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HEALTHCARE GROUP

Wound dressing application, home care

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Introduction

Wound dressings function to provide an optimal environment for wound healing by maintaining a moisture balance. Wound healing requires a moist environment, because epithelial cells require moisture to migrate from the wound edges to re-epithelialize, or close, the wound. However, too much moisture may delay healing and damage surrounding skin. Therefore, the choice of wound dressing depends on ongoing assessment of the wound to determine which wound dressing can maintain the right moisture balance for healing. Dry wounds need dressings that add moisture, whereas exudative wounds need dressings that absorb moisture. In addition to maintaining a moisture balance, wound dressings also can help debride necrotic tissue and prevent the proliferation of bacteria to create a clean wound bed conducive to healing and to protect the wound and surrounding tissue from further injury. Other considerations for choosing a wound dressing in home care include cost, availability, required frequency of dressing changes, and ease of use.[1][2][3] (See *Wound dressing selection*.)

WOUND DRESSING SELECTION

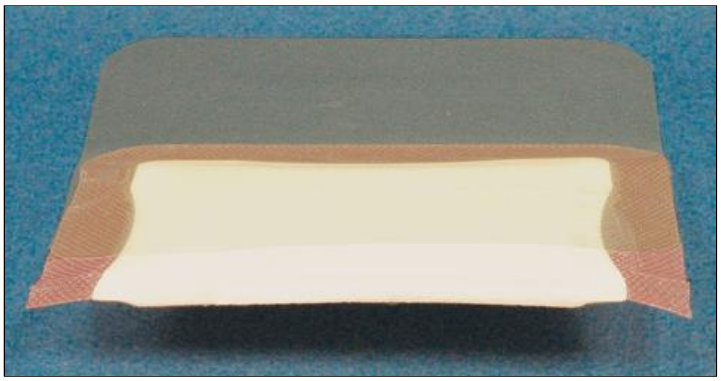
Selecting a wound dressing is based primarily on wound moisture, but other factors, including the presence of tunneling or undermining, the presence of necrotic tissue or infection, and the condition of the skin surrounding the wound, need consideration. Major categories of wound dressings include alginates, foams, hydrocolloids, hydrogels, and transparent films. Many are available in multiple forms (including sheets; impregnated gauze, ribbons, or ropes; powders; granules; pastes; gels; and sprays) and can incorporate an antimicrobial agent (such as ionic silver, cadexomer iodine, or polyhexamethylene biguanide). Specialized dressings, such as nonadherent contact layers for wound bed protection, collagen dressings for poorly healing wounds, and composite dressings that combine different materials for different wound care functions, also are available.[2][4]

Alginates

Alginate dressings are conformable, absorbent nonwoven fiber dressings made from brown seaweed containing calcium salts (shown below). When an alginate dressing comes into contact with the wound drainage, a gel forms to maintain a moist wound bed. Alginate dressings are used for wounds with heavy exudate, tunneling and undermining, or minor bleeding. They also facilitate autolytic debridement. They shouldn't be used for dry, eschar-covered, or heavily bleeding wounds or for third-degree burns. These dressings may dry out, leaving adherent fibers on the wound bed; have an unpleasant odor; and require a secondary dressing.[2][4]

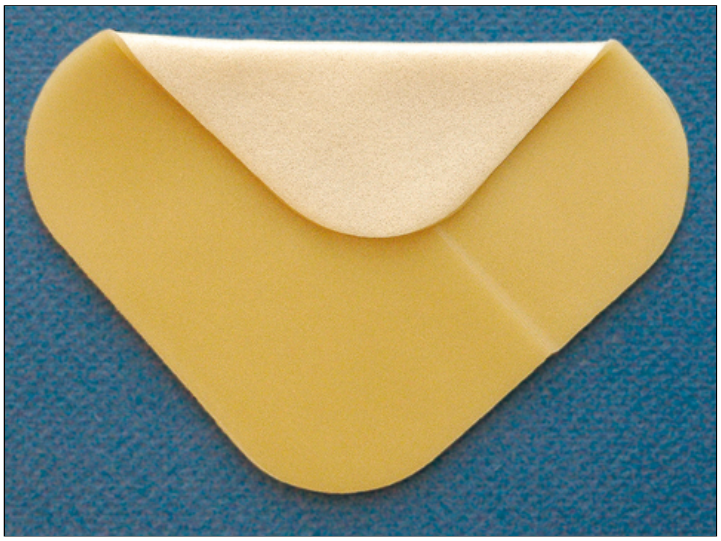
Foams

Foam dressings are conformable, absorbent sponge-like dressings made from a polyurethane base with a heat- and pressure-modified wound contact layer that absorbs exudate (shown below). They are used for wounds with moderate exudate or tunneling and undermining. Foam dressings also provide thermal insulation and protection over bony surfaces and under compression wraps. They shouldn't be used for dry, eschar-covered, or heavily exudative wounds.[2]



Hydrocolloids

Hydrocolloid dressings are conformable, self-adherent occlusive or semiocclusive dressings made of gelatin, pectin, and carboxymethylcellulose (shown below). Particles in the dressing react with exudate in the wound and form a soft gel over the wound. Hydrocolloid dressings are used for wounds with light to moderate exudate. They may be used as a primary or secondary dressing and provide protection over bony surfaces and under compression wraps. They shouldn't be used for heavily exudative wounds, for wounds with tunneling or undermining, for infected wounds, or on skin tears or otherwise fragile skin. Their translucency allows for visual assessment of the amount of fluid under the dressing.[2]



Hydrogels

Hydrogel dressings (shown below) are made of polymer structures of water (or glycerin) to provide a moist environment and soften necrotic tissue for removal. They also reduce the temperature of the wound bed for a cooling effect. Hydrogel dressings are used for dry, eschar-covered wounds with minimal exudate. They shouldn't be used for heavily exudative wounds. Because they are water-based, these dressings can macerate surrounding skin. Some hydrogel dressings require a secondary dressing.[2]

Transparent films

Transparent film dressings are nonabsorbent, thin, polyurethane membranes coated with an adhesive that allows them to adhere to wound margins without sticking to the actual wound. Although they are permeable to gas and moisture, they provide a barrier against larger particles (such as contaminants, fluid, and bacteria) and promote a moist environment. Transparent film dressings are used for dry wounds with minimal exudate. They shouldn't be used for heavily exudative wounds or on skin tears or otherwise fragile skin. Although fluid under the dressing can facilitate autolytic debridement, excessive fluid that seeps out from under the dressing may macerate surrounding skin. They commonly are used as a secondary dressing. Their transparency allows for visual inspection of the wound without disrupting the dressing.[2]

Equipment

- Fluid-impermeable pads
- Sealable waterproof trash bag
- Gloves
- Gauze pads
- Prescribed wound cleanser (normal saline solution or another prescribed cleanser)
- Prescribed primary dressing
- Scissors
- Tape specially formulated for fragile skin
- Written educational materials
- Optional: prescribed pain medication, gown, mask with face shield or mask and goggles, disposable wound measurement device, wound irrigation device, protective skin barrier, prescribed topical wound treatments, cotton-tipped applicator, tongue blade, secondary dressing supplies, self-adhesive straps, gauze wrapping, tubular stockinette, spray cleanser

Preparation of Equipment

Inspect all equipment and supplies. If a product is expired, is defective, or has compromised integrity, remove it from patient use, label it as expired or defective, and report the expiration or defect as directed by your agency. Follow the manufacturer's recommendations and your agency's guidelines regarding the shelf life of solutions after they have been opened. Ensure that the wound cleanser is at room temperature or slightly warmer *to reduce pain associated with wound cleaning*.[5]

Implementation

- Review referral information, care plan, and prior home visit documentation, if available. Note the type of wound, prior assessment data, and past and current interventions used for the patient's wound and their effectiveness.[2] [6]
- Verify the practitioner’s order.[7] [8] [9] [10]
- Gather and prepare the necessary equipment and supplies.
- Introduce yourself, and state the purpose of your home visit.
- Confirm the patient's identity using at least two patient identifiers.[11]
- Ask the patient and family (if appropriate) about any recent changes in the patient's health status, including practitioner visits, tests, and changes in medications, diet, or activity level.[6]
- Perform hand hygiene.[12] [13] [14] [15] [16]
- Explain the procedure to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation*.[17] [18] [19] [20]
- Screen for and assess the patient’s pain using agency-defined criteria that are consistent with the patient’s age, condition, and ability to understand.[21]
- Treat the patient’s pain, as needed and ordered, using nonpharmacologic, pharmacologic, or a combination of approaches. Base the treatment plan on evidence-based practices and the patient’s clinical condition, past medical history, and pain management goals.[21]
- *Because wound care can be painful,* ensure that the patient is premedicated with the prescribed pain medication.[2] [22] If not, administer pain medication as needed and prescribed following safe medication administration practices,[23] and allow adequate time for the medication to take effect.
- Organize the equipment and supplies on a clean surface. Place a fluid-impermeable pad between the environment and the equipment and supplies, if necessary.[12] [24] Arrange the equipment and supplies according to the order of use *to avoid cross-contamination while performing wound care*.[25]
- Place a sealable waterproof trash bag within reach *to discard soiled dressings*.
- Perform hand hygiene.[12] [13] [14] [15] [16]
- Put on gloves and, as needed, other personal protective equipment *to comply with standard precautions*.[12] [26] [27] [28] [29]

- Assist the patient to a position that maximizes comfort while allowing easy access to the wound. Expose only the wound and surrounding area *to maintain the patient's warmth and privacy*.[30]
- Place a fluid-impermeable pad under the wound *to prevent soiling*.
- Instruct the patient to call a time-out to halt wound cleaning and dressing temporarily if the pain becomes intolerable.[2]
- Remove the old dressing carefully by pulling it gently on a horizontal plane away from the patient's skin while stabilizing the skin simultaneously *to avoid tearing it*.[31] If necessary, loosen the old dressing using a small amount of normal saline solution *to decrease the pain of removal and trauma to the skin and wound*.
- Inspect the soiled dressing, and note the type and amount of drainage.
- Discard the soiled dressing in the sealable waterproof trash bag.[28]
- Remove and discard your soiled gloves.[28]
- Perform hand hygiene.[12] [13] [14] [15] [16]
- Put on new gloves.[12] [26] [27] [28] [29]
- Assess the wound, wound edges, and surrounding tissue. Note the wound's type, anatomic location, shape, size, and color, as well as the presence of necrotic tissue (eschar or slough), odor, and moisture. As appropriate, measure the wound using a disposable wound measurement device *to determine if the wound is improving, worsening, or remaining stable*.[2] [3] [22] (See the "Wound assessment, home care" procedure.)
- Clean the wound with normal saline solution or another prescribed wound cleanser *to remove exudate, crusts, and old topical medication*.
  - To clean the wound mechanically, start at the center of the wound and clean the wound gently with a moistened gauze pad, working outward toward the edges in a circular pattern.[5]
  - Clean at least 1 inch beyond the edge of the area to be dressed, using a fresh gauze pad for each circle.[5] Don't return to the center of the wound with the gauze pad after cleaning it *to avoid recontaminating the wound*. Remove loose tissue with the gauze pad.
  - Don't press hard or scrub the wound, *because doing so will further damage the tissue*.
  - Alternatively, apply spray cleanser directly to the wound bed, aiming the spray at the base and sides of the wound while holding the spray bottle about 1 inch from the wound bed. Use a clean gauze pad to absorb excess moisture.[5]
  - If adherent material is present in the wound, irrigate the wound using a wound irrigation device. (See the "Wound irrigation, home care" procedure.)
- Discard the soiled gauze in the sealable waterproof trash bag.[28]
- Remove and discard your soiled gloves.[28]
- Perform hand hygiene.[12] [13] [14] [15] [16]
- Put on new gloves.[12] [26] [27] [28] [29]
- Pat the surrounding skin dry with a gauze pad *to prevent maceration*.
- Apply a protective skin barrier as needed and ordered to the skin surrounding the wound that will come into contact with drainage, adhesive tape, dressings, or devices following the manufacturer's instructions. Allow it to dry for the length of time specified by the manufacturer.[22] [32]
- Apply topical wound treatments to the wound bed using a cotton-tipped applicator or tongue blade as prescribed following safe medication administration practices.[23]
- If the wound has dead space due to tunneling or undermining, place an appropriate conformable secondary dressing material (such as foam or alginate) gently between opposing wound surfaces as indicated *to separate surfaces within the wound*. Don't pack the material tightly t*o avoid damaging the tissue*.
- Apply the prescribed primary dressing to the wound following the manufacturer's instructions.
  - If the dressing comes in the form of a sheet, choose an appropriately sized sheet for the wound or cut one to overlap the wound by 1" to 2" (2.5 cm to 5 cm) depending on the manufacturer's instructions. Then, remove the protective film from the dressing and lay the sheet over the wound, smoothing out any wrinkles but without stretching the sheet. Press gently but firmly on the edges of the dressing *to promote adherence*.
  - If the dressing comes in another form, apply the dressing to the wound only, avoiding the intact skin around the wound. Cut gauze, ropes, or ribbons to the appropriate size for the wound. Apply the amount prescribed or recommended by the manufacturer *because some dressings need to fill the dead space in the wound while others should cover just the surface of the wound bed*.

- Secure the primary dressing as needed, and cover it with a secondary dressing as appropriate. Use tape specially formulated for fragile skin *to prevent skin stripping and tearing during removal*.[33] Alternatively, use self-adhesive straps, gauze wrapping, or a tubular stockinette *to hold the dressing in place*.
- Seal the waterproof trash bag, and discard used supplies in appropriate receptacles.[27] [28] [34] [35]
- Remove and discard your gloves and other personal protective equipment, if worn.[28]
- Perform hand hygiene.[12] [13] [14] [15] [16]
- Reassess and respond to the patient's pain by evaluating the response to treatment and progress toward pain management goals. Assess for adverse reactions and risk factors for adverse events that may result from treatment.[21]
- Review progress toward the goals in the patient's care plan with the patient and family as appropriate.[6] [36]
- Arrange for the next home visit as appropriate, and ensure that the patient and family have adequate supplies for self-care until then.
- Provide and review written educational materials, the home visit schedule, and contact information should concerns arise between home visits.[37] [38] [39] [40]
- Report changes in the patient's condition and progress toward goals to the practitioner as appropriate.[41] [42] [43] [44]
- Coordinate care with other services (such as a wound, ostomy, and continence nurse) as appropriate.[45] [46] [47] [48]
- Document the procedure.[49] [50] [51] [52]

Special Considerations

- Saline-moistened gauze or petroleum-impregnated gauze can be used temporarily (with a practitioner's order) to provide a moist environment until a wound care specialist can appraise the wound and recommend more specific treatment. These dressings aren't recommended as long-term therapy *because they don't provide a moisture-balanced environment, they may dry out and cause tissue reinjury upon removal, or (in the case of exudative wounds) they may cause maceration of the surrounding skin because they aren't sufficiently absorbent*.[1] [53]
- Enzymatic debriders can't be used concomitantly with wound dressings that contain metals (such as silver or zinc) or iodine *because these agents may inactivate enzymes*.[2]
- Sterile technique may be required to perform wound care in select clinical situations, such as surgical wounds that have dehisced or in patients who are at increased risk for infection.[25] [54]

Patient Teaching

Teach the patient and family about the normal healing process. Discuss the causes of wounds, as well as the strategies used to manage them, including pain management, skin care, repositioning, and adequate nutrition and hydration. If the patient or family will be performing wound care independently, have the patient or family perform a return demonstration or teach-back as appropriate. Instruct the patient and family to notify the practitioner if wound symptoms (such as pain, drainage, odor) worsen despite treatment or if signs of a systemic infection (such as fever and chills) develop.[55]

Complications

Wound dressing application may cause pain, tissue injury, bleeding, and infection.

Documentation

Record the date and time of the wound dressing application. Document your assessment of the wound before and after care, as well as the patient's pain assessments. Document the patient's tolerance of the procedure and any interventions implemented, including medications administered. If you contacted the practitioner, record the name of the practitioner notified, the date and time of notification, the information conveyed, and any information received. Document teaching provided to the patient and family (if applicable), their understanding of that teaching, and any need for follow-up teaching.

This procedure has been co-developed and reviewed by the National Association for Home Care & Hospice.

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(Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions)

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Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is from *Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice* (2nd ed.) by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt.

Level I:	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
Level II:	Evidence obtained from well-designed RCTs
Level III:	Evidence obtained from well-designed controlled trials without randomization
Level IV:	Evidence from well-designed case-control and cohort studies
Level V:	Evidence from systematic reviews of descriptive and qualitative studies
Level VI:	Evidence from single descriptive or qualitative studies
Level VII:	Evidence from the opinion of authorities and/or reports of expert committees

Modified from Guyatt, G. & Rennie, D. (2002). Users' Guides to the Medical Literature. Chicago, IL: American Medical Association; Harris, R.P., Hefland, M., Woolf, S.H., Lohr, K.N., Mulrow, C.D., Teutsch, S.M., et al. (2001). Current Methods of the U.S. Preventive Services Task Force: A Review of the Process. American Journal of Preventive Medicine, 20, 21-35.