BC Cancer Agency
CARE + RESEARCH
An agency of the Provincial Health Services Authority

# Symptom Management Guidelines: RADIATION DERMATITIS

## Definition

Radiation dermatitis is a common side effect of radical ionizing radiation treatment. The pathophysiology of a radiation skin reaction is a combination of radiation injury and the subsequent inflammatory response and can occur at both the entrance and exit site of the irradiation. Ionizing radiation damages the mitotic ability of stem cells within the basal layer preventing the process of repopulation and weakening the integrity of the skin. Reactions are evident one to four weeks after beginning treatment and can persist for several weeks post treatment.

## Factors Contributing to the Severity of Radiation Dermatitis

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| **Type of Radiation and Energy** | • A source of radiation used in cancer treatment is a linear accelerator. This high voltage machine generates ionizing radiation from electricity to deliver external beam radiation therapy in the form of photons or electrons<br>• Radiation treatments delivered by external beam vary in depth depending on the energy of the beam produced<br>• Photons penetrate more deeply with increasing energy and also partially spare the skin from the effect of radiation; while electrons have shallow depth and high skin dose |
| **Treatment Technique** | • There is evidence to suggest that specific treatment techniques such as Intensity Modulated Radiation Therapy (IMRT) are associated with a decreased severity of acute radiation dermatitis |
| **Location of the Treatment Field** | • The radiation dermatitis may be more severe depending on the location of the treatment field i.e. sites where two skin surfaces are in contact such as the breast or buttocks |
| **Volume of Treated Tissue** | • The total volume of the area treated is considered when the dose is prescribed because larger areas of body surface will be irradiated which may result in increased skin toxicity |
| **Dose, Time and Fractionation Parameters** | • Radiation treatments are prescribed in units of measurement known as Gy (Gray) or cGy (centiGray) with 1 Gy equaling 100 cGy<br>• In order to manage the toxicities associated with radiation therapy, the total dose is divided into multiple daily doses called fractions |
| **Chemotherapeutic Agents** | • The effects of ionizing radiation therapy are enhanced by specific radiosensitizers such as doxorubicin, 5-fluorouracil and bleomycin |
| **Co-existing Chronic Illnesses** | • Coexisting chronic illnesses such as anemia, diabetes mellitus and suppression of the immune system may contribute to the severity of the radiation dermatitis |
| **Tobacco Use** | • Smoking limits the oxygen carrying capacity of hemoglobin. Elevated carboxyhemoglobin levels have been associated with changes to the epithelium and increased platelet stickiness. Nicotine affects macrophage activity and reduces epithelialization |
| **Age** | • Vasculoconnective damage caused by ionizing radiation, when combined with the degenerative changes to the epidermis and dermis, leads to an exacerbation of radiation dermatitis as age increases |
| **Nutritional Status** | • Malignancy alone can compromise nutritional status. Patients who are poorly nourished may be at risk for poor wound healing |

## Consequences

Radiation dermatitis can progress from erythema to dry desquamation to moist desquamation and rarely to ulceration. Additionally, with current technology and treatment delivery, necrosis is now also a rare occurrence. Patients may complain of tenderness, discomfort, pain or burning in the treated skin. Some patients note a change in activities of daily living as a consequence of radiation dermatitis.

# Focused Health Assessment

## GENERAL ASSESSMENT

### Contact & General Information

Physician name - oncologist, general practitioner (GP)

- Pharmacy (if applicable) - name and contact information
- Home health care (if applicable) – name and contact information

### Consider Contributing Factors

- Cancer diagnosis (site)
- Cancer treatment: date of last treatment/s, concurrent treatments, volume of tissue treated, technique, type of radiation and energy, location of treatment field, volume of tissue treated, dose, time and fractionation
- Co-morbidities
- Nutritional status
- Tobacco use
- Recent lab or diagnostic reports

## SYMPTOM ASSESSMENT

### Normal

- What is the condition of your skin normally?
- What are your normal hygiene practices?

### Onset

- When did the changes in your skin begin?

### Provoking / Palliating

- What makes it feel better or worse?

### Quality (in the last 24 hours)

- Do you have any pain, redness, dry or scaling skin, blisters or drainage?
- Do you have any swelling?

### Region

- What areas are affected?

### Severity / Other Symptoms

- Since your last visit, how would you rate the discomfort associated with the dermatitis? between 0-10? What is it now? At worst? At best? On average?
- Have you been experiencing any other symptoms: fever, discharge, bleeding

### Treatment

- When was your last cancer treatment (radiation or chemotherapy)?
- How have you been managing the radiation dermatitis? (cream, ointments, dressings)
- Are you currently using any medications? How effective are they? Any side effects?

### Understanding / Impact on You

- Is your dermatitis and treatment impacting your activities of daily living (ADL)?
- Do you require any support to (family, home care nursing) complete your skin care routine?
- Are you having any difficulty sleeping, eating, drinking?

### Value

- What is your comfort goal or acceptable level for this symptom?

## PHYSICAL ASSESSMENT

### Vital Signs

- As clinically indicated

### Assess dermatitis

- Location
- Colour
- Size of area
- Wound base (if present)
- Drainage (if present)
- Signs of infection
- Discomfort (burning, itching, pulling, tenderness)
- Discomfort (dryness, itching, scaling, flaking, peeling)

| DERMATITIS RADIATION<br>Adapted NCI CTCAE (Version 4.03) | | | | |
|---|---|---|---|---|
| **Normal** | **GRADE 1 (Mild)** | **GRADE 2 (Moderate)** | **GRADE 3 (Severe)** | **GRADE 4 (Life–threatening)** |
| No changes in skin | Faint erythema or dry desquamation | Moderate to brisk erythema; patchy moist desquamation, mostly confined to skin folds and creases; moderate edema | Moist desquamation in areas other than skin folds and creases; bleeding induced by minor trauma or abrasion | Life-threatening consequences; skin necrosis or ulceration of full thickness dermis; spontaneous bleeding from involved site; skin graft indicated |

***Step-Up Approach to Symptom Management:**
**Interventions Should Be Based On Current Grade Level and Include Lower Level Grade Interventions As Appropriate**

| | GENERAL SKIN CARE RECOMMENDATIONS |
|---|---|
| **Washing** | Encourage patients to wash the irradiated skin daily using warm water and non perfumed soap. The use of wash cloths may cause friction and are therefore discouraged. The use of a soft towel to pat dry is recommended. |
| **Use of Deodorants** | Patients may continue to use deodorants during radiation therapy. |
| **Other Skin Products** | Patients are discouraged from using any perfumed products which may possess chemical irritants and induce discomfort. Products such as gels or creams should be applied at room temperature. Encourage patients to use products advocated by the radiation department. |
| **Hair Removal** | The use of an electric shaver is recommended; wax or other depilatory creams are discouraged. Patients are asked not to shave the axilla if it is within the treatment field. |
| **Swimming** | Patients may continue to swim in chlorinated pools but should rinse afterwards and apply a moisturizing lotion. Patients experiencing radiation dermatitis which has progressed beyond dry desquamation should avoid swimming. |
| **Heat and Cold** | Encourage patients to avoid direct application of heat or cold to the irradiated area i.e. ice or electric heating pads. |
| **Band-Aids, Tape and Clothing** | Rubbing, scratching and massaging the skin within the treatment area causes friction and should be discouraged. The use of Band-Aids or tape on the skin should also be avoided. Wearing loose fitting cotton clothing may avoid traumatic shearing and friction injuries. The use of a mild detergent to wash clothing is also recommended. |
| **Sun Exposure** | The skin in the treated area may be more sensitive to the sun. Avoiding too much sun is part of a healthy lifestyle. Instruct patients to keep the area covered with clothing or use sunscreen with a minimum SPF 30. Sunscreen should be reapplied every 2 hours and after swimming. |

**NORMAL– GRADE 1**

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## NON – URGENT

**Prevention, support, teaching, & follow-up as clinically indicated**

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| **Clinical Presentation** | **Erythema**<br>• Pink to dusky colouration<br>• May be accompanied by mild edema<br>• Burning, itching and mild discomfort<br><br>**Dry desquamation**<br>• Partial loss of the epidermal basal cells<br>• Dryness, itching, scaling, flaking and peeling<br>• Hyperpigmentation<br><br>*Brisk Erythema*  *Dry Desquamation*  |
| **Patient Assessment** | Assessment to include:<br>• Location<br>• Size of area<br>• Colour<br>• Discomfort (burning, itching, pulling, tenderness) *erythema*<br>• Discomfort (dryness, itching, scaling, flaking, peeling) *dry desquamation* |
| **Hygiene** | • Use non-perfumed soap<br>• Bathe using warm water and palm of hand to gently wash affected skin. Rinse well and pat dry with a soft towel<br>• Wash hair using warm water and mild, non-medicated shampoo such as baby shampoo<br>• Patients receiving RT for perineal/rectal cancer should use a sitz bath daily once RT begins |
| **Promote Comfort** | • Apply hydrophilic (water based) body lotions or creams on affected area. Gently apply with clean hand twice a day. Do not rub skin<br>• Avoid petroleum jelly based products<br>• Avoid irritant products containing alcohol, perfumes, or additives and products containing Alpha Hydroxy Acids (AHA)<br>• Normal saline compresses up to 4 times daily |
| **Reduce Inflammation** | • Alleviate pruritus and inflammation. Corticosteroid creams may be used sparingly as ordered by the physician |
| **Prevent Trauma to the Treatment Area** | • For facial and underarm shaving, use an electric razor<br>• Recommend loose, non-binding, breathable clothing such as cotton<br>• Protect skin from direct sunlight and wind exposure by wearing a wide brimmed hat and protective clothing<br>• Remove wet swimwear, shower and apply moisturizer after swimming in pools and lakes<br>• Avoid extremes of heat and cold, including hot tubs, heating pads and ice packs<br>• Avoid adhesive tape. Extend dressing out of treatment area and adhere to intact skin with paper tape. Secure dressing with cling gauze, net tubing or under clothing |
| **Treatment Procedures** | • ***See Appendix A*** for specific directions for the use of: Topical products, normal saline compresses, sitz bath, antibacterial cream, hydrogels and hydrocolloid dressings as appropriate. |

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| **Follow-Up** | • Patients to be assessed at each visit. If symptoms are not resolved, provide further information regarding recommended strategies<br>- Instruct patient/family to call back if radiation dermatitis worsens<br>- Arrange for nurse initiated telephone follow–up |

## GRADE 2 – GRADE 3

## URGENT:
**Requires medical attention within 24 hours**

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| **Clinical Presentation** | **Moist Desquamation**<br>• Sloughing of the epidermis and exposure of the dermal layer<br>• Blister or vesicle formation<br>• Serous drainage<br>• Pain<br>*Moist Desquamation*<br>  |
| **Patient Assessment** | Assessment to include:<br>• Location of moist and dry areas<br>• Size of area<br>• Wound base: Granular tissue, eschar or necrotic tissue<br>• Exudate: Type, amount, odour<br>• Discomfort (burning, itching, pulling, tenderness)<br>• Signs of clinical infection<br>- fever<br>- foul odour<br>- purulent drainage<br>- pain and swelling extending outside the treatment area |
| **Hygiene** | • Cleanse with warm or room temperature normal saline<br>• Apply normal saline compresses up to 4 times daily<br>• Patients receiving RT for perineal/rectal cancer should use a sitz bath daily once RT begins |
| **Maintain Principles of Moist Healing** | • Can use a moisture retentive protective barrier ointment after each saline soak<br>• Consider the use of hydrogels<br>• Use a non-adherent dressing<br>• Use absorbent dressings over non-adherent dressings. Change as drainage warrants<br>• Control drainage. Consider using hydrocolloid dressings<br>***See Appendix B: Principles of Moist Healing*** |
| **Manage Pain** | • Prevent trauma to the treatment area<br>• Cover open areas to protect nerve endings<br>• To decrease burning and tenderness use non-adherent or low adherent dressings<br>• Administer analgesics as ordered by the physician |
| **Prevention of Infection** | • Regularly assess for signs of infection. Culture wound if infection suspected.<br>• Apply antibacterial/antifungal products as ordered by the physician |
| **Treatment Procedures** | ***See Appendix A*** for specific directions for the use of: Topical products, normal saline compresses, sitz bath, antibacterial cream, hydrogels and hydrocolloid dressings as appropriate |
| **Follow-Up** | • Patients to be assessed at each visit. If symptoms are not resolved, provide further information regarding recommended strategies<br>- Instruct patient/family to call back if radiation dermatitis worsens<br>- Arrange for nurse initiated telephone follow–up |

**GRADE 4**

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| EMERGENT:<br>Requires IMMEDIATE medical attention | |
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| **Clinical Presentation** | • Rarely occurs<br>• Skin necrosis or ulceration of full thickness dermis<br>• May have spontaneous bleeding from the site<br>• Pain |
| **Patient Assessment** | Assessment to include:<br>• Location of moist and dry areas<br>• Size of area<br>• Wound base: Granular tissue, eschar or necrotic tissue<br>• Exudate: Type, Amount, Odor<br>• Discomfort (burning, itching, pulling, tenderness)<br>• Signs of clinical infection (fever, foul odour, purulent drainage, pain and inflammation extending outside the radiated area) |
| **Management** | • Collaborate with physician as patient may require debridement or skin graft<br>• Maintain Principles of moist healing ***(See Appendix B)***<br>• Promote hygiene<br>• Prevent trauma<br>• Manage pain<br>• Prevent/treat infection as per physicians order |
| **Follow-Up** | • Patients to be re-assessed at each visit<br>• Instruct patient/family to contact the Health Care Professional if the dermatitis worsens |

| Potential Post-Radiation Skin Reactions:<br>Late Reactions | |
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| **Definition** | • Dermatitis occurring six or more months after completion of radiation therapy<br>• The clinical presentation and the degree of a late reaction vary. |
| **Clinical Presentation** | • Pigmentation changes<br>• Permanent hair loss<br>• Telangectasia<br>• Fibrous changes<br>• Atrophy<br>• Ulceration |
| **Patient Assessment** | Assessment to include:<br>• Location of moist and dry areas<br>• Size of area<br>• Wound base: Granular tissue, eschar or necrotic tissue<br>• Exudate: Type, amount, odour<br>• Discomfort (burning, itching, pulling, tenderness)<br>• Signs of clinical infection (fever, foul odor, purulent drainage, pain and swelling extending outside of radiation area). |
| **Maintain Skin Flexibility** | • Apply hydrophilic (water based) body lotions or creams on affected area.<br>• Gently apply with clean hand twice a day. Do not rub skin. |
| **Prevent Injury** | • Avoid excessive sun exposure. Wear protective clothing.<br>• Sun blocking creams or lotions with minimum SPF 30 recommended at all times. |
| **Manage Pain** | • Administer analgesics as ordered by the physician |

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| **Prevention of Infection** | • Regularly assess for signs of infection<br>• Culture wound if infection suspected<br>• Apply antibacterial/antifungal products as ordered by the physician |
| **Follow-Up** | • Patients to be assessed at each visit. If symptoms are not resolved, provide further information regarding recommended strategies<br>- Instruct patient/family to call back if radiation dermatitis worsens<br>- Arrange for nurse initiated telephone follow–up |

| **Potential Post-Radiation Skin Reactions<br>Recall Phenomenon** | |
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| **Definition** | • Recall phenomenon occurs when dermatitis manifests very rapidly (following the administration of chemotherapy drugs) within a previously treated radiation field |
| **Clinical Presentation** | • Symptoms of moist desquamation<br>• Rapid onset and progression |
| **Patient Assessment** | • Location of moist and dry areas<br>• Size of area<br>• Wound base: Granular tissue, eschar or necrotic tissue<br>• Exudate: Type, amount, odour<br>• Discomfort (burning, itching, pulling, tenderness)<br>• Signs of clinical infection (fever, foul odor, purulent drainage, pain and swelling extending outside of radiation area). |
| **Hygiene** | • Cleanse with warm or room temperature normal saline<br>• Apply normal saline compresses up to 4 times daily<br>• Patients receiving RT for perineal/rectal cancer should use a sitz bath daily once RT begins |
| **Maintain Principles of Moist Healing** | • Can use a moisture retentive protective barrier ointment after each saline soak<br>• Consider the use of hydrogels<br>• Use a non-adherent dressing<br>• Use absorbent dressings over low-adherent dressings. Change as drainage warrants<br>• Control drainage. Consider using hydrocolloid dressings<br>***See Appendix B: Principles of Moist Healing*** |
| **Manage Pain** | • Cover open areas to protect nerve endings<br>• Use non-adherent or low adherent dressings<br>• Administer analgesics as ordered by the physician |
| **Prevention of Infection** | • Regularly assess for signs of infection<br>• Culture wound if infection suspected<br>• Apply antibacterial/antifungal products as ordered by the physician |
| **Follow-Up** | • Patients to be assessed at each visit. If symptoms are not resolved, provide further information regarding recommended strategies<br>- Instruct patient/family to call back if radiation dermatitis worsens<br>- Arrange for nurse initiated telephone follow–up |

| | **Care of Malignant Wounds During Radiation Therapy** |
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| **Clinical Presentation** | A malignant wound may present with odour, exudate, bleeding, pruritis and pain and interfere with the patient's quality of life. |
| **Management** | • Treating the underlying cause of a malignant wound may involve surgery, radiation therapy, chemotherapy or hormone therapy<br>• The goal of radiation therapy is to reduce tumour size. As the tumour becomes smaller, radiation dermatitis may develop on surrounding tissue and the patient may experience erythema, dry desquamation and moist desquamation<br>• Managing symptoms (e.g. bleeding, exudate and pain), reducing tumor size and promoting wound healing can be additional aims of treatment |

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| **Skin Practices During Radiation Therapy** | • Apply principles of moist would healing at start of treatment ***(See Appendix B)***<br>• If the malignant lesion is encapsulated, initiate skin care practices for intact skin.<br>• If the lesion erupts (as a result of the inflammatory response associated with radiation therapy) initiate skin care practices for open wounds. Applying products which absorb drainage is essential to prevent infection and promote comfort.<br>• Protect surrounding intact skin ***(See General Skin Care Recommendations above)*** |

| **RESOURCES & REFERRALS** | |
|---|---|
| **Referrals** | • Patient Support Centre, Patient Review<br>• Telephone Care for follow – up<br>• Home Health Nursing |
| **Nursing Practice Reference** | • Care of Malignant Wounds: http://www.bccancer.bc.ca/NR/rdonlyres/0A61B812-801E-4F1E-8375-A89A8BD58377/51006/M30CareofMalignantWounds.pdf |
| **Health Professional resources** | • Skin and wound care resources https://www.clwk.ca/communities-of-practice/skin-wound-community-of-practice/buddydrive/ |
| **Related Online Resources** | • E.g. Fair Pharmacare; BC Palliative Benefits http://www.bccancer.bc.ca/NR/rdonlyres/AA6B9B8C-C771-4F26-8CC8-47C48F6421BB/66566/SymptomManagementGuidelinesRelatedResources.pdf |
| **Bibliography List** | • http://www.bccancer.bc.ca/HPI/Nursing/References/SystemManagementGuidelines/Biblio.htm |

**Date of Print:**
Revised: October, 2013
Created: July, 2012

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# Appendix A: Treatment Procedures

| Application of Topical Products | |
|---|---|
| **Moisturizing Products** | • Instruct patient to gently apply a thin layer of water soluble moisturizing ointment or cream using their clean hand 2 to 4 times daily to the skin in the treatment area |
| **Corticosteroid Creams** | • A prescription for hydrocortisone cream is required<br>• Do not use hydrocortisone if a skin infection is suspected as it may mask signs of infection and increase severity of the radiation dermatitis<br>• Do not use hydrocortisone on a long-term basis as it may cause problems resulting from reduced blood flow to the skin<br>• Instruct patient to gently apply a very thin layer of hydrocortisone cream using their clean hand as prescribed by the physician<br>• Instruct patient to apply to skin in the treatment area until discomfort decreases and to wash hands after application<br>• Discontinue use of hydrocortisone if there is any exudate from the affected area |
| **Barrier Creams** | • Instruct patient to apply a thin layer of (water soluble) barrier cream to the treatment area<br>• Non-adhesive dressings may be applied, depending on the location of the dermatitis |

| Normal Saline Compresses | |
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| **Indications** | • To reduce discomfort due to inflammation or skin irritation<br>• To cleanse open areas<br>• To loosen dressings |
| **Contraindication** | • Increased discomfort during procedure |
| **Procedure** | • Moisten gauze with warm or room temperature saline solution<br>• Wring out excess moisture (ensure that gauze will not dry out and adhere to open area)<br>• Apply moist gauze to open areas for 10-15 minutes. Cover compress with abdominal pad or disposable under-pad to retain warmth and moisture<br>• Remove gauze and gently irrigate wound with normal saline if required to remove any debris<br>• Gently dry surrounding skin<br>• Apply dressing/other treatments as indicated<br>• Repeat up to 4 times daily or as required |
| **Note** | • Continuous moist saline compresses may be indicated for short term use (24-48hrs) for a necrotic would or a wound with heavy exudate. It is critical that the compress is replaced frequently enough that it does not dry out and adhere to the area. Moist gauze is applied only to the wound area to avoid maceration of intact skin |

| Sitz Baths | |
|---|---|
| **Purpose** | • Perineal hygiene is the primary reason for using a sitz bath during/post RT when the area is tender and inflamed |
| **Indications** | • Use at onset of treatment for comfort and cleanliness<br>• Use at any time for any dermatitis in the perineal/peri-rectal area<br>• Discomfort with defecation<br>• Continuous discomfort due to perineal inflammation, hemorrhoids, radiation-induced diarrhea |
| **Contraindication** | • Discomfort during procedure |
| **Procedure** | • Water should be warm (40-43°C)<br>• Hot water can cause increased drying of skin<br>• Warm water will increase vasoconstriction and may decrease the itching<br>• Do not add bath oils or other products to water<br>• A hand held shower with a gentle spray or bathtub may be appropriate alternatives<br>• Maximum 10-15 minutes, repeat up to 4 times daily and/or after each bowel movement<br>• Gently pat area dry with a soft towel or expose area to room air |

| Silver Sulfadiazine Cream (antibacterial) | |
|---|---|
| **Purpose** | • To reduce risk of infection<br>• To reduce discomfort<br>• To maintain moist healing environment<br>• To reduce adherence of dressings |
| **Indications** | • The treatment and prophylaxis of infection in open wounds (moist desquamation) |
| **Contraindications** | • Allergy to sulfa<br>• Should not be used for patients with history of severe renal or hepatic disease or during pregnancy |
| **Procedure** | • Gently cleanse wound area with normal saline if area is small and dressing is easily removed<br>• Cleanse with tap water (sink, bathtub, shower or sitz bath) if area is large, difficult to cleanse or adherence of dressing is a problem<br>• It is important to gently remove all residual cream from previous applications (saline compresses may be required)<br>• Apply a thin layer of cream to area of affected skin only<br>• Apply appropriate secondary dressing<br>• Change dressing at least once daily |

| Hydrogels | |
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| Hydrogel is a sterile wound gel that helps create or maintain a moist environment. Some hydrogels provide absorption, desloughing and debriding capacities to necrotic and fibrotic tissue. Hydrogel sheets are cross-linked polymer gels in sheet form. | |
| **Purpose** | • To increase comfort (cooling effect on skin)<br>• To increase moisture content<br>• To absorb small amounts of exudate |
| **Indications** | • Moist desquamation with minimal exudate |
| **Contraindication** | • Not advised for infected wounds<br>• Wounds with moderate to heavy exudate<br>• Areas that need to be kept dry |
| **Procedure** | • Cleanse area with normal saline soaks or sitz baths<br>• Pat dry surrounding skin<br>• Either apply a thin layer of hydrogel directly onto the area of moist desquamation or apply with a tongue depressor<br>• Cover with non-adhesive dressing (may be secured by clothing if patient is ambulatory)<br>• May be used in combination with transparent films, foams, hydrocolloids or other non-adherents<br>• Reapply at least daily and always following normal saline soaks/sitz baths |

| Hydrocolloid Dressings | |
|---|---|
| Hydrocolloids are occlusive and adhesive water dressing which combine absorbent colloidal material with adhesive elastomeres to manage light to moderate amount of wound exudate. Most hydrocolloids react with wound exudate to form a gel-like covering which protect the wound bed and maintain a moist wound environment | |
| **Purpose** | • Maintain moist wound bed<br>• To increase comfort<br>• Support autolytic debridement by keeping wound exudate in contact with necrotic tissue |
| **Indications** | • Moist desquamation with moderate exudate |
| **Contraindication** | • Not advised for infected wounds<br>• Wounds with heavy exudate |
| **Procedure** | • Cleanse area with normal saline soaks or sitz baths<br>• Pat dry surrounding skin<br>• Choose a dressing that extends beyond the wound<br>• Remove backing and apply to wound<br>• Change dressing as required depending on causative factors, contributing factors and amount of exudate |

# Appendix B: Principles of Moist Healing

## Principles of Moist Healing

Cell growth needs moisture and the principle aim of moist wound therapy is to create and maintain optimal moist conditions. Cells can grow, divide and migrate at an increased rate to optimize the formation of new tissue. During this phase of wound healing an aqueous medium with several nutrients and vitamins is essential for cell metabolism and growth.

The wound exudate serves as a transport medium for a variety of bioactive molecules such as enzymes, growth factors and hormones. The different cells in the wound area communicate with each other via these mediators, making sure that the healing processes proceed in a coordinated manner.

Wound exudate also provides the different cells of the immune system with ideal conditions to destroy invading pathogens such as bacteria, foreign bodies and necrotic tissues, diminishing the rate of infection. Moist wound treatment is known to prevent formation of a scab, allowing epithelial cells to spread horizontally outwards through the thin layer of wound exudate to rapidly close the wound.