

Bracing

Based on the current literature, Giele et al., found no evidence for the effectiveness of bracing in patients with traumatic [thoracolumbar spine fractures](#), whether nonoperatively or operatively treated.

The studies we identified were all retrospective, and described patient series with thoracolumbar fractures treated with or without a brace. None of these studies fulfilled 50% or more of the internal validity criteria. Because of the incomplete methodological description of the studies, it was difficult to assess whether the methodological quality itself or only the description was insufficient. Indications for bracing were not explicitly described in most studies. Confounding by indication and selection bias seems very likely. Other possible co-interventions, such as the use of medication or physiotherapy, were not described. Although most studies included clinical outcome measures, the main focus was on radiographic outcome. In our opinion, exclusively radiographic evaluation does not seem adequate for assessment of the usefulness of bracing.

None of the studies selected compared bracing with non-bracing in patients with unstable thoracolumbar fractures. Several observational studies without a control group described patients with unstable fractures, nonoperatively or operatively treated with additional bracing. We did not find any studies reporting on unstable thoracolumbar fractures that were nonoperatively treated without a brace. In 6 of the 7 studies included, the incidence of complications of wearing braces was not mentioned. Other series of nonoperatively treated patients with brace have shown complications such as decubitus, but these reports contain a heterogeneity of patients also with neurological deficits.

In the studies and case series included, no serious complications such as neurological deficit were reported in patients who were treated without a brace.

There is a need for randomized controlled trials with sufficient sample size to allow detection of clinically relevant differences. It is important that the methodological quality of RCTs is well described, to avoid potential bias in selection, performance, exclusion, and detection.

It is obviously difficult to blind patients and care providers as to treatment. It is therefore important to achieve adequate concealment of treatment allocation. Apart from radiological and functional outcome, it is also relevant that patient-centered outcome should be measured, such as pain, anxiety, activity status, return to work, and quality of life. Complications, co-interventions, and [dropout rate](#) should be adequately reported. Although none of the studies included in our review mentioned this problem, many patients with thoracolumbar fractures have psychiatric and social problems.

Studies could be seriously hampered by this co-morbidity. Thus, compliance to treatment should also be recorded. Long-term follow-up and intention-to-treat analysis are strongly recommended. Inclusion of an economic evaluation in such trials would also be useful.

The value of bracing in patients with stable and unstable thoracolumbar fractures remains unclear. We recommend a careful and critical approach in the decision making, taking into consideration (on a case-to-case basis) patient benefits, burden, and cost of care ("weak recommendation" based on low- to very low-quality evidence according to the grading system of quality of evidence and strength of recommendations ¹⁾.

¹⁾

Giele BM, Wiertsema SH, Beelen A, van der Schaaf M, Lucas C, Been HD, Bramer JA. No evidence for the effectiveness of bracing in patients with thoracolumbar fractures. *Acta Orthop*. 2009 Apr;80(2):226-32. doi: 10.3109/17453670902875245. Review. PubMed PMID: 19404808; PubMed

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