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Editorial

The flatfoot dilemma: Why less is more in managing asymptomatic flat feet in children

Roberto Tedeschi, PT-DPM., MSc.[1]

[1]Department of Biomedical and Neuromotor Sciences, Alma Mater Studiorum, University of Bologna, Bologna, Italy.

***Corresponding author:**
Roberto Tedeschi, PT-DPM.,
Department of Biomedical and Neuromotor Sciences (DIBINEM),
Alma Mater Studiorum, University of Bologna, Bologna, Italy.

roberto.tedeschi2@unibo.it

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Flatfoot, or pes planus, is a prevalent condition characterized by the collapse or reduction of the medial arch of the foot. This condition, particularly in children, often prompts concern among parents and healthcare providers due to misconceptions about its potential impact on overall health and posture. Despite these concerns, contemporary evidence strongly supports a conservative approach to managing asymptomatic flatfoot, emphasizing the importance of appropriate footwear and physical activity over orthotic interventions or surgical procedures. Historically, flatfoot has been a source of anxiety for many families. Parents often attribute various postural and musculoskeletal problems to flatfoot, fearing long-term consequences such as chronic pain, gait abnormalities, and diminished physical performance. These beliefs can lead to a demand for early and aggressive treatments, including orthotic devices or even surgery, despite a lack of symptoms. However, numerous studies have demonstrated that these fears are largely unfounded when it comes to asymptomatic flatfoot. Flexible flatfoot, the most common type seen in children, typically resolves naturally without the need for intervention. As children grow, the arch of the foot often develops spontaneously.

Flexible flatfoot is a condition where the medial arch collapses during weight-bearing but reforms when non-weight-bearing. Symptomatic flatfoot refers to cases where the individual experiences pain or discomfort, often due to associated conditions such as tendinitis or deformity. Rigid flatfoot, on the other hand, describes a condition where the arch is absent even when the foot is non-weight-bearing, typically due to congenital deformities or underlying structural abnormalities. These distinctions are critical for appropriate diagnosis and management, and each variant may require different treatment approaches.

This editorial is about asymptomatic flexible flatfoot in children.[1] Research, including systematic reviews and meta-analyses, has consistently shown that orthotics, such as custom-made arch supports, do not significantly alter the natural progression of arch development in asymptomatic children. These devices do not reduce pain, improve function, or prevent future complications in the absence of symptoms.[2-5]

Proper footwear and physical activity play critical roles in the conservative management of flatfoot. Shoes that provide adequate support and flexibility are essential,[6] allowing the foot to develop naturally while offering the necessary protection during various activities. Encouraging children to engage in regular physical activities, such as running, jumping, and playing, helps

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strengthen the foot's intrinsic muscles and improves overall foot health. This approach supports the natural developmental process and aids in forming the medial arch, reducing the likelihood of future issues.[4] However, it is important to note that adherence to structured exercise programs can be challenging. Children and adolescents are more likely to participate consistently in physical activities that are enjoyable and varied, such as sports and recreational play, rather than in regimented exercise routines. This underscores the importance of integrating physical activity into daily routines in a fun and engaging manner. Unfortunately, the current trends indicate a decline in physical activity among children and adolescents, exacerbated by increased screen time and sedentary behaviors.[3] The prevalence of flatfoot varies widely based on age and population studied. Studies have reported that flatfoot affects approximately 14–24% of children, with a higher prevalence in younger age groups. For instance, Biz *et al*., found a prevalence of flatfoot of 44% in children aged 3–6 years, which decreased significantly with age.[1] In adults, the prevalence is lower but still significant, with estimates ranging from 10% to 20%, depending on the criteria used for diagnosis.[1] Contrasting views exist, with some practitioners advocating for early orthotic intervention, especially in cases with a familial predisposition to flatfoot-related problems. These advocates argue that orthotics can provide structural support and potentially mitigate future complications. While the conservative approach is strongly advocated for asymptomatic flexible flatfoot, it is important to acknowledge that some clinicians prefer orthotic or surgical interventions. Proponents of orthotic treatment argue that structural support might prevent long-term complications, especially in cases with familial predisposition or severe deformity. Similarly, surgical interventions are sometimes warranted in cases of rigid or symptomatic flatfoot that does not respond to conservative measures, where procedures like osteotomies or arthrodesis can offer lasting relief.[7] However, this perspective is often based on anecdotal evidence rather than robust scientific data. Comprehensive studies have not demonstrated significant long-term benefits of orthotic use in asymptomatic individuals.[2]

Surgical intervention for flatfoot, while less common, is sometimes considered in severe symptomatic cases that do not respond to conservative measures. Procedures such as osteotomies, tendon transfers, and arthrodesis can effectively correct deformities and alleviate pain. However, surgery carries inherent risks, including infection, nerve damage, recurrence, and prolonged recovery. Moreover, the necessity and timing of surgery for flatfoot remain contentious, with many experts advocating for conservative management whenever possible.[1] An often-overlooked aspect in the management of flatfoot is the suboptimal consideration of this condition in the rehabilitation field. Many rehabilitation protocols focus primarily on symptomatic treatment rather than establishing a comprehensive pathway that addresses underlying biomechanical issues. This approach can result in patients receiving inconsistent advice and performing either incorrect or ineffective exercises.

Rehabilitation professionals need to be better informed about the natural history of flatfoot and the most effective conservative management strategies, ensuring that interventions are evidence-based and aligned with best practice guidelines.[1] Given the current evidence, the best approach for managing asymptomatic flatfoot in children is conservative. This includes monitoring the condition, providing reassurance about its benign nature, and emphasizing the importance of supportive footwear and regular physical activity. Regular follow-ups are essential to ensure that any emerging symptoms are promptly addressed and managed appropriately. Misconceptions surrounding flatfoot and its potential impact can lead to unnecessary treatments and increased anxiety among parents.[8]

It is crucial for healthcare providers to educate families about the benign nature of asymptomatic flatfoot and the importance of a conservative management approach. Reassuring parents and emphasizing the role of proper footwear and physical activity can help alleviate concerns and prevent unnecessary interventions. Managing flatfoot, particularly in children, requires a balanced approach that prioritizes natural development and overall health. When recommending a conservative approach, it is essential to provide specific guidelines on the types of physical activities and footwear that are most beneficial. Activities such as running, jumping, and playing, which engage the intrinsic muscles of the foot, should be encouraged. Footwear should offer both flexibility and adequate arch support to promote natural foot development while reducing stress on the medial arch. In cases where flatfoot is asymptomatic, such recommendations are sufficient for maintaining foot health without the need for orthotic intervention.[7] Orthotic devices and surgical interventions should be reserved for symptomatic cases or those that do not respond to conservative measures.

Educating parents and encouraging physical activity are essential components of this approach, ensuring that children with flatfoot can lead active and healthy lives without unnecessary medical interventions. While the evidence strongly favors a conservative approach for managing asymptomatic flatfoot, including proper footwear and physical activity, it is important to recognize that individualized treatment should be based on the specific characteristics of each case. For symptomatic or rigid flatfoot, alternative interventions such as orthotics or surgery may be appropriate.[9] A more detailed, case-by-case discussion is necessary to guide treatment, ensuring that the best outcomes are achieved based on the patient's needs.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY FOR MANUSCRIPT PREPARATION

The author(s) confirms that there was no use of Artificial Intelligence (AI)-Assisted Technology for assisting in the writing or editing of the manuscript, and no images were manipulated using the AI.

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REFERENCES

1. Biz C, Cerchiaro M, Mori F, Rossin A, Ponticiello M, Crimì A, *et al*. Flatfoot over the centuries: The background of current conservative and operative treatments. Int Orthop 2023;47:2357-68.
2. Alvi F, Wilson N. Evidence-based treatment of flexible flat foot in children. In: Alshryda S, Huntley JS, Banaszkiewicz PA, editors. Paediatric orthopaedics: An evidence-based approach to clinical questions. Cham: Springer International Publishing; 2017. p. 171-4.
3. Molina-García C, Reinoso-Cobo A, Cortés-Martín J, Lopezosa-Reca E, Marchena-Rodriguez A, Banwell G, *et al*. Efficacy of personalized foot orthoses in children with flexible flat foot: Protocol for a randomized controlled trial. J Pers Med 2023;13:1269.
4. Oerlemans LN, Peeters CM, Munnik-Hagewoud R, Nijholt IM, Witlox A, Verheyen CCPM. Foot orthoses for flexible flatfeet in children and adults: A systematic review and meta-analysis of patient-reported outcomes. BMC Musculoskelet Disord 2023;24:16.
5. Tedeschi R. Reevaluating root: Challenges and limitations in modern biomechanical practice. J Musculoskelet Surg Res 2025;9:162-4.
6. Tedeschi R. Orthotic insoles versus footwear design: Reassessing approaches in the management of foot pain. Minerva Orthop 2024;75:260-1.
7. Tong JW, Kong PW. Medial longitudinal arch development of children aged 7 to 9 years: Longitudinal investigation. Phys Ther 2016;96:1216-24.
8. Tedeschi R. Improving physician-patient communication in rehabilitation: Is the patient's understanding truly verified? J Musculoskelet Surg Res 2024;8:430-2.
9. Manuri V, Moscadini S, Salmeri L, Miceli A, Camarda L, Lucenti L. Surgical treatment of flexible flatfoot in adolescents: Sinotarsic endorthesis. J Musculoskelet Surg Res. 2025;9:85-92.