

# Treating Partial Thickness Minor Injuries Using ActivHeal® Hydrocolloid

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## Background:

Road rash is a common but inconvenient injury that is endured by cyclists at some point. The severity of the condition depends on the nature of the injury, with sliding injuries causing more damage due to friction. Friction is the non-conservative resistive force that occurs when two surfaces move against each other forced into contact<sup>1</sup>. This then results in an abrasion similar to a burn where the epidermis and dermis are destroyed. It is extremely painful because of the amount of nerve ends exposed, healing can take a long time and scarring is common.<sup>2</sup>

## Introduction:

Hydrocolloids are more often used as a treatment option for chronic wounds such as leg ulcers and are recommended for the treatment of Grade II and III Pressure ulcers<sup>3</sup> However there is a plethora of research and evidence discussing the use of hydrocolloids in the treatment of acute and chronic wounds.<sup>4,5</sup>

## Method:

DH was a 45 year old, fit and healthy male taking part in an endurance cycling event in France where he had an accident on his bicycle where a partial thickness abrasion was sustained to the left hip. It was of importance to the cyclist that he continued with the event so it was vital that a dressing regime would allow this.

( Picture 1)

The wound was cleansed and any debris was removed from the wound. A comprehensive wound assessment was carried out and Activheal® hydrocolloid was selected. Hydrocolloid dressings create a moist wound environment that is known to be beneficial to wound healing.<sup>5</sup>(Finnie, 2002). The impermeable nature of Hydrocolloids provides a protective covering to the wound, permitting washing or showering while helping to prevent the spread of pathogenic microorganisms. <sup>6</sup>The wound was cleansed, reassessed and redressed over a 2 week period using ActivHeal® Hydrocolloid.

## Results:

The wound was monitored through wound assessment and photography to demonstrate progression, autolytic debridement and tissue angiogenesis. The dressings were replaced every second day due to extrinsic factors such as climate, friction and shear and movement however in other circumstances they could have remained in place longer.



Presented with a semicircular partial thickness abrasion approx 10cms width and length with swelling and contusions. There were two areas of necrosis present in the exposed dermis. Wound bed dry and painful.



Evidence of autolytic debridement as necrotic tissue has softened and now sloughy in appearance. Moderate exudate levels, however Peri wound skin intact. Wound bed is now moist but extremely painful when left exposed. No evidence of infection.



The wound had greatly reduced in size and the slough had reduced. There was evidence of epithelialisation in the wound bed. No signs of infection. The pain when the wound was exposed was greatly reduced. Peri wound skin was intact

## Discussion:

The wound was at high risk of infection and further breakdown due to the exposure from the environment in the form of dirt and debris, friction and wound sticking to clothing. There was additionally the risk of desiccation due to the extremely high temperatures experienced along with the risk of dehydration with the cyclist spending up to ten hours cycling per day.

Hydrocolloid dressings create and maintain a moist wound environment that supports wound healing.<sup>7</sup> A moist wound healing environment has been shown to help prevent cell dehydration and death, promote angiogenesis, and improve phagocytosis and growth factor elaboration.<sup>8</sup> Moisture also improves the rate of re-epithelialisation, reduces pain, and improves the cosmetic outcome <sup>8</sup> Exudate promotes autolysis which removes dead proteins (slough) from the surface of the wound. <sup>9</sup>Additionally the semi -occlusive nature of the dressings means that the risk of cross contamination from the environment is reduced. The composition of the dressing meant that the coefficient of friction was greatly reduced therefore removing the risk of shear and friction causing further damage to underlying tissues.

## Conclusion:

Although hydrocolloid dressings are most commonly associated with the treatment of chronic wounds such as leg ulcers and pressure ulcers, they can also be used with good effect for the treatment of a variety of acute wounds, where their ability to facilitate debridement, absorb excess fluid and provide a barrier to infection is equally valuable.<sup>6</sup> The moist, oxygen depleted, environment produced by the dressing is thought to protect the nerve endings and so help to reduce pain in the wound bed. <sup>10,11</sup>

The use of Hydrocolloid has shown to be an effective treatment regime in this case as it created the right environment in which to allow wound healing to take place. Importantly, DH found that the dressings were very comfortable to wear and the conformability of the dressing was very practical for the activity taking place. Furthermore, he found that the dressing managed the exudate levels with very little leakage as this has created problems with previous episodes of road rash. DH also commented on the rate of healing was far quicker than his previous experiences of partial thickness abrasions.

The outcome of this case study supports that ActivHeal® Hydrocolloid is effective in the rehydration and debridement of a necrotic and sloughy wounds and provided the outcomes for both the patient and clinician. Hydrocolloids can provide a cost effective management option if chosen and used correctly.

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