Formthotics™
Foot Science

Can Foot Orthoses Reduce Fall Risk?

A Global Clinical Perspective

Global Prevalence: A Shared Clinical Challenge

A comprehensive meta-analysis published in 2022 revealed that among nearly 37 million older adults, the global prevalence of falls was 26.5% per year.

- Oceania recorded the highest fall rate at 34.4%
- North America followed at 27.9%
- Europe showed a prevalence of 23.4%

While the statistics vary, the clinical implications are consistent across regions: a significant proportion of the elderly population is at risk of falling annually, and many of these falls are preventable.

While many clinicians have limited ability to affect sensory decline or pharmacological regimens, interventions targeting pain, gait, and balance fall squarely within podiatric scope.

Identifying the Modifiable Factors

Falls result from a complex interplay of intrinsic and extrinsic factors.

Some of the most common contributors include:

- Musculoskeletal pain (especially in feet or knees)
- Osteoarthritis
- Balance and proprioceptive deficits
- Medication side effects
- Reduced visual and auditory acuity
- Loss of strength or muscle mass
- Inadequate dietary protein intake

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Clinical Tools for Fall Risk Assessment

Effective prevention begins with accurate identification. Two accessible, validated tools can be used during routine appointments:

- TUG Test (Timed Up and Go): A simple mobility screen where patients are timed standing from a chair, walking 3 metres, turning, and returning. Times over 10 seconds indicate elevated fall risk.
- Falls Efficacy Scale (FES-I): A questionnaire assessing a patient's fear of falling during daily and complex tasks (e.g., meal prep, stairs, uneven ground). Higher scores reflect increased fall risk due to fear – even in the absence of overt physical impairment.

Clinicians can also incorporate the CDC's STEADI protocol (Stopping Elderly Accidents, Death & Injury) to structure a broader fall-prevention approach.

Biomechanical Pathways to Prevention: The Role of Orthoses

Pain Reduction Is Prevention

Pain is more than a symptom – it's an independent risk factor for falling. Gait adaptations driven by foot or knee pain can destabilise balance and decrease mobility confidence.

In the Framingham Foot Study, foot pain was reported by 19% of men and 25% of women, and was significantly associated with mobility limitations and increased fall risk.

Foot orthoses, including Formthotics, may reduce pain by:

- Cushioning fat pad atrophy
- Redistributing pressure away from plantar prominences
- Improving knee alignment in osteoarthritic patients via wedging techniques

Enhancing Balance Through Proprioception

Balance depends on accurate somatosensory input – especially from the feet. Customised orthoses can help enhance plantar feedback, stabilising posture and supporting gait, particularly in individuals with mild balance deficits.

A 2024 review concluded that footwear and orthoses can improve balance and postural stability in older adults, particularly when designed to optimise proprioceptive input.

Optimising Functional Gait

Foot orthoses can restore more efficient gait patterns by stabilising joint alignment and correcting load distribution. This improves predictability of movement, reduces compensatory strategies, and enhances mobility confidence – all crucial for fall risk reduction.

Clinical Evidence:
Formthotics in a Fall Prevention Trial

A pivotal randomised controlled trial by Spink et al. (2011) evaluated a multifaceted podiatry intervention in older adults with disabling foot pain. The intervention group received:

- Foot orthoses (Formthotics®)
- Footwear education
- Strength and balance exercises
- Falls prevention information

Compared to routine podiatric care alone (nail and callus debridement), the intervention group experienced a 36% reduction in falls over 12 months – a substantial and clinically meaningful result.

This trial remains one of the strongest real-world demonstrations of how targeted podiatric intervention can positively impact fall outcomes.

In Practice:
Key Clinical Takeaways

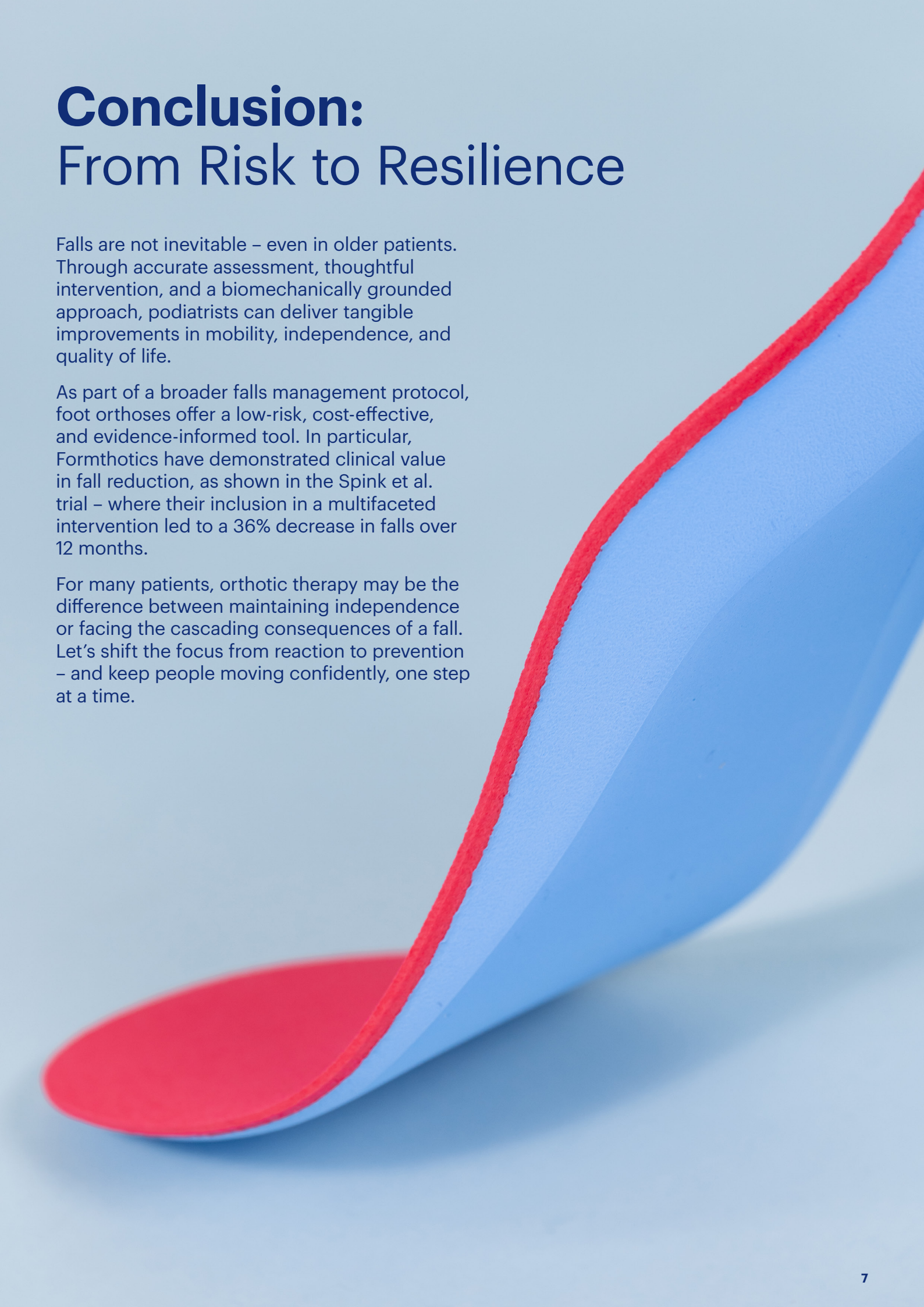
- Screen all patients 65+ using tools like TUG or FES-I
- Treat foot pain proactively – it's not just a comfort issue, but a safety one
- Use orthoses to influence pain, proprioception, and gait mechanics
- Customise the orthotic strategy based on the patient's foot structure, footwear, and overall balance profile
- Collaborate with other providers to address multifactorial fall risk where needed

Conclusion: From Risk to Resilience

Falls are not inevitable – even in older patients. Through accurate assessment, thoughtful intervention, and a biomechanically grounded approach, podiatrists can deliver tangible improvements in mobility, independence, and quality of life.

As part of a broader falls management protocol, foot orthoses offer a low-risk, cost-effective, and evidence-informed tool. In particular, Formthotics have demonstrated clinical value in fall reduction, as shown in the Spink et al. trial – where their inclusion in a multifaceted intervention led to a 36% decrease in falls over 12 months.

For many patients, orthotic therapy may be the difference between maintaining independence or facing the cascading consequences of a fall. Let's shift the focus from reaction to prevention – and keep people moving confidently, one step at a time.



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26 Dakota Crescent, Wigram,
Christchurch, 8042, New Zealand

www.formthotics.com