

Dyneva

Clinical Effects

Major Findings

With Dyneva:

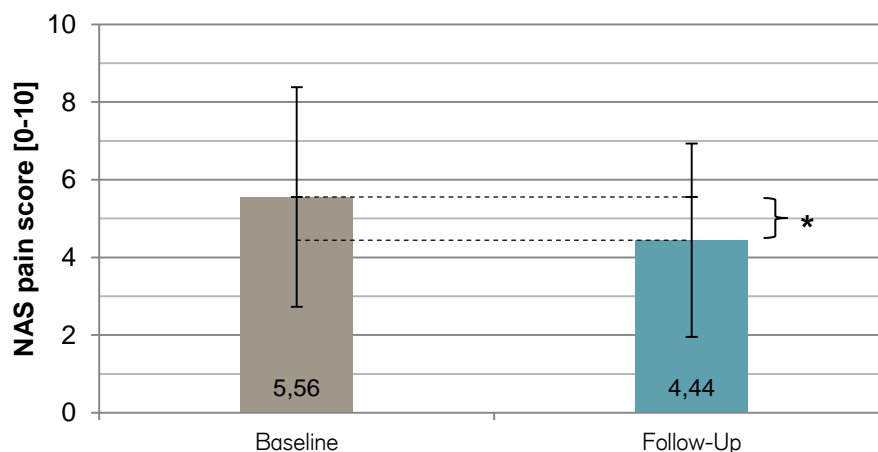
Pain level on NAS (0-10)

→ Significant pain reduction of 21%

Pain-free walking distance

→ Significant improvement of 700 meters (88%)

Pain reduction with Dyneva after 4 week use



NAS pain score: 0= no pain at all, ..., 10= extreme pain. * $p < 0.01$ (Lang et al., 2017)

Clinical Relevance

Back pain is one of the most common conditions in industrialized countries (Brömme et al., 2015, Slade et al., 2014). In Germany alone, between 80% - 85% of the population develop at least once in their life complaints in the back (Brömme et al 2015). In one tenth of the affected patients, the pain manifests itself as chronic. The financial burden to the health care system by treatment costs and loss of productivity are substantial and amounted to approximately 6% of all medical costs in Germany in 2008 (DESTATIS 2010). In the period from 2006 to 2014, the number of inpatient treatments for lumbar back pain increased by about 50% (Bitzer et al., 2015). The proportion of early retirement due to back pain of 18% is an important factor in an aging society (Werber et al., 2014).

Summary

Lumbar orthoses are often utilized to restrict lumbar motion as part of a treatment regimen for a wide range of degenerative or musculoskeletal conditions in an attempt to provide mechanical support, and to enhance patient comfort. Aside from limiting the range of motion of the spine, lumbar orthoses may also unload the spinal column indirectly by increasing intra-abdominal pressure and acting as an external splint. (Jegede et al. 2011)

Lang et al. (2017) could show that Dyneva was effective in reducing the pain situation of the patients to a significant amount and to prolong the pain-free walking distance from 800 to 1500 meters.

References of summarized studies

Lang, M., Schnake, J., Rembitzki, I.V., Lidolt, K., Vollbrecht, M., Wagner, K., Liebau, C. (2017). Effect of a Dynamic Lumbar Flexion Orthosis on Back Pain and Pain-free Walking Distance – Results of a Prospective Clinical Observational Study. Der Einfluss einer dynamischen Lumbalflexionsorthese auf Rückenschmerz und schmerzfreie Gehstrecke. *OT: Orthopädie Technik* 01: 32-35.

Other References

Bitzer, E. M., Lehmann, B., Bohm, S., Priess, H.-W. (2015). BARMER GEK Report Krankenhaus 2015. Schwerpunkt: Lumbale Rückenschmerzen. Asgard-Verlagsservice GmbH.

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Brömme, J., Mohokum, M., Disch, A. C., Marnitz, U. (2015). Interdisziplinäre, multimodale Schmerztherapie vs. konventionelle Therapie. *Der Schmerz*, 29(2), 195-202. DOI: 10.1007/s00482-014-1508-1

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Jegede, K. A., Miller, C. P., Bible, J. E., Whang, P. G., Grauer, J. N. (2011). The effects of three different types of orthoses on the range of motion of the lumbar spine during 15 activities of daily living. *Spine*, 36(26): 2346-2353.

Slade, S. C., Patel, S., Underwood, M., Keating, J. L. (2014). What are patient beliefs and perceptions about exercise for nonspecific chronic low back pain?: a systematic review of qualitative studies. *The Clinical journal of pain*, 30(11), 995-1005.

Werber, A., Schiltenswolf, M. (2014). Kampf dem chronischen Rückenschmerz. Leitliniengerechte Diagnostik und Therapie. *CME*, 11(2):53-64.

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