

**Authors:**

Mdm. Maharita Ab Rahman (main-author)  
Dr. Izzuna Mudla Mohamed Ghazali

**External Reviewer:**

Dr. Asnida bt. Anjang Ab Rahman  
*Public Health Physician*  
Head of Clinical & Technical Support  
Sector  
Primary Care Section  
Family Health Development Division

**Disclaimer:**

This technology review (mini-HTA) is prepared to assist health care decision-makers and health care professionals in making well-informed decisions related to the use of health technology in health care system, which draws on restricted review from analysis of best pertinent literature available at the time of development. This technology review has been subjected to an external review process. While effort has been made to do so, this document may not fully reflect all scientific research available. Other relevant scientific findings may have been reported since the completion of this technology review. MaHTAS is not responsible for any errors, injury, loss or damage arising or relating to the use (or misuse) of any information, statement or content of this document or any of the source materials.

For further information, please contact:

Malaysian Health Technology Assessment  
Section (MaHTAS)  
Medical Development Division  
Ministry of Health Malaysia  
Level 4, Block E1, Precinct 1  
Government Office Complex  
62590 Putrajaya.

htamalaysia@moh.gov.my  
Tel: 603 8883 1229

Available at the following website:  
<http://www.moh.gov.my>

2024

**Background**

Podoscope is a device design for static examination of the feet. Detailed analysis of the footprint obtained from podoscope will detect any abnormalities in the foot structure in order to provide the personalised and effective treatment. There are various types of podoscope machine available in the market including classic podoscope, photo podoscope, portable podoscope as well as digital podoscope.

Basically, podoscope able to identify pressure problem and determine the points of support and various characteristics or malformations of the foot that can lead to multiple conditions such as defect in posture as well as pain. The podoscope also capable to visualise information on disorders such as flat feet at all degrees and examining the distribution of the bearing surfaces and analysing the arch of a patient (high arches, excessive pronation, early detection of bunions (Hallux Valgus), hammertoes etc).

Currently, most of Ministry of Health facilities used a manual ink-mat method to assess and diagnose foot abnormalities either among adults or children. From the footprint image, the physiotherapist will manually measure the required information for further analysis. This method has limitation in that, it is time consuming and quite a sloppy process. The need to use innovative and more precise method in the assessment and management of foot deformity in the Malaysian population need to be addressed. Hence, it is timely that the review is requested by the National Head of Physiotherapy to address the need in providing more precise and efficient management of this condition in the country.

**Objective**

To assess the efficacy/effectiveness, safety and cost-effectiveness of podoscope in footprint analysis

**Methods**

Literature search was conducted by an *Information Specialist* who searched for published articles on podoscope for footprint analysis. The following electronic databases were searched through the Ovid interface: Ovid MEDLINE® In-Process & Other Non-Indexed Citations and Ovid MEDLINE® 1946 to 31 July 2024. Parallel searches were run in PubMed, US FDA and INAHTA database as well as CADTH. Some limitations applied during search (animal study). Additional articles were identified from reviewing the references of retrieved articles. The last search was performed on 31 July 2024.

**Results and conclusion:**

Podoscope showed comparable accuracy and excellent reliability with ink footprint methods and clinical assessment in determining foot deformity either in adult or paediatric patients; accuracy ranging from 90.5% to 96.50% and correlation ranging from  $\geq 0.75$  to  $> 0.9$ , respectively. One study compared podoscope with radiograph in screening flatfoot among paediatric patients, the sensitivity for radiological parameter was 95.2% with an overall accuracy of 82% while podoscope was 85.7% and 67%, respectively. One SR among paediatric patients with Down's Syndrome found that there were very good values of the intra-class correlation coefficient (ICC) ranged from 0.984 to 0.995 of the included parameters index. Besides, the study also reported very good ICC values which were equal to or greater than 0.988 for all podiatric parameter indices.



The included studies also reported several advantages toward podoscope over ink-footprint. Podoscope provide high quality plantar surface image with high resolution images, foot's outer border was sharper and clearer than ink-mat method, and the measurement were using standard and valid software which able to minimise error during manual measurement. Podoscope also speed-up the whole foot-print analysis with improved data and image storing systems. There was no retrievable evidence specifically discussed on safety, organisational issues and cost-effectiveness of podoscope. The price of digital podoscope is varies depending on the specification of the device.

Thus, based on the review, podoscope showed good performance with strong correlation with ink-footprint manual measurement as well as clinical diagnosis by the experience assessors. However, when compared with radiograph, radiograph was more sensitive for flat foot than the podoscope. Overall, the podoscope will speed up the whole process of footprint analysis process with improved data and image storing systems. There were no issues on safety and no cost-effectiveness study retrieved on podoscope for foot deformity screening.