

CLINICAL STUDY,

Biomechanical and Sensory Effects of Crystal Insoles®

Foot Inserts on the Foot and Ankle Complex During Daily Activities

for the following company: A369 d.o.o., Savska cesta 34, SI-4000 Kranj, EU

Study duration: From October 1, 2025 through May 31, 2026

Study conducted and supervised by: Tanja Kuralt, MD,

Specialist in Physical and Rehabilitation Medicine

Age of patients (men/women): From 33 to 89 years (average age: 58.57 years)

We had 4 types/models of CRYSTAL INSOLES foot inserts available:

CRYSTAL INSOLES Support (renamed Business), Active, Balance and Heel Lift (heel support).

For each pair of the foot insert model that the test subjects received, they filled out the FADI questionnaire immediately at the beginning and again after an average of 2 months of use (or more precisely after 50 days, on average).

In the research, a scale was used to assess the ankle and foot, respectively

Foot and Ankle Disability Index (FADI), which was used to assess the foot and ankle function.

The Foot and Ankle Disability Index was designed to assess functional limitations associated with foot and ankle conditions.

The FADI contains 26 questions that assess pain and functional activities (walking, stairs, daily tasks).

Each question is scored and evaluated in the following way:

- 0 = unable / very severe difficulty
- 1 = major difficulty
- 2 = moderate difficulty
- 3 = minor difficulty
- 4 = no difficulty

The maximum possible score is 104 points.

We converted the result into a percentage – the 104-point mark equates to a 100% baseline, indicating optimal performance with zero functional impairment (no problems). Here are the phases:

Score 80 – 99%; mild problems

Score 60 – 79%; moderate problems

Score below 60%; severe functional limitations.

We selected subjects presenting with chronic foot and ankle pain that caused functional mobility limitations. The majority exhibited pes planus (flat feet), frequently accompanied by toe deformities or a history of lower extremity trauma. These podiatric complaints were often concurrent with pain in the spine, hips, and knees. Additionally, the cohort included patients with systemic conditions such as fibromyalgia and plantar fasciitis.

CLINICAL OBSERVATIONS

Despite the short testing period (50 days per individual on average for the entire group and all types/models of CRYSTAL INSOLES),
clinically meaningful improvements were observed across the cohort in high percentage:
83,37%

The patient test group that used the CRYSTAL INSOLES Support (Business) model

The average score **improved** from the "severe functional limitations" phase to the "moderate problems" phase.

The patient test group that used the CRYSTAL INSOLES Active model

The average score **improved** from the "moderate problems" phase to the "mild problems" phase.

The patient test group that used the CRYSTAL INSOLES Balance model

The average score **improved** from the "severe functional limitations" phase to the "moderate problems" phase.

The patient test group that used the CRYSTAL INSOLES Heel Lift model (heel support)

Despite noticeable improvement, the progression threshold for the next phase was not met, so the average score of the "severe functional limitations" phase **remained** in the "severe functional limitations" phase.

ASSESSMENT: Although clinical improvement within the treatment group for this particular model was measurable, concurrent plantar fasciitis in all subjects indicates that a 7-week average intervention (testing period) is insufficient and more time would be required for maximal clinical resolution.

Statements from some test subjects:

- The electric feeling in my little toe is gone, and the insoles feel comfortable now.
- My feet hurt on the first day, but now the insoles suit me perfectly.
- These insoles are a must-have for me. They cushion each step and give me the extra support I need, significantly easing the pain from my old injury (broken big toe).
- My feet hurt less when I walk.
- The insoles have helped reduce my work pain.
- I have less pain and cramps in my feet and toes.
- Longer walks are pain-free now, except for a rare, mild burning sensation.
- Walking on flat surfaces is easier now and my feet also sweat less.
- These inserts really helped; walking is much easier now that the pain has subsided.
- I don't feel pain during exercise anymore, just a little when walking downhill.
- I'm very pleased with the inserts and wear them regularly.
- Walking is now easier and more comfortable.

CONCLUSION:

The clinical study indicated that all models of the Crystal Insoles foot inserts provided a positive biomechanical impact on the overall health and function of the foot and ankle during daily tasks.
Progress was measured in high percentage of the test subjects in an average time of 50 days per individual. Result: 83,37%.

Personal health outcomes of this study are inherently variable, heavily influenced by an individual's age, physiological predispositions, history of trauma, and co-occurring pathologies.

Based on the Foot and Ankle Disability Index (FADI) questionnaire, the majority of participants demonstrated a 30% to 100% improvement in well-being relative to baseline metrics. Consistent, daily use of these insoles suggests sustained, long-term benefits extending beyond the foot and ankle complex. Regular wear may positively impact the knees, hips, pelvis, spine, and overall posture, though specific outcomes and the time to achieve them may vary depending on the product model used.

Ljubljana, Slovenia (EU), June 15, 2026

Tanja Kuralt, MD, Specialist in Physical and Rehabilitation Medicine

