

walking. Normally at birth the feet are held in a valgus (outward) or varus (inward) position. To determine whether a foot deformity at birth is a result of intrauterine position or development, scratch the outer, then inner, side of the sole. If the foot position is self-correctable, it will assume a right angle to the leg. As the child begins to walk, the feet turn outward less than 30 degrees and inward less than 10 degrees.

Toddlers have a “toddling” or broad-based gait, which facilitates walking by lowering the center of gravity. As the child reaches preschool age, the legs are brought closer together. By school age, the walking posture is much more graceful and balanced.

The most common gait problem in young children is **pigeon toe**, or **toeing in**, which usually results from torsional deformities, such as internal tibial torsion (abnormal rotation or bowing of the tibia). Tests for tibial torsion include measuring the thigh-foot angle, which requires considerable practice for accuracy.

Elicit the **plantar** or **grasp reflex** by exerting firm but gentle pressure with the tip of the thumb against the lateral sole of the foot from the heel upward to the little toe and then across to the big toe. The normal response in children who are walking is flexion of the toes. **Babinski sign**, dorsiflexion of the big toe and fanning of the other toes, is normal during infancy but abnormal after about 1 year old or when locomotion begins.

Joints

Evaluate the joints for range of motion. Normally this requires no specific testing if you have observed the child's movements during the examination. However, routinely investigate the hips in infants for congenital dislocation by checking for subluxation of the hip. Report any evidence of joint immobility or hyperflexibility. Palpate the joints for heat, tenderness, and swelling. These signs, as well as redness over the joint, warrant further investigation.

Muscles

Note symmetry and quality of muscle development, tone, and strength. Observe development by looking at the shape and contour of the body in both a relaxed and a tensed state. Estimate tone by grasping the muscle and feeling its firmness when it is relaxed and