



Scoliosis, Surgical Treatment Clinical Coverage Criteria

Overview

Scoliosis affects 2-3 percent of the population, or an estimated six to nine million people in the United States. Scoliosis can develop in infancy or early childhood. However, the primary age of onset for scoliosis is 10-15 years old, occurring equally among both genders. Females are eight times more likely to progress to a curve magnitude that requires treatment. Every year, scoliosis patients make more than 600,000 visits to private physician offices. The vast majority of people with this condition do not require treatment; an estimated 30,000 children are fitted with a brace, while 38,000 patients undergo spinal fusion surgery (National Scoliosis Foundation).

Observation

In many children with scoliosis, the spinal curve is mild enough to not require treatment. However, if the doctor is worried that the curve may be increasing, he or she may wish to examine the child every four to six months throughout adolescence. In adults with scoliosis, X-rays are usually recommended once every five years, unless symptoms are getting progressively worse.

Bracing

Braces are only effective in patients who have not reached skeletal maturity. If the child is still growing and his or her curve is between 25 degrees and 40 degrees, a brace may be recommended to prevent the curve from progressing. There have been improvements in brace design and the newer models fit under the arm, not around the neck. There are several different types of braces available. While there is some disagreement among experts as to which type of brace is most effective, large studies indicate that braces, when used with full compliance, successfully stop curve progression in about 80 percent of children with scoliosis. For optimal effectiveness, the brace should be checked regularly to assure a proper fit and may need to be worn 16 to 23 hours every day until growth stops.

Physical Therapy

- Physiotherapeutic scoliosis-specific exercises are recommended as the first step to treat idiopathic scoliosis to prevent/limit progression of the deformity and bracing
- It is recommended that physiotherapeutic scoliosis-specific exercises follow SOSORT Consensus (Negrini et al., 2012) and are based on auto-correction in 3D, training in ADL, stabilizing the corrected posture, and patient education
- It is recommended that physiotherapeutic scoliosis-specific exercises follow one of the school that have shown the effectiveness of their approach with scientific studies (Negrini et al., 2012).

Surgery

In children, the two primary goals of surgery are to stop the curve from progressing during adulthood and to diminish spinal deformity. Most experts would recommend surgery only when the spinal curve is greater than 40 degrees and there are signs of progression. This surgery can be done using an anterior approach (through the front) or a posterior approach (through the back) depending on the particular case.

Some adults who were treated as children may need revision surgery, in particular if they were treated 20 to 30 years ago, before major advances in spinal surgery procedures were implemented. Back then, it was common to fuse a long segment of the spine. When many vertebral segments of the spine are fused together, the remaining mobile segments assume much more of the load and the stress associated with movements. Adjacent segment disease is the process in which degenerative changes occur over time in the mobile segments above and below the spinal fusion. This can result in painful arthritis of the discs, facet joints and ligaments. In general, surgery in adults may be recommended when the spinal curve is greater than 50 degrees and the patient has nerve damage to their legs and/or is experiencing bowel or bladder symptoms. Adults with degenerative scoliosis and spinal stenosis may require decompression surgery with spinal fusion and a surgical approach from both the front and back. A number of factors can lead to increased surgical-related risks in older adults with degenerative scoliosis. These factors include the following: advanced age, being a smoker, being overweight and the presence of other health/medical problems. In general, both surgery and recovery time are expected to be longer in older adults with scoliosis.

Posterior approach: The most frequently performed surgery for adolescent idiopathic scoliosis involves posterior spinal fusion with instrumentation and bone grafting. This is performed through the back while the patient lies on his or her stomach. During this surgery, the spine is straightened with rigid rods, followed by spinal fusion. Spinal fusion involves adding a bone graft to the curved area of the spine, which creates a solid union between two or more vertebrae. The metal rods attached to the spine ensure that the backbone remains straight while the spinal fusion takes effect. This procedure usually takes several hours in children, but will generally take longer in older adults. With recent advances in technology, most people with idiopathic scoliosis are released within a week of surgery and do not require post-surgical bracing. Most patients are able to return to school or work in two to four weeks' post-surgery and are able to resume all pre-surgical activities within four to six months.

Anterior approach: The patient lies on his or her side during the surgery. The surgeon makes incisions in the patient's side, deflates the lung and removes a rib in order to reach the spine. Video-assisted thoracoscopic (VAT) surgery offers enhanced visualization of the spine and is a less invasive surgery than an open procedure. The anterior spinal approach has several potential advantages: better deformity correction, quicker patient rehabilitation, improved spine mobilization and fusion of fewer segments. The potential disadvantages are that many patients require bracing for several months' post-surgery, and this approach has a higher risk of morbidity – although VAT has helped to reduce the latter.

Decompressive laminectomy: The laminae (roof) of the vertebrae are removed to create more space for the nerves. A spinal fusion with or without spinal instrumentation is often recommended when scoliosis and spinal stenosis are present. Various devices (like screws or rods) may be used to enhance fusion and support unstable areas of the spine.

Minimally invasive surgery (MIS): Fusion can sometimes be performed via smaller incisions through MIS. The use of advanced fluoroscopy (X-ray imaging during surgery) and endoscopy (camera technology) has improved the accuracy of incisions and hardware placement, minimizing tissue trauma while enabling a MIS approach. It is important to keep in mind that not all cases can be treated in this manner and a number of factors contribute to the surgical method used.

Policy

This Policy applies to the following Fallon Health products:

- Commercial
- Medicare Advantage
- MassHealth ACO
- NaviCare

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Prior authorization is required.

The benefits of surgery should always be weighed carefully against its risks. Although a large percentage of scoliosis patients benefit from surgery, there is no guarantee that surgery will stop curve progression and symptoms in every individual.

Fallon Health covers surgery for scoliosis when all of the following criteria are met:

- The member's spinal curve is greater than 40 degrees and there are signs of progression, AND
- The member has used bracing for 16 to 23 hours every day until growth stops, AND
- The member has tried physical therapy that follow the SOSORT Consensus

Exclusions

- Spinal unloading devices (e.g., LTX 3000, Orthotrac) are considered experimental and investigational for treatment of scoliosis because their effectiveness has not been established.

References

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Policy history

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