

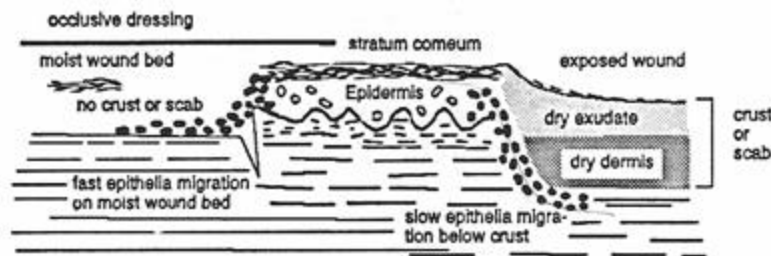
Moist Wound Healing

George Winter, PhD, University of London questioned if allowing wound to dry out was the best method of healing.

- 1962 conducted study by creating multiple small partial thickness wounds on the backs of pigs. Portion of the wounds were allowed to dry out and form scabs, while others were covered with a polymer film.
- Results: Wounds that had been covered by polymer film, epithelialized twice as quickly as the wounds exposed to air.

Winter postulated that epithelial cells in dry wounds have to negotiate the scab, consuming energy and time, whereas in moist wounds they migrate freely across a moist, vascular wound surface. Winter's theory has been supported by other studies in addition other studies provided evidence that a moist environment can accelerate the inflammatory response, leading to faster cell proliferation and wound healing in deeper dermal wounds.

The principle of moist wound healing mimics the function of the epidermis. Our body is mainly composed of water, and the natural environment of a cell is moist; therefore, a dry cell is a dead cell. The diagram below demonstrates the benefits of moist wound healing from use of an occlusive dressing.



Epidermal cells migrate only over viable tissues as they require a blood and nutritional supply that is adequate to meet their energy needs. Because the migration tongue of epithelium must burrow between eschar, crust, or a scab and the underlying living tissue,

Advantages of moist wound healing

- Decreased dehydration and cell death (Neutrophils, macrophages, & fibroblast necessary for wound healing cannot thrive in a dry environment)
- Increased angiogenesis
- Enhanced autolytic debridement
- Increased re-epithelialization (Dry crusted wounds decrease supply of blood and nutrients which thus results in a barrier to cell migration and slowing of epithelialization.)
- Decreased pain (Moist wound bed insulates and protects nerve endings thereby reducing pain.)

References:

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Wayne, P.A., Krasner, D., Rodenheaver, D., Sibbald, R.G. *Chronic Wound Care: A Clinical Source Book for Health Care Professionals* 245-252. HMP Comm. 1996