

# Skin Necrosis

Luc Téot  
Sylvie Meaume  
Sadanori Akita  
Véronique Del Marmol  
Sebastian Probst  
*Editors*

*Second Edition*



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Editors

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 Springer

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# Regulations for Conservative Sharp Debridement for Nurses in Europe

# 76

Sebastian Probst

## 76.1 Introduction

In Europe, different levels of nursing educations with a different level of competences exist. The RN4CAST, for example, demonstrates how vast the nursing education as well as their conditions of service, their regulations and policies within Europe are [1]. The report demonstrates that each European country has their own definitions, regulations, and policies about the nursing profession. This can, in clinical practice, easily lead to confusion. As a result of this confusion, specialized knowledge, skills, and competencies are required to initiate, direct, and perform safe and effective debridement [2]. These skills have to be acquired during the nursing education and have to be practiced in different workshops and in clinical practice.

When performing wound debridement, nurses should always work within their scope of practice and local policy and procedures [3, 4]. This chapter will overview regulations for sharp debridement for nurses in Europe and will show when to debride and what are the requirements of nurses to debride a wound.

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## 76.2 Regulations for Conservative Sharp Debridement for Nurses in Europe

Performing a bed-side conservative sharp debridement may be independently restricted either by safety factors regarding the physical setting or by the legislation that governs a health care sector. In most European countries, it is a physician delegated task. However, conducting a debridement by a nurse in clinical practice requires a certain level of education. For example, the Ashford and St. Peter Hospital in the UK [5] require that only registered nurse with a wound care specializations having completed an education program in wound debridement, that includes conservative sharp debridement, recognized by a University and at a minimum of level 6 and/or endorsed and approved by the European Wound Management Association [6]. Initial and continued competency shall be required and documented for all registered nurse with a wound care specializations performing debridement. Competency is not only a skill demonstration, but also includes assessment contributing to a nursing diagnosis with the development and application of a plan of care, evaluation, and reassessment. The registered nurse performing wound debridement ensures that an assessment of the total patient care requirements before, during, and after wound debridement has been completed by a registered nurse. The registered nurse has to recognize potential complications of

wound debridement and if so has to apply universal precautions and other measures to prevent bleeding or infection and contamination.

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### 76.3 When to Debride?

The type of tissue found in the wound bed often provides a clear indication as to whether debridement is required or not [7]. In addition, factors such as bio-burden, wound edges, and condition of peri-wound skin can also influence the decision of whether debridement is required [8]. Nurses performing a debridement need to have a clear understanding of the underlying cause. In certain circumstances, a wound debridement may not be beneficial or may be contraindicated. This is the case, for example, for persons with peripheral arterial disease (PAD) who develop distal gangrene. In this case, the dry gangrene should be treated without any moist dressing and not with debridement. A debridement may develop levels of moisture at the wound bed leading to a greater risk of infection with the risk of amputation [9].

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### 76.4 Who Can Debride?

It is recommended that a conservative sharp wound debridement may be provided by only those registered nurses with advanced preparation in the wound debridement processes [10]. Nurses have to be aware about local policies and guidelines related to wound management and in most European countries have to get approval from their employer to perform the extended role.

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### 76.5 What Is the Procedure of a Sharp Debridement?

Before a specialized nurse is undertaking the procedure, it is important to be informed about the differential diagnosis as well as the prescribed medication. Diabetes, for example, is associated with small and large vessel disease, resulting in an increased risk of infection and poor healing.

When debriding an ulcer on the foot, be aware of there may be an underlying neuropathy (Charcot's joints/foot). Patients need careful assessment with control of their diabetes and infection. Repeated appropriate debridement can avoid the need for proximal amputation with the attendant huge drain on resources for rehabilitation. Additionally, when taking consent, it is important that the patient understands what should be achieved. Be aware that to try and to undertake too much at once may reduce the confidence between the patient and the nurse. The following procedure is recommended:

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### 76.6 Assess

- What is the nature of the necrotic/devitalized tissue and what is the best adapted method of debridement?
- Is there a risk of spreading infection?
- Is there a possibility of underlying disease processes?
- Is there an extent of existing ischemia (check skin color and pulse)?
- Where is the location of the wound in relation to the surrounding anatomy?

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### 76.7 Pain Relief

- Is there any pain medication prescribed targeting the nociceptive and/or the neuropathic pain?
- Is it necessary and what form should it take?

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### 76.8 Question, What Can Be Possible Complications When Doing a Sharp Debridement

- Conservative sharp debridement is a surgical procedure and may involve some bleeding.
- Bleeding can be stopped with local pressure with a finger.
- The application of successive layers of gauzes can hide considerable hemorrhage and is ineffective.

- Stop the procedure when the anatomy of the wound and surrounding area is unclear or a structure cannot be identified or bleeding is excessive or the source is unclear.

The debridement method with sharp instruments is subdivided into 3 levels. Level 1 is

defined as sharp debridement using scissors and forceps, level 2 is the conservative sharp debridement, and level 3 is defined as sharp surgical debridement. Table 76.1 will outline the mechanism of action, the advantages and disadvantages, and the level of nursing education required to perform this task.

**Table 76.1** Levels of debridement with sharp instruments

Method	Mechanism of action	Advantages	Disadvantages	Level of nursing education
Level 1 Sharp debridement Using tweezers, forceps, scissors	Use of tweezers, forceps, and scissors to remove loose avascular tissue Scalpels are <b>not</b> used No tissue is removed below level of dermis	Produces immediate debridement Is selective removing necrotic tissue	Requires additional education	Nurses with a Bachelor in Nursing Science (EWMA curriculum for nurses' level 5 [11])
Level 2 Conservative sharp wound debridement	Use of a sharp instrument (scalpel, curette or scissors) to remove of non-viable tissue to the level of but not into viable tissue	Produces immediate debridement Selective in removing necrotic tissue Very effective on heavily exudating wounds Should not cause pain but may cause minor amounts of bleeding	Requires additional education for nurses as carries a higher degree of clinical risk than other debridement methods Requires appropriate setting and equipment Use caution with painful wounds or for patients taking anticoagulants Not indicated for wounds in which demarcation between viable and non-viable tissue is not clear	Nurses with a Bachelor in Nursing Science and a postgraduate education in wound care (EWMA curriculum for nurses' level 6 [6])
Level 3 Sharp surgical debridement	Done by an advanced practice nurse in collaboration with a surgeon in a suitable environment Goes below the level of non-viable tissue, i.e., wound edge so can cause pain and bleeding	Produces immediate debridement Turns a chronic wound into an acute wound, thereby promoting more rapid wound healing	Non-selective- viable tissue is removed Painful	Advanced practice nurse in wound care (EWMA curriculum for nurses' level 7 [12])

## 76.9 Debridement Methods with Sharp Instruments

debridement by the British Columbia College of Nurses and Midwives [13] is outlined.

In the following, an adapted version of a step by step procedure of the conservative sharp wound

Step	Key points
1. Explain the procedure to the patient and obtain verbal consent to carry out the procedure from patient and/or family	
2. Wash hands	
3. Set up dressing tray, add instruments to the sterile field; apply clean gloves, remove dressing, and cleanse wound and surrounding area with body temperature normal saline or antiseptic	To ensure a clean environment prior to carrying out debridement
4. Do wound assessment including measurements; remove gloves. If camera is available take a photo prior to debridement Wash hands	Provides a baseline assessment prior to debridement
5. Put on sterile or clean gloves as indicated based on the patient assessment	
6. Always remove necrotic tissue in layers. Working from either the edge or the base of the wound, grasp the edges of the necrotic tissue (eschar) with tissue forceps, lift the necrotic tissue and begin removing necrotic tissue using one or more of the following techniques	Lifting the necrotic tissue will help to identify adherence between necrotic and viable tissues. Tissue forceps 1 × 2 teeth provide a good grasp without applying excessive pressure
7. Scalpel technique: Hold the scalpel like a pen, 3–4 cm away from the handle/ blade joint; the belly of the blade is sharpest and should be used to cut necrotic tissue. Lift the necrotic tissue with the forceps and carefully cut away necrotic tissue with the scalpel parallel to or angled away from the wound bed. Movement of the scalpel should follow the tissue planes	This minimizes pain and avoids damage to healthy tissue
8. Scissor technique: Lift the necrotic tissue with the forceps; hold the scissors using a tripod grip technique and use the tip of the scissors to carefully cut away necrotic tissue	Tripod grip—Place the thumb and ring fingers through the scissor handles and rest the index finger on the area of the scissors distal the screw (fulcrum). This 3-finger grip is safer as a 2-finger grip allows the cut to wander. Scissors cut flaccid, loose tissue more effectively than a scalpel, providing better control of depth. Cutting is more precise when tissue is closer to the scissor tip than the fulcrum
9. Blunt dissection technique: Insert the closed blunt tips of scissors or arterial forceps into the non-viable tissue and gently open the instrument. This safely separates the tissue, allowing non-viable tissue to be more easily debrided with scissors	Blunt dissection technique gently separates the tissue allowing for identification of viable and non-viable tissue which will decrease the risk of injury to healthy tissue and nearby structures, e.g., blood vessels, tendons
10. Ring curette technique: Hold the curette like a pen at a 10–20° angles toward the area to be debrided; stretch the skin-wound base with the non-dominant hand, and move the curette toward yourself scraping away loose, non-viable tissue	Ring curettes are suitable for scooping out loose and lightly loose non-viable tissue and to remove biofilm from the base
11. If bleeding occurs stop debridement: Apply pressure with a sterile gauze or cotton tip applicator for 5 min to stop the bleeding. If bleeding continues, identify the specific bleeding site and apply a silver nitrate stick to the site Use absorbable gelatin/plant cellulose sponges to control small amounts of oozing blood	For small amounts of bleeding, direct pressure can achieve hemostasis without other interventions. Silver nitrate sticks release silver ions that bind to tissue proteins producing a thin eschar that obstructs small bleeding vessels

Step	Key points
12. If pain occurs, stop debridement: Offer the patient an analgesic and resume debridement once the analgesic has taken effect If necessary, complete the debridement at another time	Encourage the patient to request a “time-out” if the procedure is painful. It is not necessary to remove all necrotic tissue at one time
13. Once debridement is completed, flush the wound bed with body temperature normal saline using an irrigation tip catheter and a 30–35 cc syringe	When irrigating the wound, use personal protective equipment to protect from back-splash Irrigation removes loose bits of necrotic tissue

## 76.10 Conclusions

Due to the different regulations within Europe, the procedure of a conservative sharp debridement should only be undertaken by specialists be it specialist nurses in tissue viability or physicians who have successfully completed a validated educational program in wound debridement or a minimum of degree level including assessment of competency in practice.

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