development; *infantile* occurs at birth up to 3 years old; *juvenile* occurs in children ages 3 to 10 years old; and *adolescent* occurs at 10 years old or older.

Scoliosis can be caused by a number of conditions and may occur alone or in association with other diseases, particularly neuromuscular conditions (neuromuscular scoliosis). In most cases, however, there is no apparent cause, hence the name *idiopathic scoliosis.* There appears to be a genetic component to the etiology of idiopathic scoliosis; however, the exact relationship has yet to be established. The following section is limited to a discussion of adolescent idiopathic scoliosis.

Clinical Manifestations

Idiopathic scoliosis is most commonly identified during the pre-adolescent growth spurt. Parents frequently bring a child for follow-up on an abnormal school scoliosis screening or because of ill-fitting clothes, such as poorly fitting jeans. School screening is controversial because there are no controlled studies to demonstrated improved outcomes and a reported number of false-positive results lead to referrals. The American Academy of Orthopaedic Surgeons and the American Academy of Pediatrics published a joint statement favoring scoliosis screening for preadolescents and adolescents in the school, provider's office, or nurses' clinic (Richards and Vitale, 2008). According to the American Academy of Orthopaedic Surgeons (Richards and Vitale, 2008), girls should be screened at 10 and 12 years old, whereas boys should be screened once either at 13 or 14 years old. The benefits of early detection, referral, and medical treatment are considered to be significant, but the persons performing the screenings must be educated in the detection of spinal deformity.

Diagnostic Evaluation

Observation is performed behind a standing child wearing only shorts or undergarments. The child with scoliosis may exhibit asymmetry of shoulder height, scapular or flank shape, and hip height or pelvic obliquity. When the child bends forward at the waist so that the trunk is parallel with the floor and the arms hang free (the Adams forward bend test), asymmetry of the ribs and