

## Wound Care and Healing

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### ABSTRACT

Wound healing is critical to prevent complications, such as infections, delayed healing, and misshapen scars, and to promote optimal recovery of damaged tissue. Proper wound evaluation, proper cleaning, debridement, use of proper dressings, proper nutrition and hydration, infection prevention and treatment, inflammation control, and use of advanced therapies are all important measures to consider in wound care.

**KEYWORDS:** Wounds, cicatrization, healing process

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### INTRODUCTION

Wounds are a common health problem around the world, which can be caused by a variety of factors, such as accidents, surgery, chronic diseases, burns, sports injuries, among others. Scarring is a complex and dynamic process that involves the interaction of different cell types, growth factors and proteins. Wound healing is critical to prevent complications, such as infections, delayed healing, and misshapen scars, and to promote optimal recovery of damaged tissue.

Worldwide, wound healing is a major concern for healthcare professionals, as wounds can have a significant impact on patients' quality of life and can increase healthcare costs. Although there are many advances in wound care, there are still many unanswered questions about how to improve healing in different types of wounds.

In this literature review article, we will discuss the fundamental concepts of wound healing and proper wound care to promote optimal healing. The latest advances in dressing technology and healing therapy will be reviewed, and emerging treatments for chronic and complex wounds will be discussed. In addition, the methods of evaluation and proper care of wounds will be described, as well as their importance in clinical practice.

#### Wound healing

Wound healing is a complex process that involves a coordinated interaction of different cell types, growth factors, and proteins. This process is divided into three phases: inflammatory, proliferative and remodeling.

The inflammatory phase is the first stage of wound healing and begins immediately after the injury. During this phase,

blood vessels constrict to reduce blood flow and prevent blood loss. The blood vessels then dilate and become more permeable, allowing in blood cells, such as neutrophils and macrophages, which remove bacteria and dead tissues. In addition, during this phase, growth factors are released that stimulate the migration and proliferation of cells for the next phase.

The proliferative phase is the second phase of wound healing, which begins a few days after injury and lasts up to several weeks. During this phase, endothelial cells and skin cells multiply and migrate to the injured area. Fibroblasts produce a collagen-rich extracellular matrix, which provides structural support for tissue repair. In addition, during this phase, new blood vessels are formed, which increases the supply of oxygen and nutrients to the injured area.

The remodeling phase is the last phase of wound healing, which begins several weeks after the injury and can last up to several months or even years. During this phase, skin cells continue to multiply and the extracellular matrix is remodeled and strengthened through the production of collagen and other components. The scar eventually stabilizes and contracts, reducing the appearance of the original wound.

#### Proper wound care

Proper wound care is critical for optimal healing and prevention of complications. Initial wound evaluation should include an evaluation of the depth, extent, type of tissue injured, and the presence of foreign bodies or infection. In addition, the evaluation should include an assessment of the presence of factors that may delay healing, such as poor circulation, malnutrition, and diabetes.

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Once the wound has been evaluated, care should include proper cleaning and debridement of the wound. Wound cleaning may be done with soap and water or sterile saline, while debridement may be necessary to remove necrotic tissue and other debris. Dressings can be used to protect the wound and promote healing, and can be selected based on the amount of exudate, location, and extent of the wound.

In addition, wound care should include the prevention and treatment of infections. Infections can slow healing and increase the risk of serious complications, such as sepsis. Topical and systemic antimicrobials can be used to prevent and treat wound infections.

It is also important to consider factors related to the patient's nutrition and hydration. Proper nutrition is essential for tissue repair, and malnourished patients may have an increased risk of delayed healing. In addition, proper hydration is important for maintaining good blood circulation and promoting wound healing.

There are several types of wound care dressings available, each with different properties and benefits. Hydrocolloid dressings are useful for wounds with little exudate, while alginate dressings are suitable for wounds with moderate to high exudate. Foam dressings and hydrogel dressings are also common options for wound care.

In addition to wound care itself, it is also important to evaluate and treat underlying factors that can delay healing. Poor circulation, malnutrition, diabetes and other chronic diseases can negatively affect wound healing and should be addressed in the care plan.

### DISCUSSION

Wound care is a complex process that involves several therapeutic measures for proper healing. In the discussion below, some of the most important measures that should be considered in wound care will be addressed.

Proper wound evaluation is an important first step in wound care. This includes assessing the location and size of the wound, as well as the type of tissue that has been affected. In addition, evaluation for the presence of signs of infection, such as redness, warmth, pain, and discharge, is crucial for early diagnosis and treatment of infection. Once the wound has been properly evaluated, appropriate therapeutic measures can be implemented for effective healing.

Proper wound cleaning is a key aspect of wound care. Proper cleaning helps prevent infection and promotes optimal healing. Wound cleaning should be done with normal saline or clean, running water. Topical antiseptics may be used in specific cases, such as in immunocompromised patients or when infection is suspected. It is important to avoid using irritating or harmful solutions, such as hydrogen peroxide or alcohol.

Debridement is another important therapeutic measure for wound care. Debridement refers to the removal of dead or damaged tissue from the wound. Dead or damaged tissue can impede healing and increase the risk of infection.

Debridement can be performed mechanically, surgically, or with the use of enzymes. Proper debridement should be performed only by trained and experienced personnel, and should be carefully supervised to avoid complications.

Using proper dressings is another important aspect of wound care. Dressings can protect the wound from contamination, promote healing, and help control exudate. The choice of the right dressing will depend on the characteristics of the wound, such as the amount of exudate, the type of tissue damaged, and the location of the wound. Foam dressings, hydrogel dressings, alginate dressings, and silver dressings are just a few common options available for wound care.

Proper nutrition and hydration are important for wound healing. Proper nutrition provides the nutrients needed for tissue repair, and proper hydration helps maintain good blood circulation and promotes wound healing. Malnourished or dehydrated patients may be at increased risk of delayed wound healing and should be evaluated and treated appropriately.

Prevention and treatment of infections are critical for proper wound healing. Signs of infection, such as redness, warmth, pain, and discharge, should be evaluated and treated early. Treatment of the infection may include administration of topical or systemic antibiotics, depending on the severity of the infection. It is important to note that inappropriate use of antibiotics can contribute to bacterial resistance and should be avoided.

In addition, controlling inflammation is important in wound care. Inflammation is a normal response of the body to injury, but excessive inflammation can prevent wound healing. Applying cold compresses and administering anti-inflammatory medications, such as ibuprofen or acetaminophen, can help control inflammation.

In some cases, the use of advanced wound care therapies may be necessary. These therapies may include negative pressure therapy, hyperbaric oxygen therapy, or growth factor therapy. These advanced therapies may be useful in patients with chronic wounds or in patients who do not respond to conventional therapeutic measures.

### CONCLUSION

In conclusion, wound care is a complex process that involves several therapeutic measures for proper healing. Proper wound evaluation, proper cleaning, debridement, use of proper dressings, proper nutrition and hydration, infection prevention and treatment, inflammation control, and use of advanced therapies are all important measures to consider in wound care. Proper wound care can prevent complications, improve the patient's quality of life, and promote effective healing.

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