Identifying Skin Damage: Pressure Ulcers vs. Incontinence-Associated Dermatitis

(also known as IAD or Diaper Rash)

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with Capital Nursing Education

SkinPreservation
Caring for skin through intelligent product solutions

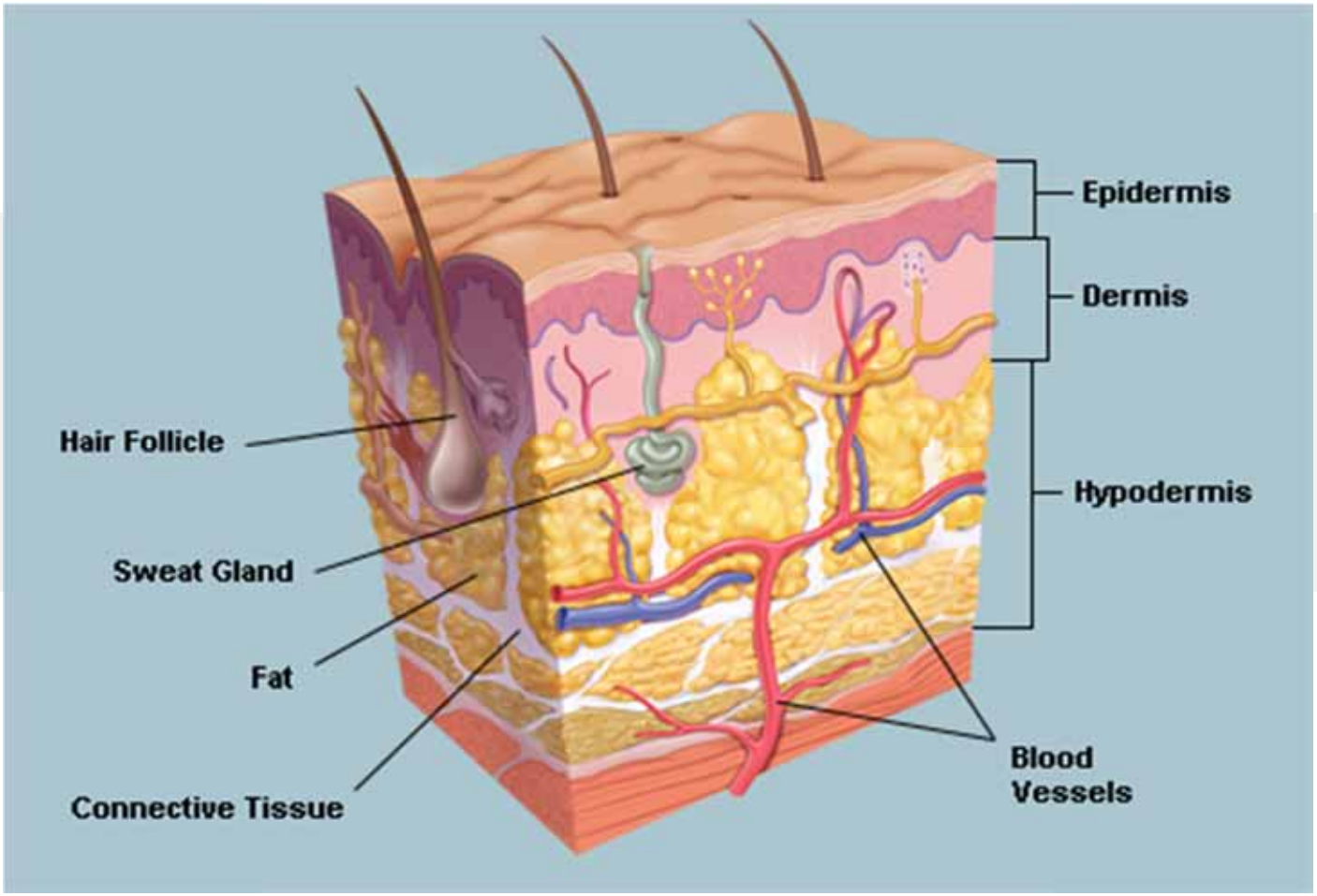
Shield HealthCare

MEDICAL SUPPLIES FOR CARE AT HOME SINCE 1957

Objectives

- Explain the difference between Incontinence-Associated Dermatitis (IAD) and Pressure Ulcers (PU)
- Describe the effect of excessive moisture on skin integrity
- Discuss the three (3) main components of a skin care regime for a person with fecal or urinary incontinence

Skin Anatomy



Elements of Skin's Moisture Barrier

- Stratum corneum:
  - Keratinocytes or corneocytes
  - 0.5mm-1.5 mm
  - Sheds ~ every 12-24 days
- Lipid matrix: slows movement of water and electrolytes
- Water: hydrates corneocytes
- pH: (usually 5.0-5.9) forms an acid mantle
- Temperature: regulates permeability
- Bacterial flora: competes with pathogens to prevent infection

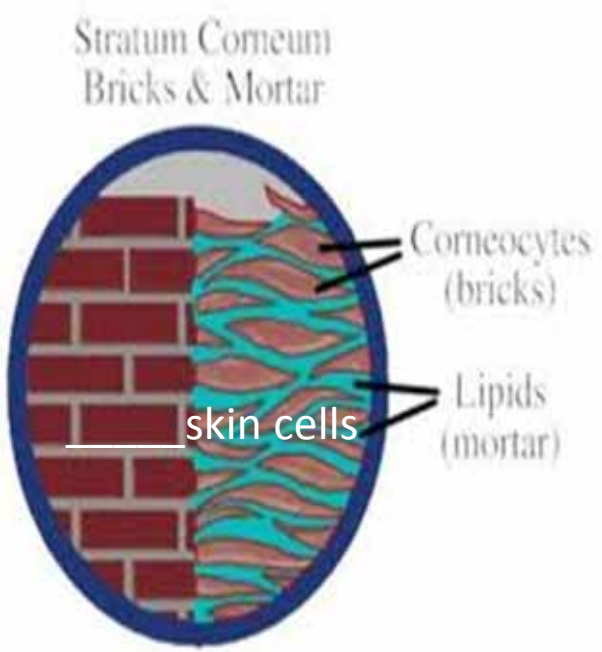
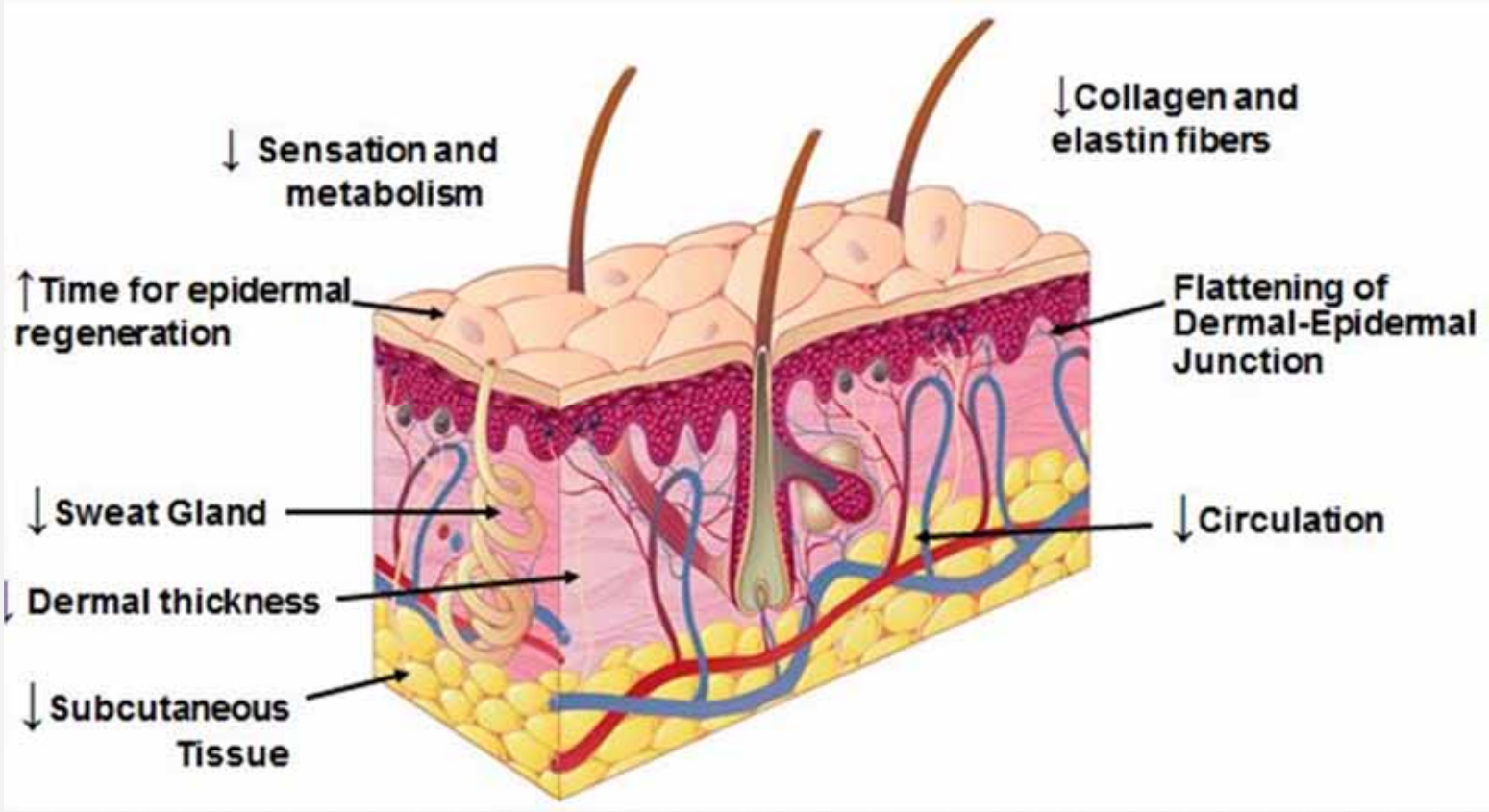


Figure:
cerave.com/barrier.htm

Aging Skin



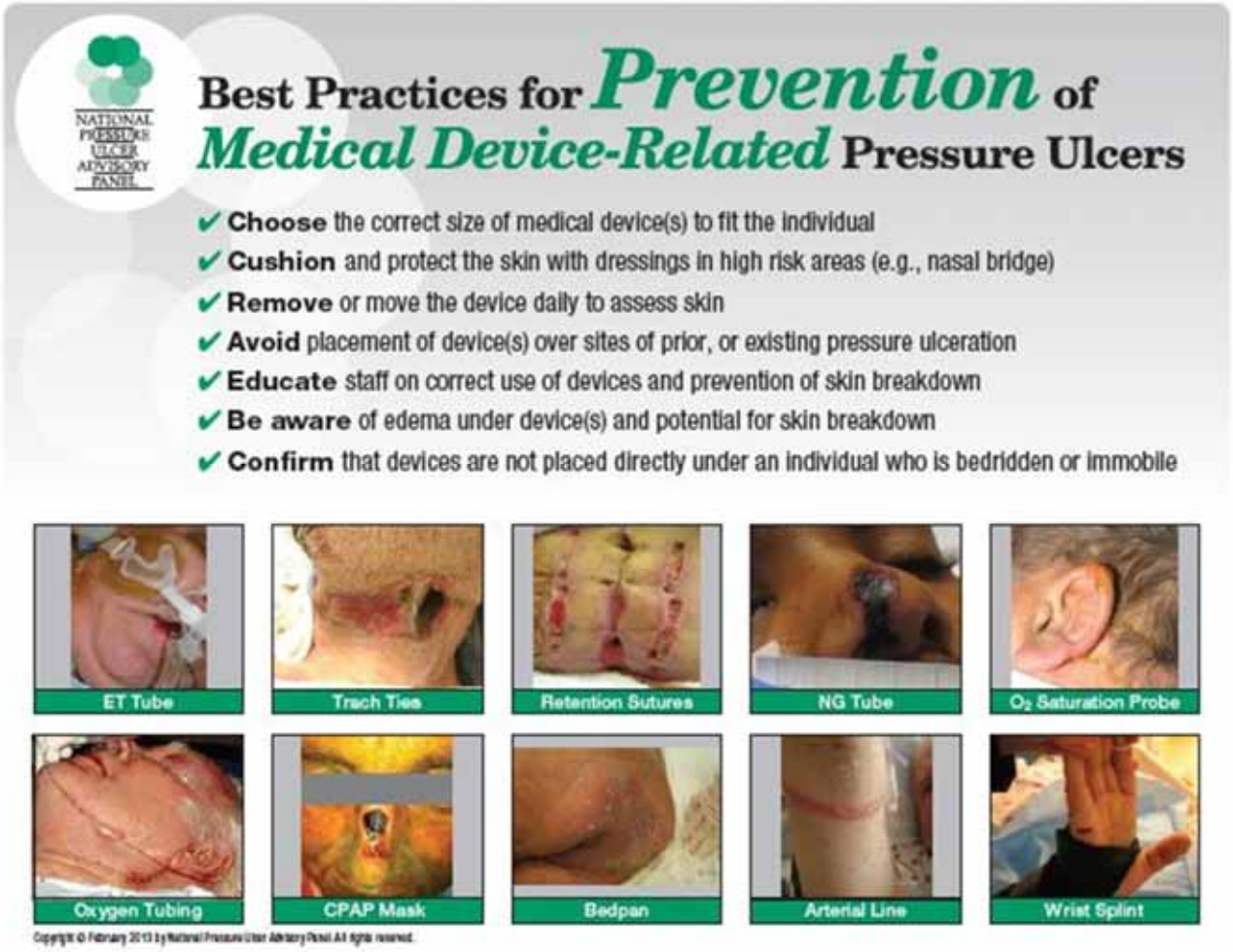
Accurate Skin Assessment

- Lack of knowledge of what common wounds look like
  - Leads to all open wounds being classified as Pressure Ulcers
  - Places institutions at increased risk for fines and litigation
- Accurately define etiology of the wound

Issues With Skin Assessment

- Need for adequate resources
  - Staff members
  - Beds/assistive devices for repositioning and turning
- Inability to see all the skin
  - For obese patients, get adequate help
  - For immobile patients, look whenever being moved for any reason
  - For patients with medical devices, remove the device and look beneath it

Device Related Pressure Ulcers



Skin Assessment

Light Skinned Person

- Bright red
- May “glisten” due to serous exudate

Darker Skin Tones

- Not as bright red
- Often presents as area of hypopigmentation or subtle red tone

Moisture or Pressure?

Stage I
Pressure Ulcer

Incontinence-
Associated Dermatitis

Pressure Ulcers

- Chronic (Pressure Ulcer)
- Greater than 3 month duration
- Has failed to heal in a predictable manner, often due to a prolonged inflammatory phase of wound healing
- Presents serious challenges to care providers in all settings

Pressure Ulcer

Pressure…or IAD ?

Why Differentiate???

- Effective treatment must include correction of etiologic factors
- Misclassification of IAD for pressure ulcers:
  - Increases facility's risk for litigation and reimbursement
  - Compromises integrity and validity of Prevalence and Incidence data, leading to incorrect benchmarking

Misdiagnosis Means $$

- Hospital-acquired pressure ulcers are “never events” in acute care
- Stage III and IV wounds are **not** reimbursed at the higher diagnostic-related group for the costs of their care
- Affects the hospital’s standing in nursing-sensitive quality indicators
- These wounds can be serious injuries that lead to death!

Healthcare Costs and Litigation
Pressure Ulcers

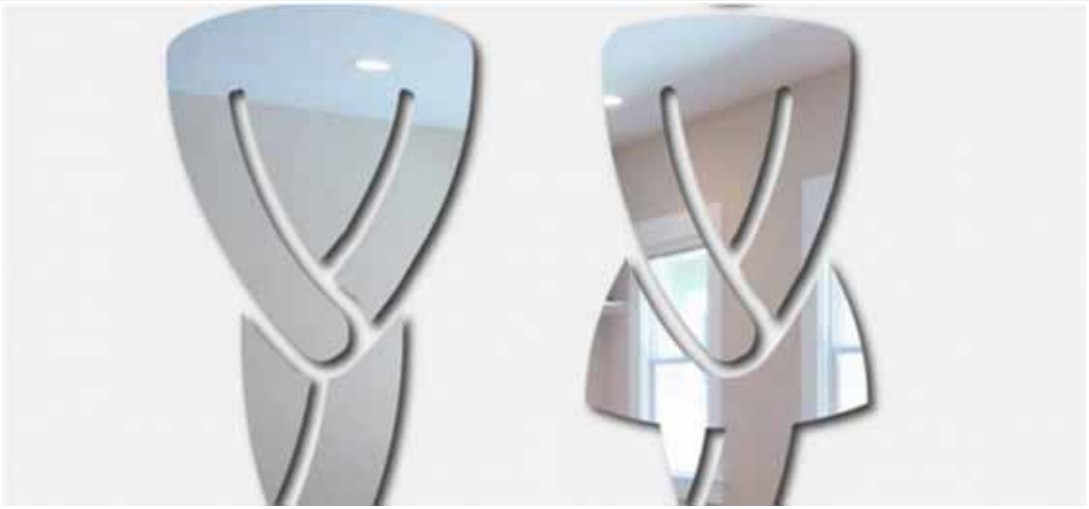
- Estimated $11 billion per year to treat PU
- In-patient length of stay 3-5 times longer with PU
- Patient with PU (primary or secondary) are discharged to SNF at 3 x's the rate of other diagnosis (WOCN, 2010)

Incontinence and Skin

Definition

- Incontinence is the involuntary loss of urine or feces of sufficient magnitude to comprise a problem for the patient or caregiver

Wound, Ostomy, and Continence Nurses Society



Prevalence

- 13 million persons in USA suffer from UI
- Prevalence of urinary and fecal incontinence increases with age
- Women affected twice as often as men
- Incontinence is one of the leading causes of institutionalism in the elderly

Healthcare Costs
Incontinence

The annual direct costs for the management of urinary incontinence in the United States are estimated at **$12.4 billion for women and $3.8 billion for men** (2001).

The average annual total cost for fecal incontinence was **$4,110 per person/per year** (2012)

Significance of Incontinence

- Suffering of the patient
- Prevalence of skin care problems across all care settings
- Costs to healthcare system
- Regulatory oversight

Urinary & Fecal Incontinence

Neonate with Candida

Elderly gentleman with fecal incontinence

Adverse Effects of Urine on Skin

- Water
  - ↓ skin hardness, rendering it more susceptible to friction and erosion[1- 3]
  - **Compromises barrier function of skin[4]**
    - ↑ permeability to pathogenic species
    - ↑ permeability to irritants in urine and stool
  - **Effects exacerbated by presence of occlusive device such as wrap around incontinence brief**

Adverse Effects of Stool on Skin

- **Fecal enzymes**
  - Proteases and lipase potentially break down both principal elements of moisture barrier[1–2]
  - In vivo evidence shows that exposure to digestive enzymes in human skin led to[3]
    - ↑ TEWL & ↑ pH
    - Damage exacerbated when bile salts are present
    - Visible damage ONLY when occlusion present
    - Evidence of damage present after 12 days

Adverse Effects of Stool on Skin (cont.)

- **Stool Consistency**
  - Overwhelming clinical experience suggests that liquid stool more damaging than solid (formed) stool
  - Diarrhea emerged as risk factor in multivariate analysis of 532 children managed by diapers[1]
  - Diversion of stool in SICU for patients with FI & diarrhea
    - ↓ incidence of skin damage from 43.0% to 12.5% [2]

Fecal Incontinence

Incontinence-Associated Dermatitis

Incontinence-Associated Dermatitis IAD DEFINITION

- “an inflammation of the skin that occurs when urine or stool comes in contact with the perineal or perigenital skin”

  Gray, M, et al. J Wound Ostomy Continence Nurs. 2007 Jan-Feb;34(1)45-54.

- A major risk factor for pressure ulcers!

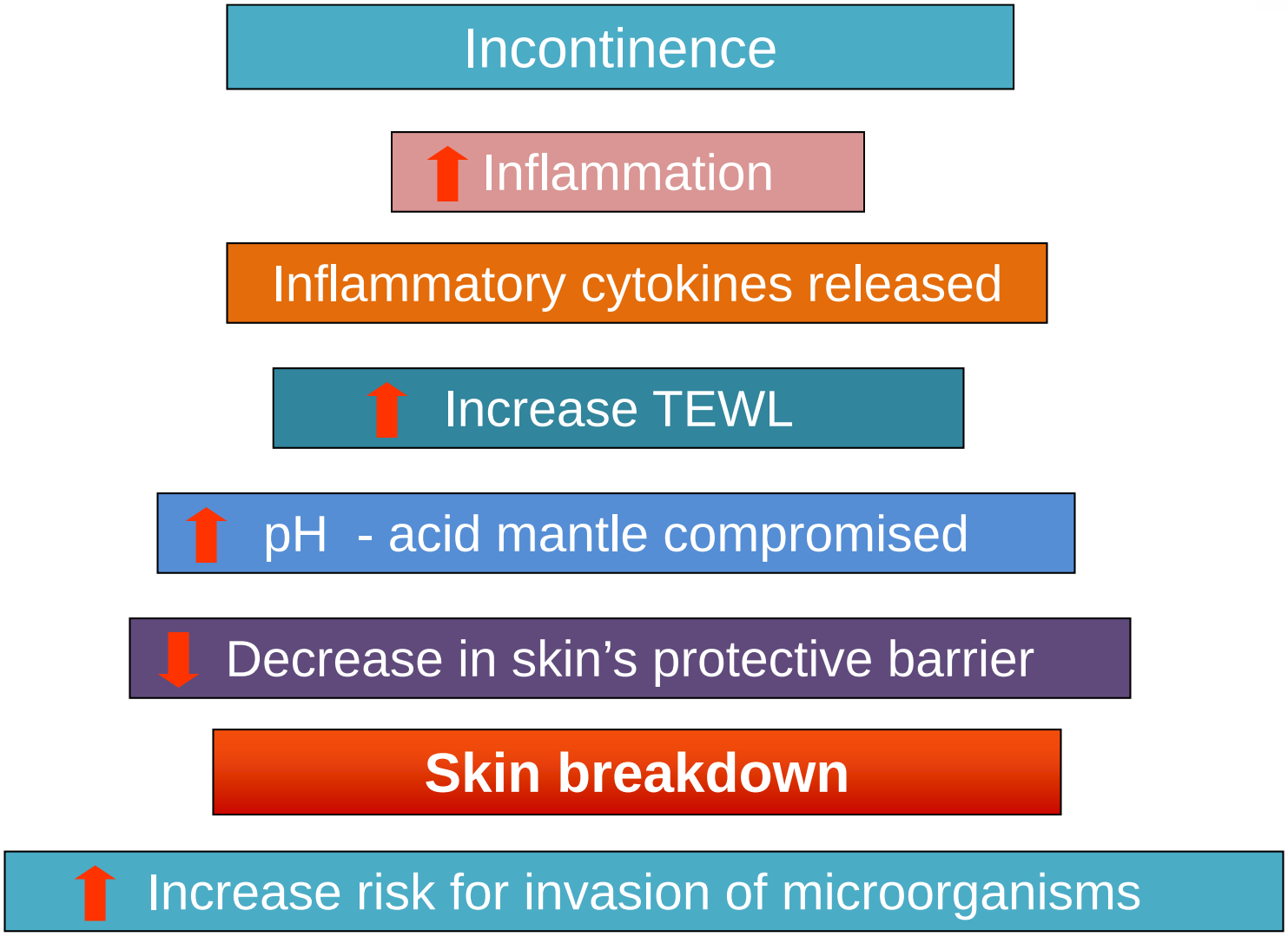
Incontinence-Associated Dermatitis

IAD Risk Factors

- Fecal incontinence
- Frequency of incontinence
- Poor skin condition
- Fever

- Compromised mobility
- Both urinary and fecal incontinence
- Moisture
- Alkaline pH

IAD – Pathophysiology



Other Concerns

- Incontinence-Associated Dermatitis can lead to:
  - inflammation
  - erosion
  - secondary infection
- Patient pain and discomfort!

IAD - Pathophysiology

Urine

- Over-hydrated skin
- Maceration
  - ↑ pH (ie. alkaline pH)
  - ↓ Protective barrier
- Urine interacts with feces to activate fecal enzymes

Urine incontinence alone – no significant factor in developing IAD

Feces

Fecal Enzymes

- ↑ microbes/bacteria
- ↑ protease activity
- ↑ pH (ie, alkaline pH)
- Feces interacts with urine to activate fecal enzymes

Fecal incontinence alone – **strongest** significant group to develop IAD

Double incontinence – significant factor developing IAD

Assessment: IAD vs. Pressure Ulcers

IAD

- **Etiology**: continued skin exposure to urine, feces or both
- **Location**: diffuse rash
- **Color**: red or bright red
- **Depth**: partial-thickness; (ie. limited to epidermis and/or dermis); two dimensional
- **Necrosis**: none
- **Symptoms**: pain and itching

Pressure Ulcers

- **Etiology**: ischemia from pressure
- **Location**: circumscribed and usually over bony prominences
- **Color**: red to bluish/purple
- **Depth**: partial or full-thickness; three dimensional; deep tissue injury
- **Necrosis**: may be present
- **Symptoms**: pain and itching

Incontinence-Associated Dermatitis

<u>DO NOT</u> use the
NPUAP pressure ulcer staging system
to describe

Incontinence-Associated Dermatitis!

Goals of Perineal Skin Care

Goals of Perineal Skin Care

Skin to be clean

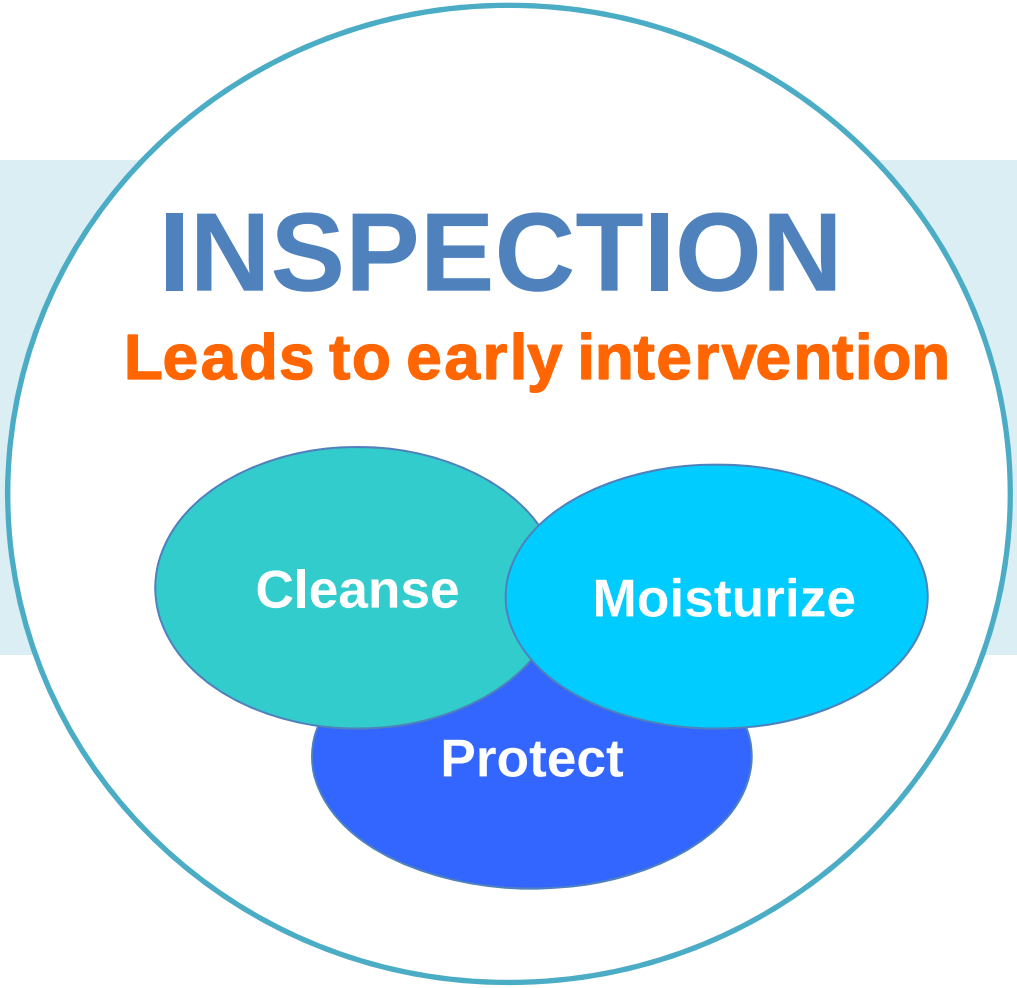
(Gray et al 2002)

Skin to have minimal exposure to irritants

(Gray, 2002)

OPTIMAL SKIN CARE

Maintaining Healthy Skin



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PROTECT

intact skin

Skin Hygiene

- Use skin emollients to **hydrate the skin** in order to reduce risk of skin damage
  - Dry skin develops fissures which can become infected and fail to heal
  - Moisturize skin while still wet (after bath)

- **Protect the skin** from exposure to excessive moisture with a barrier product in order to reduce risk of pressure damage
  - Moist skin does not “glide” across linens

Skin Preservation

CLEANSE

MOISTURIZE

PROTECT

CLEANSE the skin

- When frequent bathing necessary, current evidence suggests…
  - Gentle cleansing: ***NO scrubbing*** [1 – 2]
  - pH close to acid mantle of skin (5.5)
  - minimize potential irritants, scents, etc.

- Towel drying has been found to compromise moisture barrier, consider no-rinse formulation for frequent bathing[2]

- Surfactants, used to remove dirt and bacteria, can also increase transepidermal water loss[3]

MOISTURIZE the skin

- A good moisturizer provides
  - Humectants to compensate for loss of natural moisturizing factors
  - Lipids to replace those lost from the intercellular lipid layers of the stratum corneum
- Apply after bathing and as needed
- Non-sensitizing

MOISTURIZERS…

- **Emollients**

  -Usually oils -Makes skin soft and smooth

- **Humectants**

  -Glycerin, urea

  -Actively binds the available water in the epidermis

- **Occlusive skin conditioners**

  -Petrolatum, mineral oil, paraffin

  -Coats epidermis to prevent evaporation

PROTECT the skin

- **Skin Protectants should**
  - Act as a “moisture barrier”, protecting skin from deleterious effects of exposure to irritants and excess moisture
  - Maintain hydration and favor skin’s normal transepidermal water loss (TEWL)
  - Avoid maceration when left on for prolonged period of time

Skin Care Products

MOISTURE BARRIERS

- Skin sealants (solvent with a polymer)
  - Alcohol based
  - “No Sting” available for denuded skin
- Spray
- Lotion (thinner; increased ratio of water to oil)
- Cream (oil based)
- Paste (ointments with fine powder added)
- Ointment (emulsified oil in water)

Types of
SKIN PROTECTANTS

- **Petrolatum:** blend of castor seed oil and hydrogenated castor oil

- **Dimethicone:** silicone based oil

- **Zinc Oxide:** white powder, mixed with cream or ointment based

Comparison of
SKIN PROTECTANTS

Petrolatum:

- Good protection against irritant
- Avoided maceration
- Poor skin hydration

Dimethicone:

- Variable protection against irritant
- Avoided maceration
- Good skin hydration

Zinc Oxide:

- Good protection against irritant
- Did not avoid maceration
- Poor skin hydration

All-in-One Products

- Consider these products when indicated and when available
- These **clean, moisturize, and protect** in a one-step application
- Available as cloths and spray-on applications
- When placed at bedside, reduces process to a simple, single step
  - ↓ time needed by staff to apply
  - ↓ discomfort for patient caused by rubbing and wiping during procedure

Skin Care Regimen Summary

- Cleanse and protect the skin
- Use products that wick moisture away from the skin and avoid occlusion
- Prevent secondary infection
- Control or divert source of moisture
- Reexamine the skin frequently for signs of damage
  - rubbing and wiping during procedure

Skin Care Training

- Training needed for all levels of nursing staff
  - Include skin care in orientation programs
  - Make aspects of skin care part of competencies
  - Include WOCN in Prevalence & Incidence for PU
- Need for complete and accurate skin assessments
  - Differential diagnosis of skin problems
  - Difference between IAD and PU

Management Program for Incontinence

- **Needs to include:**
  - Dietary and fluid management
  - Bowel training or stimulated defecation program
  - Bladder retraining
    - Prompted voiding
    - Scheduled voiding program
  - Indwelling catheter management
  - Intermittent catheterization program
  - Pelvic muscle reeducation
  - Containment or absorptive devices
  - Skin care regime

IAD
PREVENTION & CARE

- Begins with clear diagnosis
- Determine functional status of patient
- Define the level of incontinence (light, moderate, heavy)
- Protect the skin from further exposure to irritants
- Institute appropriate absorbent product use

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Incontinence Pads, Protective Undergarments & Adult Diapers

Pads for Women or Men	Liners	Belted Undergarments (Adjustable Adult Diapers)	Pull-On Style Adult Diapers	Fitted Briefs (Tab Style Adult Diapers)	Overnight Fitted Briefs (All Thru the Night Adult Diapers)
Use in regular underwear, stay dry & odor-free	Larger pads w/ Lycra leg gathers to reduce leaks	Liner w/ adjustable velcro straps	Cloth-like disposable underwear	Superabsorbent w/ refastenable tabs	Extra absorbency lasts through the night

Products for Extra Care & Protection

Washable Underwear	Booster Pads	Underpads	Personal & Skin Care	Wipes & Tissues	Exam Gloves
Cotton underwear w/ waterproof lining for pads	Extends life of pull-ons & fitted briefs	Bed Pads & Chux; Disposable & Washable	Skin, Body & Perineal Care Products	Large size wet wipes with aloe, dry washcloths & tissues	Lightly powdered

Other Considerations

- What is it made of?
- Is it going to leak?
- Does it fit the patient?
- Does it control odor?
- Does it control fecal incontinence?
- How well do these products wick the urine away from the skin?

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How Can We Help the Incontinent Patient?

- Assessing their need
- Toileting every 2 hours
- Giving them reassurance and confidence
- Be empathetic!!
- Provide them with familiar products…those they use at home, when possible
- Make them comfortable
- Work as a team with the patient to make this a less burdensome issue

Your Team

This concludes our presentation. Thank you for joining us.

Questions?