

flanks may be appreciated (see [Fig. 29-19, G](#)). A scoliometer is used in the initial screening to measure truncal rotation. Often a primary curve and a compensatory curve will place the head in alignment with the gluteal cleft. However, with an uncompensated curve, the head and hips are not aligned (see [Fig. 29-19, E and F](#)).

Definitive diagnosis is made by radiographs of the child in the standing position and use of the Cobb technique, a standard measurement of angle curvature. The Risser scale is used to evaluate skeletal maturity on the radiograph. This scale assists in making a determination of the likely progression of the spinal curvature based on growth potential. The sexual maturity rating is also used to evaluate the risk of curve progression in adolescents. Not all spinal curvatures are scoliosis. A curve of less than 10 degrees is considered a postural variation. Curves measured between 10 to 25 degrees are mild and, if nonprogressive, do not require treatment ([Hresko, 2013](#)).

Intraspinal conditions or other disease processes that can cause scoliosis must be ruled out. The presence of pain, sacral dimpling or hairy patches, cutaneous vascular changes, absent or abnormal reflexes, bowel or bladder incontinence, or a left thoracic curve may indicate an intraspinal abnormality, such as syringomyelia, diastematomyelia, or tethered cord syndrome. An MRI scan of the spine is usually obtained for evaluation.

Therapeutic Management

Current management options include observation with regular clinical and radiographic evaluation, orthotic intervention (bracing), and surgical spinal fusion. Treatment decisions are based on the magnitude, location, and type of curve; the age and skeletal maturity of the child or adolescent; and any underlying or contributing disease process.

Bracing and Exercise

For moderate curves (25 to 45 degrees) in the growing child and adolescent, bracing may be the treatment of choice. Historically bracing has not been shown to be curative; the goal is to slow the progression of the curvature to allow skeletal growth and maturity. The two most common types of bracing are the Boston and Wilmington braces, which are underarm orthoses customized from