

Developed in collaboration with the Wound Care Clinicians from:



TITLE	Guideline / Procedure: Conservative Sharp Wound Debridement (CSWD) in Adults & Children
Practice Level	<ul style="list-style-type: none"> Conservative sharp wound debridement (CSWD) is a <i>restricted activity</i> according to the Nurse's (Registered) and Nurse Practitioner Regulation¹. CRNBC states that registered nurses must successfully complete additional education in CSWD and follow an established guideline when carrying out a CSWD procedure. Registered nurses in accordance with their Health Authority/agency policy. Clients undergoing conservative sharp wound debridement require an interprofessional approach to provide comprehensive, evidence-based assessment and treatment. This clinical practice guideline focuses solely on the role of the registered nurse, as one member of the interprofessional team providing care to these clients.
Background	<ul style="list-style-type: none"> CSWD can carry a potential risk for complications and may not be appropriate for all clients or in all health care settings, therefore expert assessment is required to determine if CSWD is appropriate. Wound bed debridement removes necrotic tissue & metabolic waste that impairs the healing process and reduces bacterial load to minimize the risk of local and systemic infection. While there are numerous methods of wound debridement (e.g. surgical, sharp, autolytic, enzymatic and bio-debridement), this guideline only addresses CSWD. However, more than one method of debridement may be used concurrently (see Appendix A). CSWD may be done over more than one session if necessary based on the needs of the client, the characteristics of the wound and the setting in which CSWD takes place
Indications / Contraindications	<ul style="list-style-type: none"> CSWD is indicated if: <ul style="list-style-type: none"> There are one or more types of necrotic tissue present in the wound impairing the healing process. There is advancing cellulitis or sepsis associated with necrotic tissue. The wound odour is related to necrotic tissue. CSWD should be carried out with caution, in collaboration with a physician / NP and in a controlled setting if: <ul style="list-style-type: none"> The hemoglobin less than 70 g/L; PTT greater than 45 seconds; INR greater than 1.3; Platelet count less than 100 giga / L. (blood work should be done at least within 10 days of doing CSWD) The absolute neutrophil count less than 500 mm³. There is evidence of moderate to severe arterial compromise (ABI less than 0.60 and greater than 1.30) The client has an untreated systemic infection. There is exposed bone, ligament and/or tendons in the wound. The client has significant wound pain or pain associated with debridement. The client takes anti- platelet and/or anticoagulant medication. CSWD is contraindicated if: <ul style="list-style-type: none"> The PTT greater than 65 seconds; INR greater than 2.5; Platelet count less than 75 giga / L (blood work should be done at least within 10 days for doing CSWD) Underlying structures such as bone, tendons or ligaments cannot be clearly identified. The interface between viable and non viable tissue cannot be clearly identified. There is a below-knee, non-infected, ischemic ulcer, covered with dry, stable eschar and the goal of care is maintenance rather than healing, e.g. pressure-related heel ulcer, arterial ulcer, diabetic ulcer with dry gangrene.

¹ College of Nurses of British Columbia. (2010). Scope of practice for registered nurses: Standards, limits and conditions. Vancouver: Author.

	<ul style="list-style-type: none"> ○ The client has malignant wounds or inflammatory ulcers. ○ The client has vascular grafts, prostheses or dialysis fistulas in close proximity to the wound. ○ The nurse is unable to maintain aseptic technique.
Definitions	<p>Biofilm – An aggregate of micro organisms in which cells adhere to each other and/or to a surface; these adherent cells are frequently embedded within a self-produced matrix of extracellular polymeric substance (EPS); can be found on the surface of wounds.</p> <p>CSWD – The removal of non-viable tissue to the level of viable tissue, using a scalpel, scissors or curette to create a clean wound bed; involves minimal or no pain and bleeding, and does not require general anaesthesia; may require analgesics and/or local or topical anaesthesia.</p> <p>Eschar, dry stable – Firm, dry necrotic tissue with an absence of drainage, edema, erythema, fluctuance or separation from the wound edge; may be black or brown in color and is attached to the wound edges and wound base.</p> <p>Eschar, soft boggy – Soft necrotic tissue; may be black, brown, grey, or tan in color; may be firmly or loosely attached to the wound edges and wound base; fluctuance and drainage may be present.</p> <p>Slough - Soft, moist necrotic tissue; brown, tan, yellow or green in colour; may be thin or thick and the consistency may be fibrous, stringy or mucinous; may be firmly or loosely attached to the wound edges and base.</p> <p>Restricted Activity - An activity that presents a significant risk of harm to the public and is therefore reserved for health professionals with specialized education and training; the activity may not require an order but does require an RN to adhere to standards, limits and conditions set by the College of Registered Nurses of B.C. (CRNBC)</p>
Related Documents	<p>Guideline: Lower Limb Ulcers Guideline: Diabetic Ulcers Guideline: Pressure Ulcers Guideline: Surgical Wounds</p>

Assessment and Determination for the need for CSWD

Assessment

To develop a comprehensive plan of care and to determine the need for CSWD, assess the following:

1. Client concerns (Link to Pressure Ulcer DST; Lower Limb DST; Diabetic DST).
2. Presence of risk factors for wound healability (Link to Lower Limb DST; Pressure Ulcer DST; Diabetic Ulcer DST, Surgical Wound DST).
3. If the wound is on the lower limbs, assess the lower limbs with respect to healability
 - a. Complete a lower limb assessment.
 - b. Measure ABI² and toes pressures where available if client has signs and symptoms of arterial compromise.
 - c. Measure protective sensation in feet using monofilament testing (Link to Monofilament DST).
4. Wound Assessment:
 - a. History of current & previous wounds.
 - b. Location of wound.
 - c. Wound measurements; check for undermining or sinus tracts.
 - d. Wound probing to bone; exposed bone, ligament and/or tendon.
 - e. Appearance of wound bed, noting percentage of tissue type, especially the nature and amount of eschar / slough.

² Registered nurses must successfully complete additional education before carrying out ankle brachial pressure index testing. Agency / health authority policy and standards should be in place to support practice.

- f. Amount & type of exudate.
 - g. Presence of odour, after cleansing.
 - h. Description of wound edge noting the interface between viable and non viable tissue
 - i. Peri-wound skin.
 - j. Vascular grafts, prostheses or dialysis fistulas in close proximity to the wound.
5. Presence and character of wound pain.
6. Presence of wound infection
- a. Assess for signs and symptoms of systemic and localized infection. (Link to Infected Wound DST).
 - b. In clients with diabetes and/or arterial compromise, visible evidence of localized infection may be muted or non existent due to compromised arterial blood flow, blunting of the inflammatory process, and diminished sensation.
 - c. If it is not clear whether a localized infection will resolve following debridement, observe the wound to determine if infection resolves or if antibiotics are required.
7. Collaborate with a wound care clinician or physician / NP for the following investigations (where available).
- a. Vascular testing such as ABI or toe pressures if debriding lower limb ulcers.
 - b. HgA1c and blood glucose if client has diabetes.
 - c. Radiology studies to r/o osteomyelitis if the wound probes to bone.
 - d. Albumin or pre-albumin testing if nutritional concerns are present.
 - e. Hemoglobin, platelet count, neutrophil count, INR and PTT.

Determination for the need for CSWD

1. There is a high percentage of necrotic tissue in the wound.
2. None of the contraindications listed on page 1 are present.
3. The client's potential for healing.
4. Odour related to necrotic tissue is present in the wound.
5. The wound is infected due to the presence of necrotic tissue in the wound.

Interventions

Develop a plan of care, in conjunction with the client / family that incorporates client care, treatment of risk factors, wound management, intended and unintended outcomes and client education.

Client Care Management

1. Client Concerns
 - a. The plan of care should take into account client / family abilities, concerns, preferences and motivation for treatment.
2. Risk Factors for Wound Healability
 - a. Treat risk factors and wound related problems, such as edema, impaired peripheral circulation, and poor nutrition (Link to Pressure Ulcer DST; Lower Limb DST; Diabetic Ulcer DST; Surgical Wounds DST).
 - b. Refer to members of the interprofessional team as required.

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3. Pain Relief

- a. If the client has known wound pain, organize care to coordinate with regular analgesic administration allowing sufficient time for the analgesic to take effect.
- b. If oral analgesic is not effective, consider using a topical lidocaine 2.5% / prilocaine 2.5% (EMLA) preparation.³
- c. Work in collaboration with a physician / NP if the client has significant wound pain.
- d. Encourage clients to request a “time-out” if debridement is painful; if necessary stop CSWD and reschedule for another time.
- e. When appropriate, use reassurance, music, distraction, conversation, or guided imagery during the procedure to reduce pain.

Wound Care Management

1. Wound Infection

- a. Notify the physician / NP if systemic wound infection is suspected.
- b. If there are 3 signs and symptoms of a *systemic* infection and CSWD has produced an area on the wound bed that is free of necrotic tissue, take a swab for culture and sensitivity (C & S).
- c. Notify the physician / NP if the C & S is abnormal.
- d. In situations where *localized* wound infection is noted prior to debridement then following debridement monitor the wound to determine if infection has resolved; if the infection is not resolved or worsens take a swab for C & S.

2. Procedure: Conservative Sharp Wound Debridement Using Sterile Scissors, Scalpel or Curette

Equipment and Supplies

Sterile dressing tray

Gloves (sterile or clean based on client assessment and dressing procedure)

Agency approved antiseptic, e.g. Chlorhexidine 0.05%

Sterile normal saline for wound irrigation

Wound irrigation device and 30 – 35 cc syringe

Personal Protective Equipment Safety glasses / gown as required

Sterile cotton tip applicators

Measurement guide

Camera, if applicable

Dressing supplies appropriate for the wound

Tissue forceps, e.g. Gillies, Adson, Semken

Scalpel (blade #10, # 15), if needed

Sterile sharp scissors, e.g. Surgical Iris, Metzenbaum, Tenotomy, Wagner, if needed

Blunt tipped scissors or arterial forceps, if needed

Ring curettes (#3, #5, #7), if needed

Sharps container, if needed

Hemostatic agents, e.g. silver nitrate sticks; absorbable gelatine / plant cellulose sponges, e.g. Gelfoam, Surgicel; QR Powder

³ Apply 1-2 g. / 10 cm² (2 inches) up to a total of 10 grams; apply 30 minutes prior to treatment or 60 minutes if debriding necrotic tissue with a thicker penetration barrier (thick eschar); start debridement immediately following removal of EMLA cream.

Procedure

Steps	Key Points
1. Explain the procedure to the client and obtain verbal consent to carry out the procedure from client 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 & 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 client 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 & 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.

<p>9. Blunt Dissection Technique: Insert the closed blunt tips of scissors or arterial forceps into the non- viable tissue & gently open the instrument. This safely separates the tissue, allowing non-viable tissue to be more easily debrided with scissors.</p>	<p>Blunt dissection technique gently separates the tissue allowing for identification of viable & non-viable tissue which will decrease the risk of injury to healthy tissue & nearby structures, e.g. blood vessels, tendons</p>
<p>10. Ring Curette Technique: Hold the curette like a pen at a 10 – 20° angle 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.</p>	<p>Ring curettes are suitable for scooping out loose & lightly loose non viable tissue and to remove biofilm from the base.</p>
<p>11. If bleeding occurs stop debridement:</p> <ul style="list-style-type: none"> • Apply pressure with a sterile gauze or cotton tip applicator for 5 minutes to stop the bleeding. • If bleeding continues identify the specific bleeding site & apply a silver nitrate stick to the site. • Use absorbable gelatine / plant cellulose sponges to control small amounts of oozing blood. 	<p>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.</p>
<p>12. If pain occurs, stop debridement:</p> <ul style="list-style-type: none"> • Offer the client an analgesic & resume debridement once the analgesic has taken effect. • If necessary, complete the debridement at another time. 	<p>Encourage the client to request a “time-out” if the procedure is painful. It is not necessary to remove all necrotic tissue at one time.</p>
<p>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.</p>	<p>When irrigating the wound, use personal protective equipment to protect from back-splash. Irrigation removes loose bits of necrotic tissue.</p>
<p>14. Measure wound and reassess all wound parameters.</p>	<p>Measurements will change following debridement.</p>
<p>15. If a camera is available take a photo of the debrided wound.</p>	
<p>16. Dress the wound as appropriate.</p>	
<p>17. Following the procedure, clients who are at risk for bleeding or have increased pain should be closely monitored.</p>	

Client Education and Resources

1. Educate the client and family on the rationale for and procedure of CSWD.
2. Educate the client and family to monitor for unintended outcomes.

Client / Family Outcomes

1. Intended
 - a. CSWD removes necrotic tissue from the wound bed.
 - b. There is minimal bleeding evident during and following the procedure.
 - c. The client indicates that pain due to the procedure is resolved or manageable.
 - d. The client and family understand and act on their role in monitoring for unintended outcomes.
2. Unintended
 - a. Excessive bleeding is evident.
 - b. There is damage to underlying structures such as tendon, muscle, bone and blood vessels.
 - c. The client expresses concerns about poorly managed pain.
 - d. The client and family do not understand and/or act on their role in monitoring for unintended outcomes.

Documentation

1. Document an assessment of the indications for CSWD and the presence of any precautions to performing CSWD.
2. Document wound assessment s prior to and following CSWD as per agency guidelines to reflect changes in the wound measurements and the wound bed following debridement.
3. Document the procedure, expected and unexpected outcomes, the patient's tolerance of the procedure and changes to the wound care plan according to agency guidelines.

Bibliography

1. AstraZeneca Canada. EMLA Cream Product Monograph. Retrieved from www.astrazeneca.ca/documents/ProductPortfolio/EMLA_PM_en.pdf
2. Blanke, W., et al. (2003). Sharp wound debridement in local anaesthesia using EMLA cream: 6 years' experience in 1084 patients. *European Journal of Emergency Medicine*. 10(3): 229 – 231.
3. Briggs, M et al. (2003). Topical agents or dressings for pain in venous leg ulcers. *Cochrane Database of Systemic Reviews*, Issue 1. Art. No. CD001177. DOI Retrieved from www.cochrane.org/reviews/en/ab001177.html
4. Chernecky, C., et. al. (2001). *Laboratory Tests and Diagnostic Procedures* (3rd ed.). W.B Saunders: Philadelphia.
5. Clinical guidelines from Vancouver Island Health Authority (2007), Northern Health (2009), Vancouver Coastal Health / Providence Health Care (2008), Interior Health (2007), and Fraser Health (2006)
6. European Wound Management Association. (2002). Position document: Pain at wound dressing changes. London: Author
7. Harris, R, (2009). The nursing practice of conservative sharp wound debridement: Promotion, education & proficiency. *Wound Care Canada*. 7(1):22-30.
8. Ayello, E. (2004), Conquer chronic wounds with wound bed preparation. *Nurse Practitioner*. 29(3):8-25.
9. Ayello, E., et. al. (2008). Wound Debridement. In *Wound Care Essentials: Practice Principles*. 2nd edition. Philadelphia: Lippincott, Williams & Wilkins. pp 119-135.
10. Barr, J.E., (2003). Autolytic, Mechanical, Chemical and Sharp Debridement. In *Wound, Ostomy, and Continence Nursing Secrets*. Philadelphia: Hanley & Belfus, Inc. pp. 54 – 64.
11. Bates-Jensen, B., M., Apeles, N.C.R. (2007). Management of Necrotic Tissue. *Wound Care: A Collaborative Practice Manual for Health Professionals*. 3rd edition. Philadelphia: Lippincott Williams & Wilkins. pp 197-214.
12. College of Registered Nurses of British Columbia. (2010). *Scope of Practice for Registered Nurses: Standards, Limits, and Conditions*. No. 433. Vancouver: Author.
13. Kirshen, C., et. al. (2006). Debridement: A vital component of wound bed preparation. *Advances in Skin & Wound Care*. 19:506-517.
14. Leaper, D. (2002). *Sharp Debridement*. Retrieved from <http://www.worldwidewounds.com/2002/december/Leaper/Sharp-Debridement.html>
15. Palm, M., et. al. (2008). Topical hemostatic agents: A review. *Dermatologic Surgery*. 34(4): 431 – 443.
16. Ramundo, J.M. (2007). Wound Debridement. In *Acute & Chronic Wounds, Current Management Concepts*. 3rd edition. St Louis: Mosby. pp 176-192.
17. Registered Nurses Association of Ontario. (2002). Nursing Best Practice Guideline: Assessment and Management of Stage I to IV Pressure Ulcers. Toronto: Author.

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18. Sibbald, R.G., et al. (2006). Best practice recommendations for preparing the wound bed: Update 2006. *Wound Care Canada*. 4(1):15-29.
19. Vujevich, J., et al. (2008). The four angles of cutting. *Dermatologic Surgery*. 34(8) : 1082 - 1084
20. Weir, D., et al. (2007). Wound Debridement. In *Chronic Wound Care: A Clinical Source Book for Health Professionals*. 4th edition. 343-355. HMP Communications.
21. Woo, K, et al. (2008). Assessment and management of persistent (chronic) and total wound pain. *International Wound Journal*. 5(2): 205-215.
22. Woo, K, et al. (2009). Improving health-related quality of life for patients with painful, exudating chronic wounds. *Wound Care Canada*. 7(2): 20 – 26.
23. Wound Ostomy and Continence Nurses Society. (2005). Conservative sharp wound debridement: Best practice for clinicians. Mt Laurel, NJ. Retrieved from www.wocn.org
24. Wound Ostomy and Continence Nurses Society. (2003). Clinical practice guideline: Guideline for prevention and management of pressure ulcers. *WOCN Clinical Practice Guideline Series*. Glenview, IL.

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Appendix A: Methods of Debridement

Method of Debridement	Description
Surgical sharp wound debridement	<ul style="list-style-type: none">• Involves the removal of both necrotic and healthy tissue, converting a chronic wound into a clean acute wound; performed by a surgeon, usually in the operating room.
Conservative sharp wound debridement (CSWD)	<ul style="list-style-type: none">• Involves the removal of nonviable tissue to the level of viable tissue, using a scalpel, scissors or curette to create a clean wound bed; involves minimal pain and bleeding, and does not require general anaesthesia; may require analgesics and/or local or topical anaesthesia.
Autolytic debridement	<ul style="list-style-type: none">• Involves the use of moisture retentive and/or hydrogel dressings to soften necrotic tissue. Necrotic tissue is then dissolved by the enzymes in the wound fluid and wound bed can be flushed clean.
Biodebridement	<ul style="list-style-type: none">• Involves the use of live medical grade maggots (fly larvae) to remove necrotic tissue from a non-healing wound.
Mechanical debridement	<ul style="list-style-type: none">• Involves the use of physical forces to remove necrotic tissue from a wound. Wet-to-dry gauze dressings is one form of mechanical debridement, but is not recommended as it is non-selective, removing healthy tissue as well as necrotic tissue when removed. Other methods of mechanical debridement include irrigation, pulsed lavage and hydrotherapy (whirlpool therapy).