Genu Arthro

Functional tests

**Major Findings**

With Genu Arthro (Fantini Pagani et al., 2010)

→ **Stair climbing is faster**
   - 19.5% faster (4° valgus), 18.7% faster (neutral)

→ **No significant changes during 6 minute walk test.**

With Genu Arthro (GA) compared to MOS Genu (MOS) and wearing no orthosis: (Kutzner et al., 2011)

→ **Stair ascent:**
   - **GA (0°, 8° valgus):** Fmed: 2-9% lower
   - **MOS (0°, 8° valgus):** Fmed: -2% higher - 26% lower

→ **Stair descent:**
   - **GA (0°, 8° valgus):** Fmed: 5-7% lower
     Fz: 3-7% lower
   - **MOS (0°, 8° valgus):** Fmed: 2-24% lower
     Fz: 6-16% lower

**Clinical Relevance**

Osteoarthritis (OA) is the most common joint disease, associated with pain and loss of mobility. Besides surgical treatments, several conservative methods, such as lateral shoe wedges and valgus bracing (such as Genu Arthro) are common to reduce the axial tibial force and/or to shift it laterally. Reduced loading of the affected compartment is related to pain reduction and improved function and may thus delay the need for joint replacement. (Kutzner et al., 2011)

Stair-climbing and walk tests are tasks widely used to evaluate functional capacities and quality of life. (Harada et al., 1999; Kirkley et al., 1999)

**Summary**

Compared to wearing no orthosis, stair climbing is 19.5% (4° valgus) and 18.7% faster (neutral) with Genu Arthro. (Fantini Pagani et al., 2010)
Kutzner et al. (2011) analysed the medial and vertical force (Fmed and Fz) during stair ascent as well as descent with 2 orthoses. 7 of 8 results for Fmed showed decreases while ascending stairs. Genu Arthro improved by 2-9%. The highest reduction was reported for MOS Genu (8° valgus). In descending stairs, decreases were reported for Fmed and Fz. GA showed slight reductions in Fmed (5-7%) and Fz (3-7%). Greater improvements were achieved by MOS with increases between 2-24% (Fmed) and 6-16% (Fz). Discomfort was reported when walking with the MOS brace in 8° valgus. Since the chosen valgus settings of 8° with the MOS brace would probably not have been tolerated for a long duration by the subjects, medial load reductions of more than 25% cannot be expected permanently.

During a 6 minute walk test, no significant changes were reported (Fantini Pagani et al., 2010).

References of summarized studies


Other References
