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Types of Wound Dressings:

FEATURES, INDICATIONS AND CONTRAINDICATIONS

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Wound Dressings 101

Considerations in Dressing Selection

When treating a wound—whether chronic or acute—health care professionals have many choices for dressings; but which dressing will best help to facilitate rapid healing in the patient? Different dressings are meant for different types of wounds, and it is not always easy to select the correct dressing.

When choosing a dressing, health care professionals should always keep in mind their individual patient's needs, history, and environment. What worked for one patient may not work for another; perhaps a collagen dressing worked well for a younger patient with a full-thickness wound, but the same dressing could cause damage to the more fragile skin of an older adult patient with a similar wound. It is important to consider all aspects of a dressing before selecting it.

Note: always refer to manufacturer information for Warnings and Precautions for a specific product. The information provided herein is intended to provide an overview of the various dressings categories; specific products may have different indications, contraindications, or warnings.

Alginate Dressings

Alginate dressings are highly absorptive, non-occlusive dressings made of soft, non-woven calcium alginate fibers derived from brown seaweed or kelp. Alginate dressings are available as a primary dressing in pad or rope form. These dressings gel on contact with wound exudate, thus allowing for a moist wound environment and promoting autolytic debridement.

Features

Alginate dressings feature the following general performance properties and attributes:

- Atraumatic removal
- Non-occlusive
- Can be cut to fit
- Can be layered for more absorption
- Can absorb up to 20 times their weight in exudate

Indications

Alginate dressings are indicated for use as a primary dressing in the treatment of moderately to heavily exuding partial-thickness draining wounds such as stage 2 pressure ulcers, full-thickness draining wounds such as stage 3-4 pressure ulcers, dermal wounds, surgical incisions, dehisced wounds, tunneling wounds, sinus tracts, and donor sites. Alginates that contain silver can be used to manage infected wounds. Alginates can also provide hemostasis for postoperative wounds with minimal bleeding.

Contraindications

Alginate dressings are contraindicated for use on dry eschar, for third-degree burns, for surgical implantation, or for wounds with heavy bleeding.

Warnings

- May dehydrate wound bed
- Not appropriate for dry wounds
- Because of low tensile strength, avoid packing in narrow, deep sinuses
- May require secondary dressing to secure
- May be malodorous during dressing change
- May leave fibers in wound bed if drainage is insufficient to gel the product fully

Antimicrobial Dressings

Antimicrobial dressings deliver sustained release of antimicrobial agents to the wound bed that allow for a lower concentration of the agent and reduce the potential toxicity to host cells. These dressings typically obtain their antimicrobial activity from silver, iodine, polyhexamethylene biguanide (PHMB), chlorhexidine gluconate (CHG), dialkylcarbomoyl chloride (DACC), or other antimicrobial agents. They come in a variety of delivery systems, shapes, and sizes.

Silver dressings specifically are available in foams, hydrocolloids, alginates, gelling fiber, contact layers, and activated charcoal cloth dressings.

Features

Antimicrobial dressings feature the following general performance properties and attributes:

- Provide a broad range of antimicrobial or antibacterial activity
- Reduce or prevent infection
- Control bacteria bioburden

Indications

Antimicrobial dressings are indicated for use as either a primary or secondary dressing in the treatment of draining, exuding, infected, and non-healing wounds where protection from bacterial contamination is desired. This can include both acute and chronic wounds, including burns, surgical wounds, diabetic foot ulcers, pressure ulcers, and vascular ulcers. The amount of exudate that can be properly managed depends on the specific properties of the dressing. Certain dressings can be used under compression.

Contraindications

Antimicrobial dressings are contraindicated for use on patients with known sensitivities to any of the product components. Silver dressings cannot be worn during magnetic resonance imaging (MRI) procedures.

Warnings

- Dressings containing metallic silver may cause staining on wound and intact skin
- May cause stinging or sensitization

Collagen Dressings

Collagen dressings are sheets, pads, particles, powders, and gels derived from bovine, equine, porcine, or avian sources. These dressings encourage the deposition and organization of newly formed collagen fibers and granulation tissue in the wound bed.

Features

Collagen dressings feature the following general performance properties and attributes:

- Absorbent
- Maintain moist wound healing environment
- May be used with topical agents
- Conformable
- Non-adherent
- Easy to apply and remove

Indications

Collagen dressings are indicated for use as a primary dressing in the treatment of partial- and full-thickness wounds such as skin grafts, donor sites, surgical wounds, tunneling wounds, infected and non-infected wounds, and wounds with minimal to heavy exudate (depending on the form of the dressing).

Contraindications

Collagen dressings are generally contraindicated for dry wounds and third-degree (full-thickness) burns and in patients with sensitivities to collagen or bovine products.

Warnings

- Require a secondary dressing
- Not recommended for necrotic wounds
- May require rehydration on removal

Composite Dressings

Composite dressings are wound covers that combine physically distinct components into a single product to provide multiple functions, such as a bacterial barrier, absorption, and adhesion. Usually, they are comprised of multiple layers and incorporate a semi- or non-adherent pad that covers the wound. These dressings may also include an adhesive border of non-woven fabric tape or transparent film.

Features

Composite dressings feature the following general performance properties and attributes:

- Provide multiple functions in one dressing
- Moldable
- Can be used on infected wounds
- Easy to apply and remove
- Moisture vapor permeable
- Promote autolytic debridement
- Available in a variety of shapes and sizes
- May be used with topical medications

Indications

Composite dressings are indicated for use as either a primary or secondary dressing in the treatment of minimally to heavily draining partial- and full-thickness wounds such as stage 2-4 pressure ulcers, dermal ulcers, and surgical incisions.

Contraindications

Some composite dressings are contraindicated for use on stage 4 pressure ulcers.

Not all composites promote a moist wound environment, and some may dry out the wound bed. Always refer to manufacturer information for Warnings and Precautions for a specific product.

Warnings

- Adhesives may limit the use of these dressings on fragile skin

Contact Layer Dressings

Contact layer dressings are thin, non-adherent sheets made of woven or perforated material that can be placed on an open wound bed to protect tissue from direct contact with other agents or dressings applied to the wound. These dressings provide interface between the wound and the dressing, thus protecting fragile healing tissue and preventing new epithelium from sticking to the dressing.

Contact layer dressings can also be used as a liner for deep wounds that need packing to ensure removal of all packing material. Contact layers conform to the shape of the wound and are porous to allow exudate to pass through for absorption by an overlying, secondary dressing.

Features

Contact layer dressings feature the following general performance properties and attributes:

- Wick exudate away from the wound
- May be used with topical medications
- Protect wound base from trauma during dressing change
- Available in pads, sheets and rolls

Indications

Contact layer dressings are indicated for use as primary dressings on partial- and full-thickness wounds with minimal to heavy exudate, donor sites, and split-thickness skin grafts.

Contraindications

Contact layer dressings are not recommended for stage 1 pressure injuries, third-degree burns, tunneling wounds, clean or debriding wounds, shallow wounds, dry wounds, wounds covered with eschar, or wounds with viscous exudate.

- Require a secondary dressing
- Not intended to be changed with every dressing change

Foam Dressings

Foam dressings are sheets and other shapes of foamed polymer solutions (most commonly polyurethane) with small, open cells capable of holding fluids. They may be impregnated or layered in combination with other materials. The absorption capability depends on the thickness and composition of the specific dressing. The area in contact with the wound surface is non-adherent for easy, atraumatic removal.

Foam dressings are available in pad, sheet, strip, and cavity dressing form, as well as with an adhesive border and/or a transparent film coating that acts as a bacterial barrier.

Features

Foam dressings feature the following general performance properties and attributes:

- Help maintain moist wound environment
- Protect wound and periwound area against trauma
- Easy to apply and remove
- May be used under compression
- Conformable
- Can be used with topical agents or enzymatic debridement methods
- Non-linting
- Non-adherent
- Allow for atraumatic removal
- Semi-permeable
- Provide thermal insulation for the wound
- Wear time of one to seven days depending on amount of exudate

Indications

Foam dressings are indicated for use as primary or secondary dressings for minimally to heavily exudating partial- and full-thickness wounds such as stage 2-4 pressure ulcers, surgical wounds, and dermal ulcers. Depending on the product, foam dressings may be used on infected wounds, tunneling wounds, or cavity wounds. Foam dressings can also be used to protect intact skin over bony prominences or friction areas.

Contraindications

Contraindications vary by product. Foam dressings are generally contraindicated for use on third-degree burns and dry or non-draining wounds unless used for prevention or protection.

Warnings

- May macerate periwound skin if saturated
- Not effective on wounds with dry eschar
- May require secondary dressing

Gauze and Non-Woven Dressings

Gauze and non-woven wound dressings are dry woven or non-woven sponges and wraps with varying degrees of absorbency, based on design. Fabric composition may include cotton, polyester, or rayon. They are available sterile or non-sterile in bulk and with or without an adhesive border. They are used for cleansing, packing, and covering a variety of wounds.

Features

Gauze and non-woven dressings feature the following general performance properties and attributes:

- Absorbent
- Available in a variety of shapes, sizes and formats
- Flexible
- Moisture vapor permeable
- Can be cut to fit
- Compatible with topical agents

Indications

Gauze and non-woven dressings are indicated for use as a primary or secondary dressing over light to moderately draining wounds.

Contraindications

Gauze or non-woven dressings may cause trauma to wound tissue upon removal. Moistening adherent dressings during removal will help prevent damage to fragile tissue.

Warnings

- May leave residue in the wound bed
- Non-occlusive
- May injure fragile skin or granulating tissue on removal

Gelling Fiber Dressings

Gelling fiber dressings are absorbent wound covers that help manage drainage and removal of dead, damaged, and infected tissue from the wound. Gelling fibers are typically composed of sodium carboxymethylcellulose (CMC), strengthening cellulose fibers, and other blended superabsorbent materials. As wound fluid is absorbed into the dressing, a gel forms, and this assists in maintaining a moist environment for optimal wound healing and the formation of granulation tissue. Gelling fiber dressings can retain and control exudate levels to reduce the risk of periwound maceration and can also conform to various wound shapes and be removed in one piece.

Features

Gelling fiber dressings feature the following general performance properties and attributes:

- Flexible
- Remove harmful bacteria from wound
- Respond to wound fluid levels by forming cohesive gel
- Available in various sizes
- Retain and control exudate levels

Indications

Gelling fiber dressings are indicated for chronic, acute, and partial- or full-thickness wounds, as well as various ulcers, pressure injuries, and burns.

Contraindications

Do not use gelling fiber dressings if you are sensitive to the dressing or its components or have had an allergic reaction to the dressing.

Warnings

If the wound continues to grow larger after the first few dressing changes, consult a health care professional. The wound should be inspected during dressing changes. Consult a health care professional if you see:

- Signs of infection (increased pain, increased redness, wound drainage)
- Bleeding
- A change in wound color and/or odor
- Irritation (increased redness and/or inflammation)
- Maceration (skin whitening)
- Hypergranulation (excessive tissue formation)
- Sensitivity (allergic reaction)
- No signs of healing

Hydrocolloid Dressings

Hydrocolloid wound dressings are occlusive or semi-occlusive dressings made of gelatin, pectin, polysaccharides, or sodium carboxymethylcellulose (CMC). Hydrocolloid dressings are available in paste, powder, gel, or sheet/wafer forms with a polyurethane or film outer layer (pastes and gels require secondary dressing). These dressings gel on contact with wound exudate, thus providing a moist wound healing environment and promoting autolytic debridement.

Features

Hydrocolloid dressings feature the following general performance properties and attributes:

- Non-adherent to moist wound base
- Water-resistant
- Impermeable to bacteria, gases, water, water vapor, and other external contaminants
- Self-adherent
- Moldable
- Can be used under compression products
- Maintain moisture by gelling on contact with exudate
- Designed to be worn for one to seven days
- Can be cut to fit

Indications

Hydrocolloids are indicated for use as either a primary or secondary dressing in the treatment of lightly to moderately exuding partial- and full-thickness wounds such as dermal ulcers, skin tears, lacerations, pressure injuries, or wounds with necrotic tissue or slough.

Contraindications

Hydrocolloid dressings are generally contraindicated for burns or dry wounds, wounds with heavy exudate, tunneling wounds or sinus tracts, infected wounds, wounds with exposed tendon or bone, or wounds with fragile periwound skin. Some hydrocolloid dressings are contraindicated for use on full-thickness wounds.

Warnings

- May leave residue in wound bed
- May encourage hypertrophic granulation
- May cause maceration of periwound skin
- May increase the risk for anaerobic infection
- Limit gas exchange between wound bed and environment
- May injure fragile skin on removal
- May cause odor on dressing change, which should not be confused with a sign of infection

Hydrogel Dressings: Amorphous, Impregnated, Sheets

Amorphous hydrogels are glycerin- and water-based products primarily manufactured for the purpose of wound hydration. Impregnated hydrogel wound dressings are gauzes and non-woven sponges, ropes, and strips saturated with an amorphous hydrogel. Hydrogel wound dressing sheets are three-dimensional networks of cross-linked hydrophilic polymers that are insoluble in water and interact with aqueous solutions by swelling. These dressings help maintain a moist wound healing environment, promote granulation and epithelialization, and facilitate autolytic debridement. Because of the high water content of hydrogels, they typically cannot absorb large amounts of exudate.

Features

Hydrogel dressings feature the following general performance properties and attributes:

- Cooling action soothes and reduces pain
- Non-adherent
- Rehydrate the wound bed
- Fill in dead space
- Easy application and removal
- Can be used on infected wounds
- Facilitate autolytic debridement
- Atraumatic removal
- Can be used with topical medications

Indications

Hydrogels are indicated for use as a primary dressing in the treatment of minimally draining partial- and full-thickness wounds such as stage 2-4 pressure ulcers, deep wounds, minor burns, infected wounds, dermal ulcers, skin tears, donor sites, radiation dermatitis, and wounds with necrosis or slough.

Contraindications

Hydrogel dressings are contraindicated for use on wounds with heavy exudate.

Warnings

- May leave residue in wound bed
- May encourage hypertrophic granulation
- May cause maceration of periwound skin
- May increase the risk for anaerobic infection
- Limit gas exchange between wound bed and environment
- May cause odor on dressing change, which should not be confused with a sign of infection

Impregnated Dressings

Impregnated wound dressings are gauzes and non-woven sponges, ropes, and strips saturated with a solution, an emulsion, oil, or some other agent or compound. The most commonly used agents include saline, oil, zinc salts, petrolatum, xeroform, and scarlet red.

Features

Impregnated dressings feature the following general performance properties and attributes:

- Minimally adherent to wound bed
- Promote moist wound healing environment

Indications

Indications vary based on the composition of the impregnated dressing.

Contraindications

Contraindications vary based on the composition of the impregnated dressing.

Warnings

- May adhere to wound bed or shed fibers
- Usually require a secondary dressing
- May cause periwound maceration

Medical Grade Honey Dressings

Medical grade honey dressings contain active *Leptospermum* honey, or Manuka honey, as a main component. These dressings help to prepare the wound bed and promote an optimal healing environment by reducing edema, lowering wound pH, and promoting autolytic debridement of slough and eschar.

Features

Medical grade honey dressing products feature the following general performances properties and attributes:

- High sugar levels in the honey result in osmotic pressure, promoting autolytic debridement
- Maintain a moist wound environment
- Help reduce wound odor
- Multiple formulations available to handle differing levels of exudate

Indications

Medical grade honey dressings are indicated for use on partial- and full-thickness wounds, acute or chronic wounds such as venous insufficiency ulcers, pressure ulcers (stages 2-4), diabetic foot ulcers, first- and second-degree burns (superficial and partial-thickness), donor sites, traumatic wounds, surgical wounds, fungating wounds, superficial wounds, and malodorous wounds.

Warnings

- May cause a slight stinging sensation
- Always refer to manufacturer's Instructions for Use

Silicone Gel Sheets

Silicone gel sheets are soft wound covers composed of cross-linked polymers reinforced with or bonded to mesh or fabric. These dressings can be used in the treatment of hypertrophic and keloid scars to improve appearance, as well as to help prevent the formation of these kinds of scars.

Hypertrophic scars can be caused by poorly designed surgical wound closure, too much tension applied to a surgical wound closure, wound infection, or partial- and full-thickness burns. Hypertrophic scars tend to be limited to the original margins of the wound. Keloid scars result from an inherited metabolic alteration in collagen and often extend beyond the original margins of the wound.

Features

Silicone gel sheets feature the following general performance properties and attributes:

- Conformable
- Some silicone gel sheets may be cut to size

Indications

Silicone gel sheets are indicated to prevent or improve the appearance of old and new hypertrophic and keloid scars.

Contraindications

Silicone gel sheets are contraindicated for use on patients with a silicone allergy or sensitivity.

Warnings

- May require a secondary dressing
- Not for use on unhealed, open wounds
- May cause maceration or a rash

Specialty Absorptive and Super Absorbent Dressings

Specialty absorptive and super absorbent dressings are multilayered wound covers that provide either a semi-adherent quality or a non-adherent layer, combined with highly absorptive layers of fibers, such as cellulose, cotton, or rayon. These dressings are designed to minimize adherence to the wound and manage exudate.

Features

Specialty absorptive dressings feature the following general performance properties and attributes:

- Easy to remove
- Highly absorptive (moderate to heavy drainage)

Indications

Specialty absorptive dressings are indicated for use as a primary or secondary dressing to manage partial- and full-thickness wounds such as surgical incisions, lacerations, abrasions, burns, donor or skin graft sites, or any exudating wound.

Contraindications

No known contraindications exist.

Warnings

- Specialty absorptive dressings may not be appropriate for use over an undermined wound

Transparent Film Dressings

Transparent film dressings are polymer membranes of varying thickness coated on one side with an adhesive. They are impermeable to liquid, water, and bacteria but permeable to moisture vapor and atmospheric gases. The transparency of the dressing allows visualization of the wound. Available in a wide variety of sizes, both sterile and in bulk.

Features

Transparent film dressings feature the following general performance properties and attributes:

- Conformable
- Waterproof
- Impermeable to bacteria and contaminants
- Allow for moisture vapor and oxygen transmission
- Maintain moist wound environment
- Promote autolytic debridement
- Allow for wound inspection
- Prevent or reduce friction
- Variety of thicknesses and sizes

Indications

Transparent films are indicated for use as primary or secondary dressings for wounds with little to no exudate such as stage 1 pressure injuries and stage 2 pressure ulcers, partial-thickness wounds, donor sites, and full-thickness wounds with necrotic tissue or slough.

Contraindications

Transparent film dressings are not recommended for use on wounds with moderate to heavy exudate.

Warnings

- Not recommended for use on fragile or friable skin
- May become dislodged in high-friction areas
- Require intact periwound skin for adhesion
- Not for use on infected wounds
- May cause maceration

Wound Fillers

Wound fillers are beads, creams, foams, gels, ointments, pads, pastes, pillows, powders, strands, or other formulations that are non-adherent. Wound fillers function to maintain a moist environment and manage exudate. They may include a time-released antimicrobial, and their absorption capability depends on the composition of the specific product.

Features

Wound filler dressings feature the following general performance properties and attributes:

- Fill in dead space
- Easy application and removal
- Facilitate autolytic debridement
- May be absorptive

Indications

Wound fillers are indicated for use as a primary dressing in the treatment of minimally to moderately exuding partial- and full-thickness wounds, infected wounds, and deep wounds that require packing to fill dead space.

Contraindications

Wound fillers are typically contraindicated for use on wounds with little to no exudate. They are contraindicated for use on third-degree (full-thickness) burns and dry wounds.

Warnings

- Require a secondary dressing

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