

balance. **G**, Rib hump and flank asymmetry seen in flexion caused by rotary component. (Redrawn from Hilt NE, Schmitt EW: *Pediatric orthopedic nursing*, St Louis, 1975, Mosby.)

Postural (flexible) hyperkyphosis is almost always accompanied by a compensatory postural lordosis, an abnormally exaggerated concave lumbar curvature. Treatment of kyphosis consists of exercises to strengthen shoulder and abdominal muscles and bracing for more marked deformity. With adolescents who are significantly self-conscious about their appearance, the best approach is to emphasize the cosmetic value of corrective therapy and to place the responsibility on the adolescent for carrying out an exercise program at home with regular visits to and assessments by a physical therapist. Treatment with a brace may be indicated until skeletal maturity, and surgical fusion may be considered for severe, painful, or progressive thoracic curves, such as Scheuermann kyphosis.

Lordosis is the lateral inward curve of the cervical or lumbar curvature (see [Fig. 29-19, C](#)). Hyperlordosis may be a secondary complication of a disease process, a result of trauma, or idiopathic. Hyperlordosis is a normal observation in toddlers and, in older children, is often seen in association with flexion contractures of the hip, obesity, DDH, and SCFE. During the pubertal growth spurt, lordosis of varying degrees is observed in teenagers, especially girls. In obese children, the weight of the abdominal fat alters the center of gravity, causing a compensatory lordosis. Unlike kyphosis, severe lordosis is usually accompanied by pain.

Treatment involves management of the predisposing cause when possible, such as weight loss and correction of deformities. Postural exercises or support garments are helpful in relieving symptoms in some cases; however, these do not usually provide a permanent cure.

Idiopathic Scoliosis

Scoliosis is a complex spinal deformity in three planes, usually involving lateral curvature, spinal rotation causing rib asymmetry, and when in the thoracic spine, often thoracic hypokyphosis (see [Fig. 29-19, E to G](#)). It is the most common spinal deformity and is classified according to age of onset: *congenital* occurs in fetal