

[CASE STUDY]**Effect of Matrix Rhythm Therapy on Alleviating Pain, Improving mobility and Enhancing functionality in Plantar Fasciitis- A Case Study****Gendle Ishvari¹, Gohil Divya², Katkar Krishna³, Gite Sakshi⁴**^{1,3,4}MPT, ² Associate Professor, Dr. D. Y. Patil College of Physiotherapy, Pune.**ABSTRACT**

Background: Plantar Fasciitis is a common cause of heel pain, often leading to impaired mobility and daily function. Conservative treatments vary in effectiveness, and newer modalities like Matrix Rhythm Therapy (MRT) are being explored.

Methodology: This case report evaluates the effects of MRT on a 62-year-old female with chronic medial heel pain for two years. She underwent four MRT sessions targeting the calf and plantar foot, each lasting 45–60 minutes. Outcomes were assessed using the Numerical Pain Rating Scale (NPRS), goniometric measurements for mobility, and the Foot Function Index (FFI).

Results: Post-treatment assessments showed significant improvement: reduced pain on the NPRS, increased range of motion, and improved FFI scores, indicating better foot function and decreased discomfort.

Conclusion: Matrix Rhythm Therapy is an effective intervention for Reducing Pain and Improving Mobility and Functional outcomes in individuals with chronic Plantar Fasciitis.

Key words: *Matrix Rhythm Therapy, Plantar Fasciitis, Physiotherapy.*

Introduction:

Plantar Fasciitis is one of the most common causes of heel pain, often characterized by discomfort during the first steps in the morning or after prolonged periods of rest. It frequently affects individuals who engage in repetitive impact activities—such as runners and military personnel as well as those with more sedentary lifestyles. The condition is particularly prevalent among women aged 40 to 60 years.^[1]

Several risk factors have been associated with plantar fasciitis, including reduced ankle dorsiflexion, obesity, and occupational demands involving prolonged standing or walking. Among these, limited ankle dorsiflexion has been identified as the most significant contributor.^[2] Diagnosis is typically clinical, relying on the patient's history and a focused physical examination. The windlass test, in particular, is considered useful in confirming the

diagnosis.^[2,3]

Treatment strategies for plantar fasciitis are wide-ranging. Conservative approaches remain the first line of management and these include modalities such as physiotherapy manual therapy, electrostimulation, ultrasound, kinesiotherapy and extracorporeal shock wave therapy.^[4] While these interventions can provide symptom relief, their long-term efficacy varies.^[5]

Matrix Rhythm Therapy is an emerging treatment modality that delivers mechanical oscillations in the frequency range of 8 to 12 Hz.^[1] The therapy aims to restore normal cellular function and tissue rhythm through a targeted vibro-massage technique. It has shown promise in managing conditions such as frozen shoulder, chronic lower back pain, and circulatory disorders.^[6] However, there is a noticeable gap in the literature regarding its effectiveness for plantar fasciitis.

*Corresponding author

Gendle Ishvari

Email : ishugendle16@gmail.com

Dr. D. Y. Patil College of Physiotherapy, Pune.

Copyright 2025, VIMS Journal of Physical Therapy. This is an Open Access article which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Given this context, the present study aims to evaluate the impact of a 4-session intervention of Matrix Rhythm Therapy on pain reduction and functional improvement in individuals with plantar fasciitis.

Methodology:

This case study took place at the Dr. D.Y. Patil Physiotherapy OPD clinic and focused on a 62-year-old female housewife who experienced sharp pain on the inner side of her right heel. She described the pain as particularly severe during her first steps in the morning, a symptom typically linked to plantar fasciitis. This discomfort had lasted for several months and was affecting her daily life. After obtaining informed consent, a thorough assessment was carried out. Pain intensity was assessed using the Numerical Pain Rating Scale (NPRS). The Windlass test yielded a positive result, and we noted limited dorsiflexion in her right foot compared to the left. Based on the evaluations, we concluded with a diagnosis of plantar fasciitis. A rehabilitation program incorporating Matrix Rhythm Therapy was proposed to the patient to alleviate pain, improve mobility, and Enhance functionality. The patient participated in a structured intervention protocol comprising four sessions, each lasting 45 minutes, conducted over a two-week period. The treatment

sessions integrated Matrix Rhythm Therapy with specific stretching and strengthening exercises targeting the intrinsic muscles of the foot. MRT was administered within a frequency range of 8 to 12 Hz, with the intensity tailored according to the patient's comfort level. For each session, the patient was positioned prone on a treatment table, with a rolled towel placed beneath the right foot to ensure stability. The MRT device was applied in a controlled manner, with the treatment head systematically glided over the plantar aspect of the right heel for 30 minutes, followed by an additional 15 minutes directed to the calf musculature.

In addition to MRT, the exercise protocol was designed to include specific stretching and strengthening elements targeting the primary muscles involved in plantar fasciitis. Stretching of the plantar fascia was performed through seated dorsiflexion of the toes with manual assistance, held for 30 seconds and repeated three times. Strengthening including towel toe curls (3 sets of 10 repetitions) and bilateral heel raises with a controlled pace (3 sets of 10). This combined strategy aimed to improve foot function and enhance neuromuscular control.

Fig1: Timeline of the events

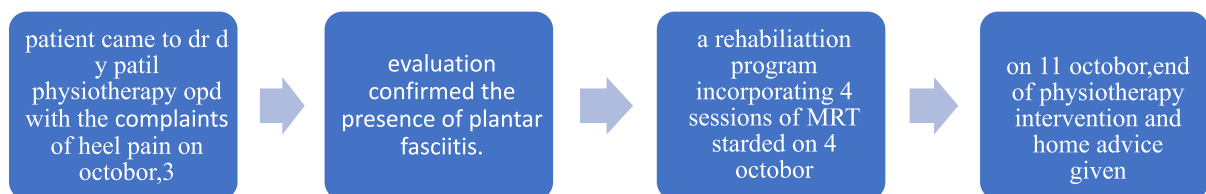


Fig 2 : Matrix Rhythm Therapy



Fig 3: Heel Raises

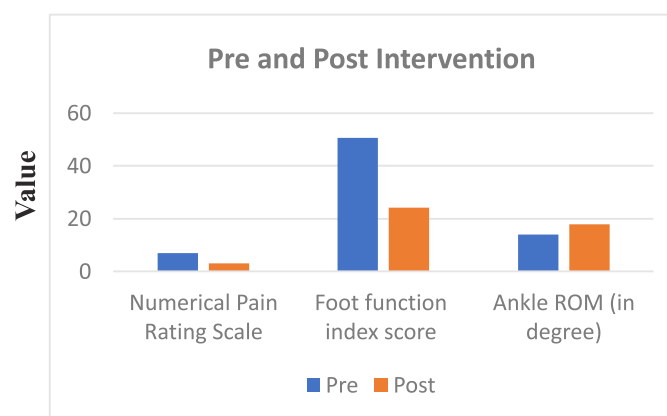
**Fig 4:** Towel Curls.**Fig 5:** Plantar fascia stretch.**Results:**

After completing four sessions of Matrix Rhythm Therapy, the patient showed notable progress. The Numerical Pain Rating Scale (NPRS) indicated a decrease in pain, with the patient reporting a drop in pain levels from 7/10 during activities to 3/10, and from 3/10 at rest to 1/10. Goniometer measurements revealed a significant increase in dorsiflexion on the affected side, showing improved range of motion from the initial assessment. Additionally, the Foot Function Index (FFI) score reflected better functionality, demonstrating that the patient could carry out daily activities with reduced pain and discomfort.

Pre-treatment assessments were conducted on the first day of treatment, and post-treatment assessments were performed after the four sessions of physiotherapy.

Table no 1: Pre and Post Intervention.

Outcome measures	Numerical Pain Rating Scale	Foot function index score	Ankle range of motion (in degree)
Pre-intervention	7/10	50.58%	14 degree
Post-intervention	3/10	24.11%	18 degree

**Graph no 1:** Pre and Post Intervention.

Discussion:

Plantar fasciitis is one of the most common causes of heel pain, particularly with the first steps in the morning or after prolonged periods of rest. The condition can severely impair daily activities, resulting in decreased quality of life.^[1] While conservative treatments such as stretching, orthotics, and physiotherapy can offer relief, they are not always effective for long-term pain management.^[5] This case report presents the results of an experimental study investigating the effects of Matrix Rhythm Therapy in the treatment of plantar fasciitis in a 62-year-old female patient. The patient had been suffering from medial heel pain for two years, with particular discomfort upon rising in the morning. After four sessions of MRT, significant improvements were observed in terms of pain reduction, mobility enhancement, and increased functionality. Matrix Rhythm Therapy utilizes vibrations within a specific frequency range (8-12 Hz) to stimulate cellular activity, aiming to restore disrupted natural frequencies within tissues and improve muscle tone and flexibility.^[6] Although MRT has shown promise in treating a variety of musculoskeletal conditions, its application to plantar fasciitis remains under-researched. The findings of this study suggest that MRT may offer a viable alternative or adjunct to conventional treatments for this condition.

The pre- and post-intervention outcomes measured by the Numerical Pain Rating Scale revealed a substantial reduction in the patient's pain levels following MRT. The patient's mobility, assessed using a goniometer, also showed significant improvement. Furthermore, the Foot Function Index score, which assesses a patient's ability to perform everyday activities, also improved post-treatment, indicating an increase in functional capacity. While the results from this single case are promising, it is important to note the limitations of this study. The sample size is limited to one individual, and further research with larger sample sizes and control groups is necessary to validate these findings. In conclusion, the results of this case report suggest that Matrix Rhythm Therapy may be an effective intervention for alleviating pain, improving mobility, and enhancing function in patients with plantar fasciitis.

Conclusion:

This case report indicates that Matrix Rhythm Therapy may serve as an effective treatment for alleviating pain, increasing range of motion, and improving functionality in individuals with plantar fasciitis. In this case four sessions of MRT resulted in notable enhancements in pain relief, mobility, and overall function.

Acknowledgment:

I would like to thank all the participants for their support, cooperation, and thoughtful contributions throughout this research.

Conflict of Interest: No conflict of interest.

Funding: No funding.

References:

1. Naik V, Singh M. Effects of Matrix Rhythm Therapy (MaRhyThe) in Plantar Fasciitis – An Experimental Study. *Indian J Phys Ther Res* [Internet]. 2019;1(2).
2. Tseng WC, Chen YC, Lee TM, Chen WS. Plantar Fasciitis: An Updated Review. *J Med Ultrasound*. 2023;31(4):268–74.
3. Goldstein LB. Plantar Fasciitis: Diagnosis and Management. *EC Orthopaedics*. 2018;9:154-65.
4. Leão RG, Azuma MM, Ambrosio GHC, Faloppa F, Takimoto ES, Tamaoki MJS. Effectiveness of shockwave therapy in the treatment of plantar fasciitis. *Acta Ortopédica Bras*. 2020 Feb;28(1):7–11.
5. Poenaru D, Badoiu S, Ionescu A. Therapeutic considerations for patients with chronic plantar fasciitis (Review). *Med Int*. 2021 Jul 15;1(4):9.
6. Tiwatane S, Tejani N, Saini S, Sangoankar M, Palekar T. Effect of Matrix Rhythm Therapy in Individuals with Musculoskeletal Pain. *J Datta Meghe Inst Med Sci Univ*. 2024 Apr;19(2):242–6.