

Clinical News Spine – Improvement through Movement

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For certain types of back pain, the Dyneva back orthosis can be applied to reduce compression of the lumbar motion segments and facet joints, straightening them as a result. The initial results of studies presented at OT World 2016 indicate this not only enables patients to walk farther, it also means they experience less pain. As a result, they are able to participate more actively in everyday life.

Dr. Klaus J. Schnake of the Centre for Spine Therapy at the Schön Klinik in Nuremberg/Fürth explains that lumbar spinal stenosis and facet joint syndrome are typical signs of wear and tear in old age that can cause pain under load. The Dyneva is a back orthosis designed specifically for the conservative treatment of lumbar spinal stenosis and facet joint syndrome. Additional indications are lumbar radiculopathy, lumbar instability, lumbar spondyloarthritis, and intervertebral disc prolapse or protrusion in the lumbar spine. According to Dr. Schnake, conventional back orthoses are used to treat all kinds of back pain regardless of indication and these do little more than provide support.

Unlike conventional products, the Dyneva is a targeted, dynamic flexion orthosis based on the three-point principle with a special spring mechanism that acts under load. For example, when standing or walking (Fig. 2). Dr. Schnake explains that it triggers an impulse increasing tension in the abdominal muscles and relaxes the back muscles, providing relief to the lower spine. In addition, it is thought that over time, patients will instinctively adopt a different posture, leading to further relief.

Positive effects confirmed in biomechanical tests

These effects were confirmed in a biomechanical study with 14 participants in different load situations. For example, walking with and without additional loading or walking down slopes. According to the results presented by Prof. Dr. Gert Peter Brüggemann, of the Institute of Biomechanics and Orthopaedics at the German Sport University in Cologne, the orthosis has the potential to reduce the movement of the lumbar spine in the frontal and transverse planes.

In addition, activation of the lower back muscles, and presumably muscle strength, were reduced during movement. This reduces the compression force in the posterior lumbar spine and facet joints, says Prof. Brüggemann. The orthosis also reduces the frequency of muscle activation and, therefore, reduces muscle tone. This is particularly relevant to patients with back pain, explains Prof. Brüggemann, an expert in biomechanics. He concluded that the Dyneva contributed to effective relief of the lumbar spine.

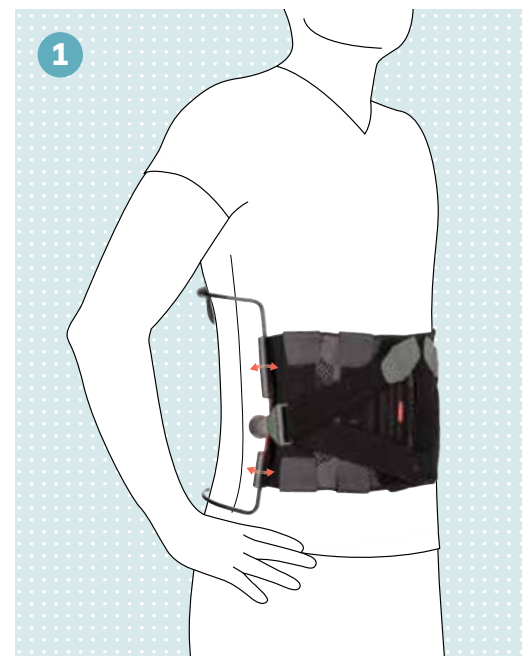


Fig. 1: Unlike conventional orthoses, the main focus of the Dyneva dynamic flexion orthosis is not to provide support, but to promote physical activity and maintain a normal lifestyle.

Improvement of clinical parameters

Clinical effectiveness was also demonstrated in an earlier study of two patients with lumbar spinal stenosis and four patients with lumbar radiculopathy. Dr. Schnake reported that after the orthosis was worn for an average of 37 days, about half the patients improved the finger-to-floor-distance when attempting to touch the floor while standing, and increased the pain-free walking distance. Pain was also greatly reduced. Dr. Schnake stated a prospective, randomized study comparing patients with the orthosis to patients without orthosis was currently being conducted to confirm its effectiveness.

The right patient for the orthosis

Dr. Schnake added the orthosis is easy to put on and remove, unobtrusive to wear, easy to handle, available in different sizes, and features an open construction minimizing perspiration. However, he emphasized that patient selection is paramount. The target group includes individuals who are pain-free when sitting, but experience pain when walking. Dr. Schnake also noted that the Dyneva could be helpful in the treatment of shooting pain brought on by certain movements, as well as pain experienced as a result of standing or walking for long periods of time. Prof. Brüggemann added that while the orthosis is not a substitute for back exercises, it could help the patient bear loads using less muscle strength than before.

Source:
Exhibitor workshop "Conservative approaches for treating back pain", 5/5/2016, OT World, Leipzig

