

Thoracolumbosacral orthosis

A thoracolumbosacral [spinal orthosis](#) (TLSO), is a two-piece plastic [brace](#) supporting the [spine](#) from the thoracic vertebrae of the chest, to the base of the spine at the sacrum. The rigid lumbar or TLSO (Thoraco – Lumbo – Sacral – Orthosis) is used, when regardless of surgical correction, or in some cases in place of surgical correction, spinal stability has not been fully achieved. In some cases of spinal fractures these can be managed without surgery using such a TLSO brace but this is only in the case where the type of fracture has its own inherent stability. The brace provides additional immobilization, which should safely allow condition or fracture to heal with a minimal risk of further injury. Under these circumstances, this brace must be worn for approximately several months whenever the patient is out of bed. In other cases the doctor or orthotist may prescribe such a brace to deal post-surgery immobilization, or for the longer term treatment of conditions of a more progressive nature, such as correction of scoliosis in the growing adolescent. These are described briefly below:

After having undergoing complex spinal surgeries, this is especially the fusion procedures, a brace will probably be necessary. There are a number of factors determining the need for brace wear include: - the severity of any instability, the lack of good bone quality, the location of the surgery, or the nature of the deformity. In these situations, a rigid brace may be needed. Once again, the brace is specifically for immobilization and support. It should be worn whenever the patient is out of bed for more than 10 minutes. This brace will be worn for approximately several months after surgery but your doctor or surgeon will let the patient know if such a brace is necessary.

Rigid braces are also used for the correction of scoliosis in the growing children and adolescents. These braces are very specific in nature and are used until the adolescent has finished growing (usually to about 16 years of age). Use of a brace does not always control the scoliosis curvature. Indeed, the curvature in very aggressive scoliosis can continue to progress despite [bracing](#). Typically in such circumstances, surgery to correct the scoliosis could eventually be necessary despite many years of bracing. However, the brace may replace the need for surgery and this is always preferred if possible.

The brace for scoliosis is a rigid plastic brace and must be worn a minimum of 18 out of 24 hours per day. Ongoing brace adjustments will needed and are necessary to maximize the scoliosis correction. If you are required to wear a brace to treat ongoing adolescent scoliosis, it will be necessary to visit the clinic or doctor or orthotist every few months. In a few circumstances, very restrictive braces that utilize thigh cuff extensions to control the pelvis are sometimes needed and this type of brace is worn to treat a very specific situation, such as a patient who has undergone pelvic fusion where the bone quality is at risk or questionable.

The brace comes in a variety of forms and can be used for treating severe or unstable compression fractures as well as other injuries and conditions.

Guidelines

2016

The utilization of orthotic devices for lumbar degenerative disease has been justified from both a prognostic and therapeutic perspective. As a prognostic tool, bracing is applied prior to surgery to

determine if immobilization of the spine leads to symptomatic relief and thus justify the performance of a fusion. Since bracing does not eliminate motion, the validity of this assumption is questionable. Only one low-level study has investigated the predictive value of bracing prior to surgery. No correlation between response to bracing and fusion outcome was observed; therefore a trial of preoperative bracing is not recommended. Based on low-level evidence, the use of bracing is not recommended for the prevention of low-back pain in a general working population, since the incidence of low-back pain and impact on productivity were not reduced. However, in laborers with a history of back pain, a positive impact on lost workdays was observed when bracing was applied. Bracing is recommended as an option for treatment of [subacute low back pain](#), as several higher-level studies have demonstrated an improvement in pain scores and function. The use of bracing following instrumented posterolateral fusion, however, is not recommended, since equivalent outcomes have been demonstrated with or without the application of a brace ¹⁾.

2005

Although conflicting [reports](#) have been presented in the [literature](#) regarding the utility of lumbar [braces](#) for the [prevention of low back pain](#), most [Level of evidence 3](#) suggests that these supports used prophylactically do not reduce the incidence of low-back pain or decrease the amount of time lost from work in the general working population. Among workers with a history of a back injury, their use appears to decrease the number of work days lost due to back pain. Lumbar braces appear to be an effective treatment for acute low-back pain in some populations. They do not appear to be effective in the chronic low-back pain population. If a brace is used, rigid braces offer some benefit over soft braces. There are no data to suggest that relief of low-back pain with preoperative external bracing predicts a favorable outcome following lumbar spinal fusion. No information is available on the benefit of bracing for improving fusion rates or clinical outcomes following instrumented lumbar fusion for degenerative disease ²⁾.

¹⁾

Dailey AT, Ghogawala Z, Choudhri TF, Watters WC 3rd, Resnick DK, Sharan A, Eck JC, Mummaneni PV, Wang JC, Groff MW, Dhall SS, Kaiser MG. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 14: brace therapy as an adjunct to or substitute for lumbar fusion. *J Neurosurg Spine*. 2014 Jul;21(1):91-101. doi: 10.3171/2014.4.SPINE14282. Review. PubMed PMID: 24980591.

²⁾

Resnick DK, Choudhri TF, Dailey AT, Groff MW, Khoo L, Matz PG, Mummaneni P, Watters WC 3rd, Wang J, Walters BC, Hadley MN; American Association of Neurological Surgeons/Congress of Neurological Surgeons. Guidelines for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 14: brace therapy as an adjunct to or substitute for lumbar fusion. *J Neurosurg Spine*. 2005 Jun;2(6):716-24. PubMed PMID: 16028742.

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