

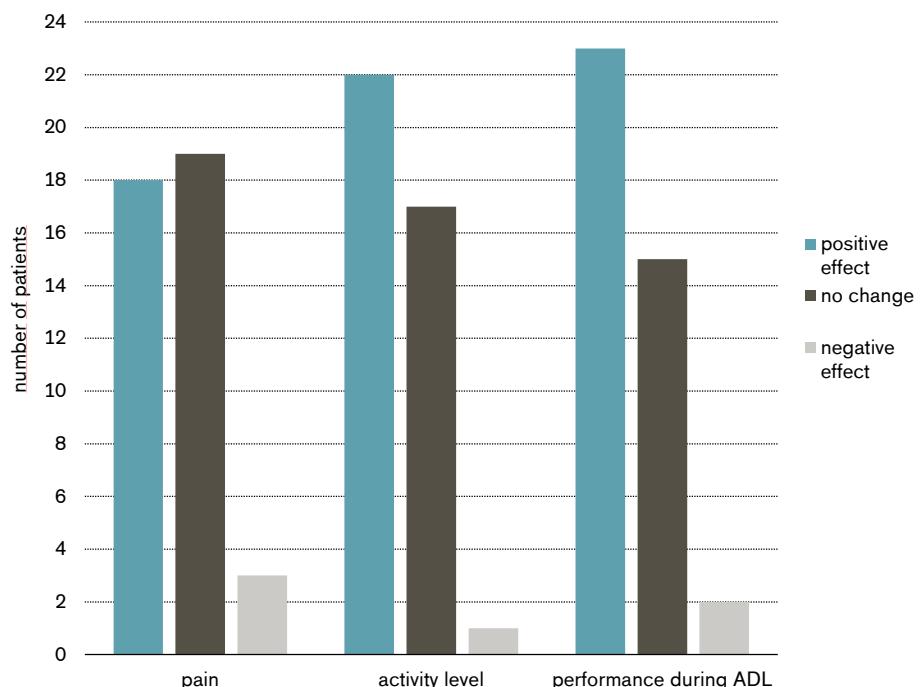
Omo Neurexa

Major Findings

With Omo Neurexa:

- **Repositioning of the humeral head could be reported.** (Hesse et al. 2013)
- **Improved activity level and performance in mobility related activities of daily living.** (Hesse et al. 2013)
- **Shoulder pain could be reduced in 45% to 86% of patients.** (Hesse et al. 2008, Hesse et al. 2009, Hesse et al. 2013)
- **Patients reported a good wearing comfort.** (Hesse et al. 2008, Hesse et al. 2009, Hesse et al. 2013)

Omo Neurexa improved the ability of the patient to participate in daily activities



Clinical Relevance

"Stroke is the most frequent cause of permanent impairment in the industrialized world (Hesse et al. 2009)." In Germany approximately 180 persons per 100,000 suffer from stroke annually (Kolominsky-Rabas et al. 2006). A painful shoulder was reported in about 15-40% of patients in New Zealand in the subacute phase (Ratnasabapathy et al. 2003).

An ischaemic stroke may lead to a hemiparesis which causes a subluxation of the shoulder. In the later phases of rehabilitation a shoulder-hand syndrome may develop which is characterized by pain, oedema and a restricted flexibility of shoulder and hand (Hesse et al. 2008).

The Omo Neurexa aims to reposition the subluxated shoulder joint in the right position and thus reducing pain and improving gait.

Summary

Three studies evaluated the effectiveness of the Omo Neurexa:

A repositioning of the humeral head was reported in 83.3% of patients (Hesse et al. 2013). A closing of the subluxation gap was also observed in 60% of patients within the study of Hesse et al. (2008). Within the remaining 40% of patients included in this study a reduction of the subluxation gap was observed. Hesse et al. (2009) reported a mean reduction in joint space of 2.5cm.

Furthermore 45-86% of patients reported a reduction of shoulder pain due to wearing the Omo Neurexa (Hesse et al. 2008, Hesse et al. 2009, Hesse et al. 2013).

Another aspect that could be observed when walking with the Omo Neurexa was a more symmetric and dynamic gait pattern (Hesse et al. 2009, Hesse et al. 2013) and an improvement in activity level and performance during mobility related activities of daily living (Hesse et al. 2013).

Within all referenced studies patients reported a good wearing comfort of the orthoses (Hesse et al. 2008, Hesse et al. 2009, Hesse et al. 2013).

References of summarized studies

- Hartwig, M., Gelbrich, G., Griewing, B. (2012). Functional orthosis in shoulder joint subluxation after ischaemic brain stroke to avoid post-hemiplegic shoulder-hand syndrome: a randomized clinical trial. *Clinical Rehabilitation*, 26 (9): 807-816.
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- Hesse, S., Bardeleben, A., Rembitzki, I., Werner, C. (2009). Klinische und ganganalytische Befunde zur Schulterorthese OmoNeurexa. *Orthopädie-Technik*, 3: 177-181.
- Hesse, S., Herrmann, C., Bardeleben, A., Holzgraefe, M., Werner, C., Wingen-dorf, I., Kirker, S. (2013). A new orthosis for subluxed, flaccid shoulder after stroke facilitates gait symmetry: A preliminary study. *Journal of Rehabilitation Medicine*, 45 (7): 623-629.

Other References

- Kolominsky-Rabas, P. L., Heuschmann, P. U., Marschall, D., Emmert, M., Baltzer, N., Neundörfer, B., Schöffski, O., Krobot, K. J. (2006). Lifetime cost of ischaemic stroke in Germany: results and national projections from a population-based stroke registry: the Erlangen Stroke Project. *Stroke*, 37:1179-1183.
- Ratnabapahy Y., Broad, J., Baskett, J., Pledger, M., Marshall, J., Bonita, R.(2003). Shoulder pain in people with a stroke: a population-based study. *Clin Rehabil*, 17(3): 304-311.