Scoliosis is an abnormal curvature of the spine. The majority of cases, particularly those occurring in adolescents, tend to have a genetic basis. However, certain neuromuscular disorders, such as muscular dystrophy, can cause scoliosis. Additionally, asymmetric spinal disc degeneration can cause the spine to curve, resulting in a form or scoliosis that primarily affects adults. Correcting scoliosis usually involves placing multiple screws or hooks along the length of the curve and using instrumentation to decrease the curvature. Bone grafts or bone graft substitutes may be added to fuse the vertebrae in the straighter, less curved spine configuration.
Introduction
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Incision & Instrumentation
A long incision is made in the middle of the back. Once the spine is exposed, surgical instruments are used to prepare for the instrumentation. Holes are made in the pedicle of multiple vertebrae on both sides of the spine. Screws are placed in the drilled holes and metal rods are positioned between the screws and fastened in place. The rods are then rotated in a fashion that straightens the spine. The rod and screw instrumentation prevents the vertebrae from moving while the bone graft fusion takes place.

Bone Graft
Bone grafting can be done with pieces of a patient’s own bone (autograft), processed bone from a bone bank (allograft), or a bone graft substitute (demineralized bone, ceramic extender, or bone morphogenetic protein). To harvest a patient’s own bone for grafting, a second incision is made over the back of the pelvis. Bone is removed from the iliac crest and placed along the prepared sites on the spine where the top layer of bone was removed for the fusion. The bone grafts eventually grow in place, fusing the spine and providing stability.
Summary
Surgical correction can reduce spinal curvature from scoliosis by over 50 percent. A brace is usually not necessary after surgery. If bone graft was removed from the pelvis, it is common to experience some pain from the site for a short period of time.