

An update on orthotic devices for the lumbar spine based on a review of the literature

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Abstract

Orthoses are often used to treat lumbar spine disorders, although their indications have rarely been evaluated in clinical trials. We reviewed the literature for data on the effects of lumbar spine orthoses. Apart from bermuda corsets, restriction of intervertebral mobility seems limited at the most distal levels (L4-L5 and L5-S1). Restriction of extreme gross spinal motions can be achieved and is more marked for lateral bending than for forward bending or extension. Stiff corsets provide greater motion restriction than flexible corsets, although there are wide interindividual variations. Stiff orthoses are associated with decreased intradiscal pressure and increased intraabdominal pressure. Studies of the electrical activity of trunk muscles have produced conflicting data as a result of marked interindividual variability. In most studies, use of orthotic devices did not induce muscle wasting. Although lumbar spine orthoses are often prescribed with the goal of inducing analgesic, proprioceptive and preventive effects in the workplace, whether such effects are actually obtained, has not been adequately evaluated. Based on our literature review, we have drawn a list of the main indications for orthotic devices according to the desired effects in various disorders of the lumbar spine.