



*Lecture as part of a series by Parafricta*

## **Clinical Manifestations of Friction and Shear Related Skin Breakdown**

### **Resolution of Oedema and Inflammation Measured by Ultrasound on Heels Treated with Low Friction Fabric Bootees**

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#### Background:

Friction can cause devastating, painful tissue damage. All avenues at our disposal should be considered to prevent these injuries.

Our clinical goal for our patients is to achieve:

- Comfort
- skin integrity
- prevention of harm to tissues

EPUAP and NPUAP guidelines recommend that we consider the potential impact of contributory factors like friction in pressure injuries.

Know your patient! Conditions that might increase risk of friction related damage include:

- Neurological disorders (Parkinson's/tremors)
- Brain injuries – increased agitation
- Dementia – repetitive movements
- Spinal injured – issues transferring

We also cannot ignore the mobile patient. That patient who is able to push themselves up in bed is at great risk for friction and related shear injury because nobody is checking! Check their skin regularly (sacral area, elbows, heels).



## Our tools:

1. *careful repositioning*
2. *ensuring good positioning*
3. *employ the use of specialist equipment like low friction materials*

### 1. Careful repositioning:

- Raise the knee break first before we raise the head (so the patient doesn't slide, creating friction)
- Use slide sheets to aid repositioning – make sure they're the right size so the whole body is protected

### 2. Ensuring good positioning:

- Make sure the patient feels STABLE – get the positioning right
- Ensure the patient is comfortable before we walk away
- Check back on the patients regularly!

### 3. Employ the use of specialist equipment:

- Use specialized beds, slide sheets, dressings, undergarments and booties made of low friction materials
- Parafricta material is designed to reduce friction and shear stress associated with patient movement. It has a low friction co-efficient at .2 (other textiles have a range of .3-.7)

## Investigation:

We wanted to see if Parafricta's low friction booties (<http://www.parafricta.com/parafricta-bootee-slip-on>) could be used to prevent and treat friction-related damage to the heels.

We selected patients who had issues (oedema, redness) with both of their heels so we could use them as their own control group. We gave them the low friction bootie on their right foot and kept the left foot exposed. We employed the use of high frequency ultrasound scanning so we could see the epidermis, the dermis and the sub-dermal tissues.



## Results:

The left heel (control) did not improve, continuing to exhibit redness and subdermal oedema as seen by ultrasound.

The right heel (bootee) improved, with vastly reduced subdermal oedema, until at 4 weeks it closely resembled the ultrasound pattern of a normal heel.

## Takeaways:

Oedema and redness can be reversed by low friction fabric bootees.

Bootees leave tissues less vulnerable to effects of shearing, reducing risk of progression to open ulceration.

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