baby responds to movements in space. Here are some of the things the examiner will look for.



To test extension: One way to test extension is to look for the Landau response. The examiner supports the baby under the stomach and holds the baby out in space, face down. The examiner looks to see if the baby lifts the upper body, the upper and lower body, or the entire body—looking like an airplane.

# Development of Head and Trunk Control



To test flexion: The pull-to-sit maneuver is used. The examiner holds the baby's arms and pulls slightly to start an upward movement, in order to see how well the baby controls the head and uses the arms.

To test lateral control: This tests the optical righting reaction and the lateral trunk righting reaction. The baby is held upright and then is moved to one side. The purpose is to see how well the baby can realign the head to the body.

To test trunk righting: The baby is sitting. The examiner holds the baby at the hips and moves the baby to one side, watching to see if one side of the body lengthens while the other side shortens.



To test equilibrium: The baby sits on the examiner's lap or on a tilt table or rocker board. The bodyweight is shifted to one side. The first reaction will be lateral righting, followed by trunk rotation with the shoulders moving opposite the hips.