

Review Article

## Easy ways to offload diabetic foot ulcer in rural setup

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**Abstract**

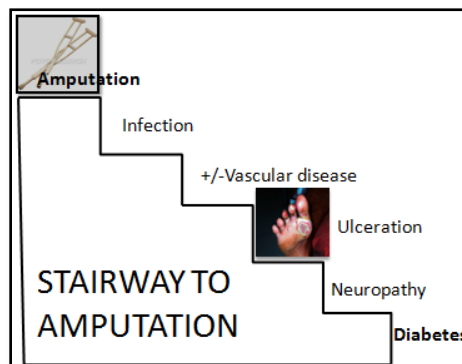
Diabetic wound management has become a foremost problem in recent era. Offloading is one of the cornerstones of gold-standard treatment in diabetic neuropathic foot ulcer. The following article reviews the easily made offloading systems which are ideal to use in rural setup to offload diabetic foot ulcer.

**Keywords:** Offloading; Diabetic foot ulcer; Mandakini offloading device; Samadhan offloading system

### 1. Introduction

India has the largest number of people with diabetes in the world. Today Indian Diabetic population is about 61.3 millions<sup>1</sup> that means total 122 million foot is at risk of getting diabetic foot ulcer (DFU). Every 3 sec a new case of diabetes is diagnosed and every 30 sec a lower limb is amputated somewhere due to diabetes.<sup>2</sup> It is said that, "Coming events cast their shadows before" (Figure 1).

Figure 1: Stairway to Amputation



We all know that the leading cause of ulceration in the diabetic population is increased plantar foot pressure. These ulcers are commonly present over the 1<sup>st</sup> MCP joint, Ball of a great toe, 5<sup>th</sup> MCP joint and heel (Figure 2).

Figure 2: Foot Ulcer



These ulcers will heal only if there is adequate blood supply, control of infection, excellent wound care and 'offloading' or pressure redistribution of the ulcerative area. We always use to give proper wound care. In due course these ulcers heal and patient gets discharged but the patients again lands up in outpatient department after some time with ulcer on the same area or different area on the foot.

We forget that eighty percent of diabetic foots are neuropathic in India. This leads to loss of sensation in foot and off-loading is the major solution for healing of plantar lesions. Application of antimicrobial solutions or ointments is not the answer to heal these ulcers. All therapeutic efforts are bound to fail if patient continues to walk on an ulcer.

Over the past many years foot surgeons have used numerous approaches including complete bed rest, cutout felt pads, crutches, wheelchairs, zimmer frame, temporary shoes, ortho wedge shoes like rocker-bottom wedge design shoes and total contact casting to offload this ulcers.<sup>3</sup>

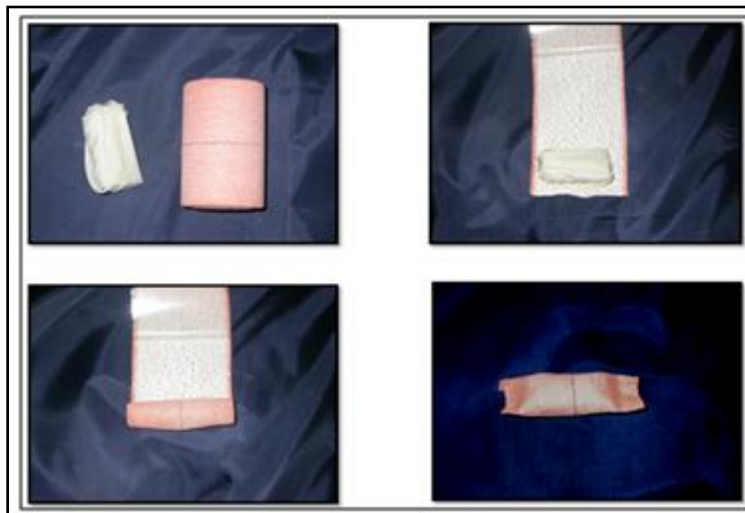
**Table 1: Disadvantages of above and other offloading devices in rural setup:**

Offloading devices	Not Affordable	Not Available	Need Special Training	Other Reasons
Bed rest	✓	-	-	✓
Crutches	-	-	-	✓
Wheel chair	✓	-	-	✓
Half shoes	✓	✓	-	-
TCC	✓	✓	✓	-
Air cast	✓	✓	✓	-
CFW	✓	✓	-	-

**2. Mandakini offloading device**

In this system the hospital wastes such as used gloves, can help us to off-load the body weight at ulcer site.<sup>4</sup> (Figure 3)

**Figure 3: Mandakini offloading device**



**3. Samadhan offloading system:**

In this system material like foam is used which is available even in the remotest corners of the world to offload diabetic foot ulcer.<sup>5</sup> (Figure 4)

**Figure 4: Samadhan offloading system**

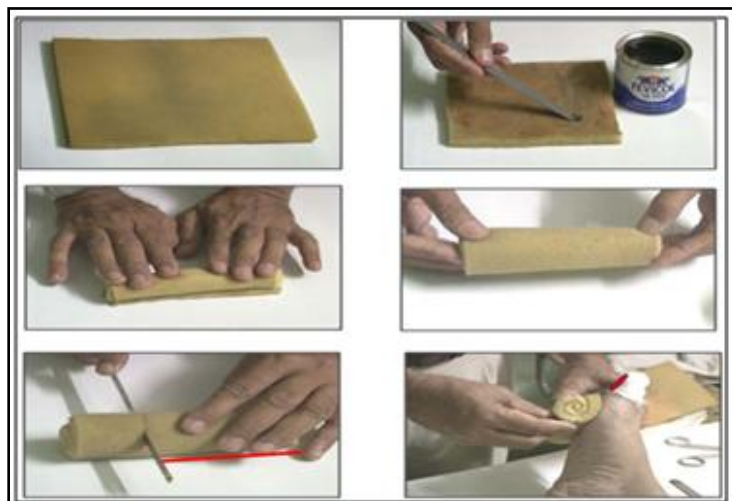


Figure 5: shows location of offloading system according to the site of ulcer and the patient with offloading system.



#### 4. Summary

Both systems are ideal to offload rural diabetic foot ulcers as they are patient compliant, easy to apply, cost effective, does not require special training, effective in healing the wound, ambulation with device is comfortable, can be accommodated in diabetic foot wear with ease, can be practiced at all levels of rural healthcare system like PHC, PHSC, by paramedical staff.

#### 5. Conclusion

To conclude, it is rightly said that it is only with simple things we can reach and serve the masses. Both the devices are being used regularly at our and many other centers since their acceptance and there are no complaints from patients. They are easy, economical and effective in healing the rural diabetic foot ulcers.

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