

# Using a Hydroconductive Dressing to Improve Healing in Complex Surgical Wounds

**Sue Johnson:** Lead Nurse Wound Care, Doncaster and Bassetlaw Hospitals NHS Foundation Trust, Doncaster UK. **Pam Spruce:** Clinical Director TVRE Consulting, Stoke-on-Trent UK.

**Kathleen Leak:** Wound Care Sister, Doncaster UK. **Denise Ridsdale:** Nurse Practitioner, Doncaster UK.

## Aim

An evaluation of a hydroconductive\* dressing was undertaken on 4 patients with complex abdominal surgical wounds, which had been closed by secondary intention using Negative Pressure Wound Therapy. They all had unhealed wounds that had been present for up to 2 years, which was a considerable burden to the healthcare system. 2 of the patients presented with similar wounds where the tissue in the wound bed appeared unhealthy, and the wound margins were not clear because of the condition of the surrounding tissues.

Because of the length of time which the wounds had been present, a range of different wound care products had been used, resulting in skin sensitivities in some patients.

The aim of the evaluation was to observe if this dressing would encourage healing without increasing the risk of damage to the peri-wound skin.

## Method

The dressing was applied according to the manufacturers instructions, and wound progression was documented at each dressing change, supported by wound photography and technology to provide accurate measurements and tissue analysis. It was secured with a clear film dressing, with the frequency of change undertaken according to the spread of exudate observed on the dressing.

The progress of each patient was monitored using an advanced wound management software technology\*\* to provide measurements and tissue analysis from the digital images taken as part of the evaluation process.

## Results

In all four patients there was a noticeable improvement in the wound bed. Initially the wounds increased in size, but there was an increase in healthy granulation tissue observed in the wound bed, which was quantified using the software technology. (See patients 1 and 2)

The peri-wound skin also improved and the wound margins were clear and healthy showing signs of epithelial tissue.

All patients found the dressing comfortable

No sensitivities were observed.

### Patient 1

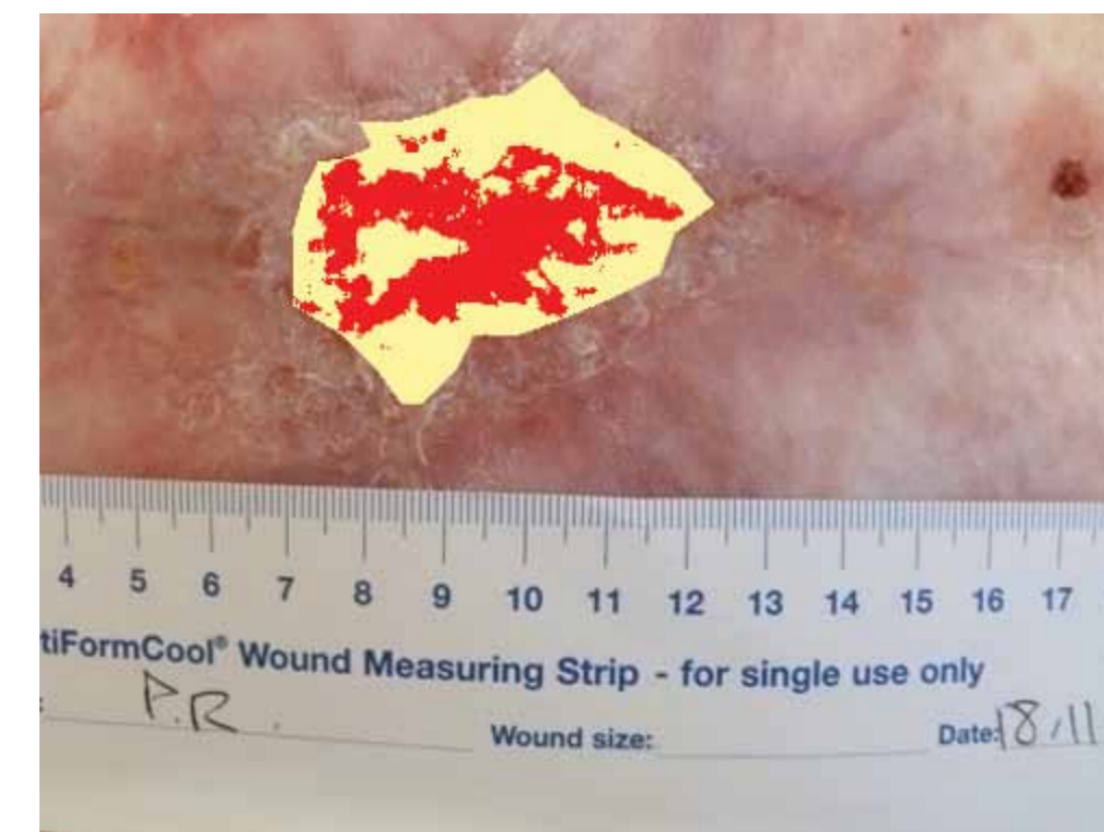
Patient 1 was a 72 year old male, whose wound had been present for 128 weeks following abdominal surgery, after which the wound had dehisced, resulting in a non-healing status. The patient had no other medical conditions which would adversely affect the healing process.

On assessment the patient had no pain in the wound, which had a moderate level of exudate. The condition of the surrounding skin was recorded as "fragile".

The evaluation dressing was applied and by day 14 there was a 44% increase in granulation tissue in the wound bed. The peri-wound tissue was now recorded as "healthy"



Day 0



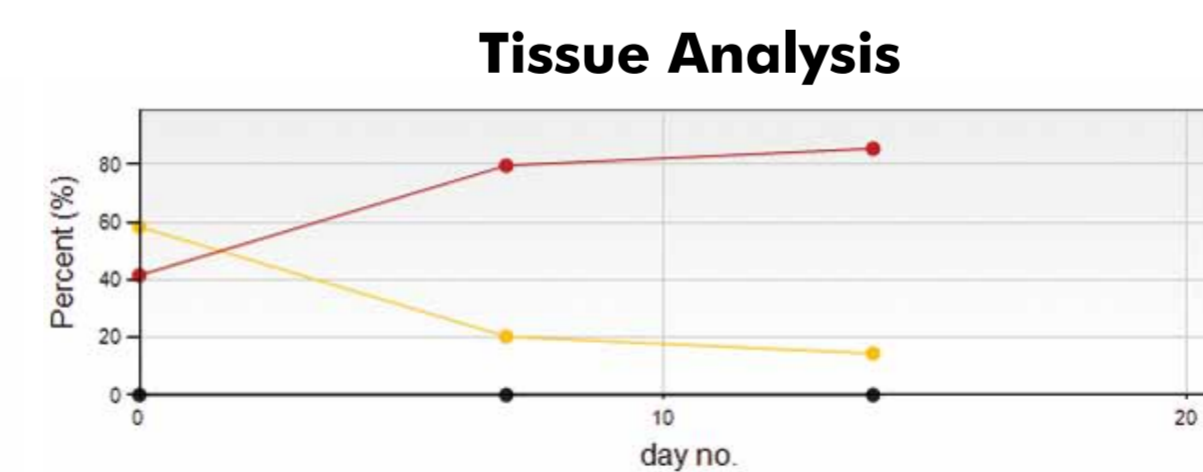
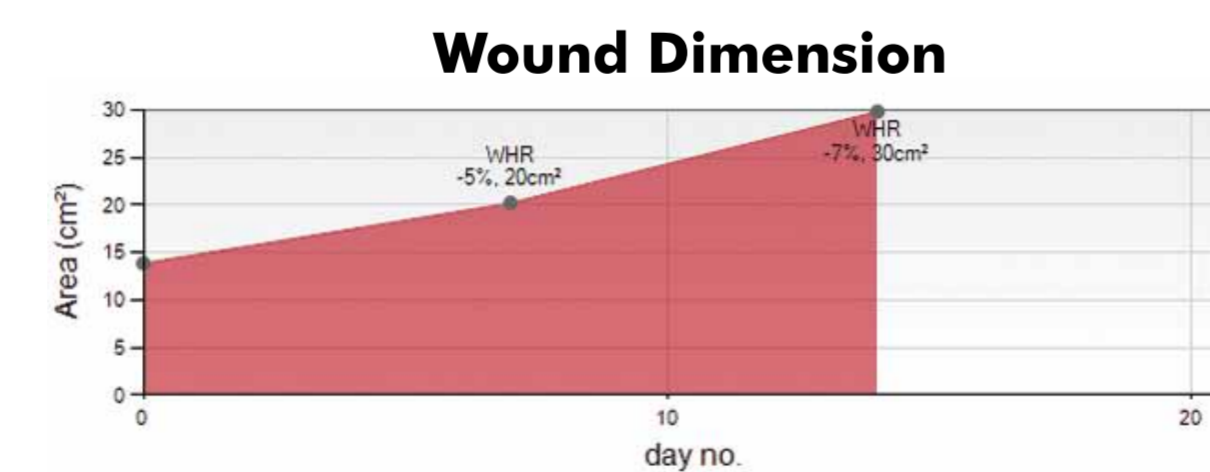
Day 0 Analysis



Day 14



Day 14 Analysis



### Patient 2

Patient 2 was a 61 year old male who had abdominal surgery 23 weeks prior to the evaluation after which his wound failed to heal. He had previously been healthy and had no comorbidities which may influence the wound progression.

The patient was taking analgesia regularly, so at assessment was pain free. There was a moderate level of exudate from the wound. The surrounding skin was healthy, although the wound margins were not clearly defined because of the presence of unhealthy tissue.

The evaluation dressing was applied and by day 7 the healthy granulation tissue in the wound bed had increased by 30.8%, progressing to 94.7% by day 21. At this point the patient was pain free without analgesia.



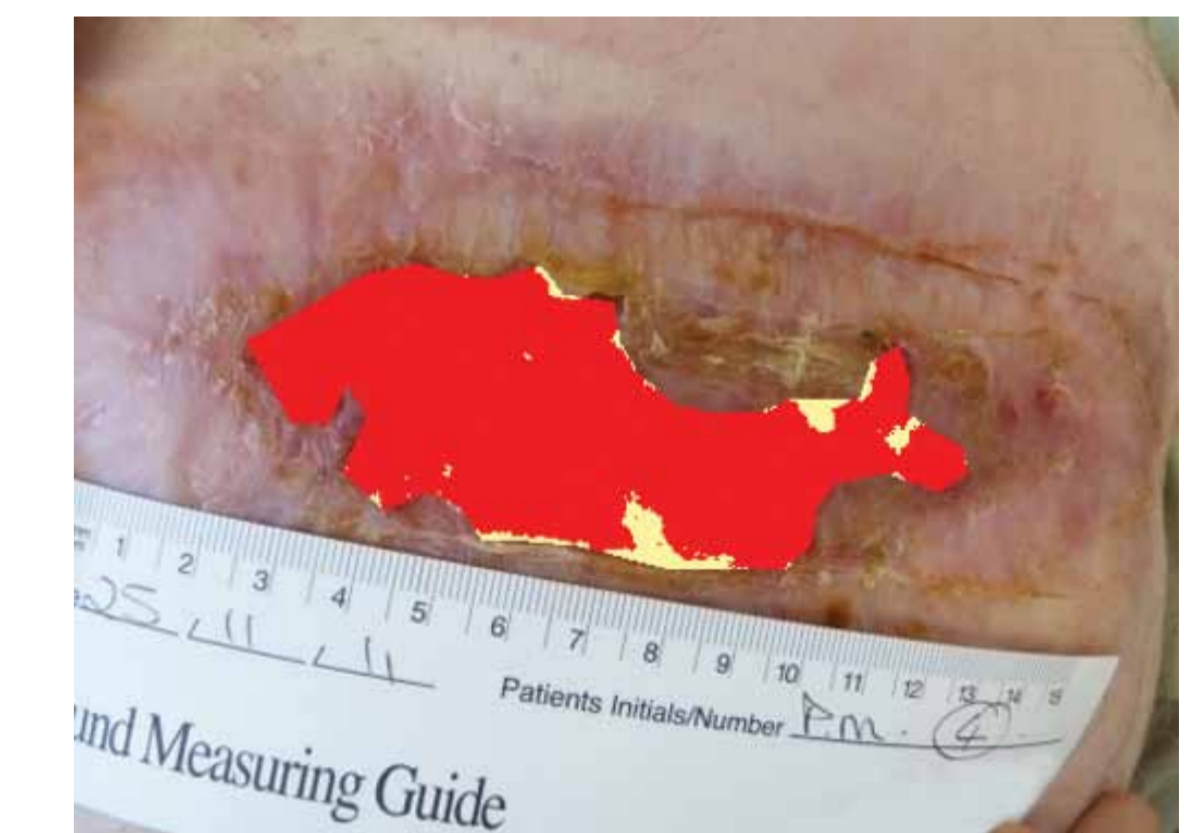
Day 0



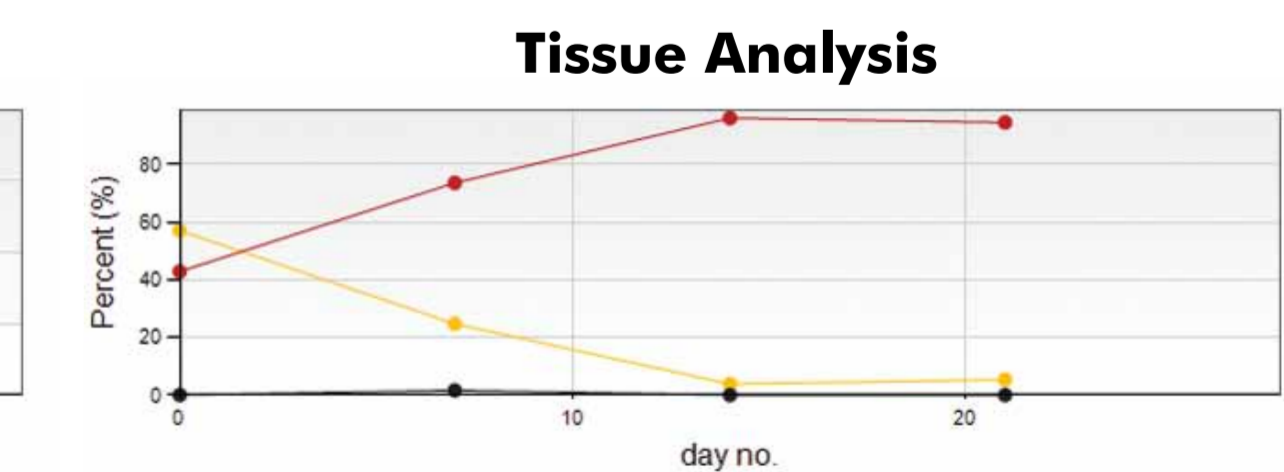
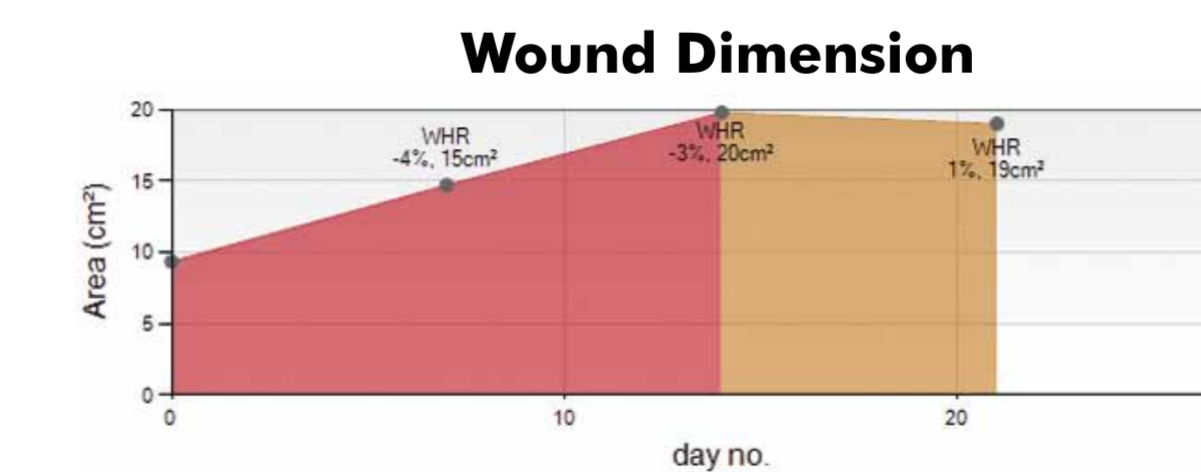
Day 0 Analysis



Day 21



Day 21 Analysis



## Conclusion

The aim of the evaluation was to observe whether the use of a hydroconductive technology could promote healing in non-healing wounds without causing further complications. The use of the dressing in this small sample of patients demonstrated that it was successful in preparing the wound bed to heal, without causing damage to peri-wound tissue.

The improvements observed in the wound bed suggest that the healing process was stimulated and the wound may now be in a state where healing could progress.

\* DRAWTEX® Hydroconductive Wound dressing. Beier Drawtex Healthcare.

The study was sponsored by Beier Drawtex Healthcare.



## Reference

1. Falanga V. Classifications for wound bed preparation and stimulation of chronic wounds. Wound Repair Regen 2000; 8(5): 347-52.
2. Imago Care Ltd ©2012, Elixr, Application & Validation of a Unique Image Analysis Tool.