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Turn Rough & Torn into Smooth & Warm

*Associate Professor Christina Parker
Wound Research Advancement Group (QUT)*

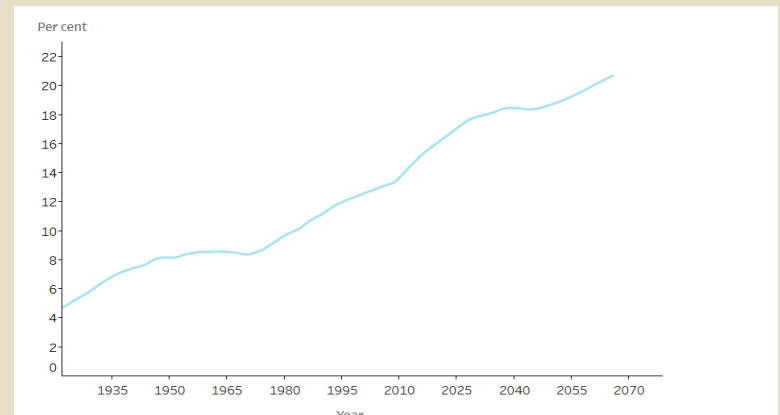


DEMOGRAPHICS

IN 2020 AUSTRALIA HAD 4.2 MILLION PEOPLE AGED 65 YEARS OR MORE, REPRESENTING 16% OF THE NATION'S POPULATION (THIS WAS AN INCREASE FROM 1 MILLION (8.3%) OF THE TOTAL POPULATION) IN 1970 AND 2.2 MILLION (12%) IN 1995)

IN 2066 THE NUMBER IS EXPECTED TO INCREASE TO 21-23% OF THE POPULATION

AUSTRALIAN BUREAU OF STATISTICS (2023)



SIGNIFICANCE

- COMPLEX MEDICAL NEEDS AND MULTIPLE COMORBIDITIES
- FALLS
- SOCIAL ISOLATION
- DEPRESSION
- POTENTIAL FOR PHARMACEUTICAL COMPLICATIONS (POLYPHARMACY)

.....AND SKIN
INTEGRITY ISSUES



Senile Purpura

ANATOMY OF THE SKIN

- 15% OF THE BODY WEIGHT
- LARGEST ORGAN IN THE BODY
- SAFEGUARDING AND PROTECTION
- FACILITATING THERMOREGULATION
- SENSORY PERCEPTION
- CONTRIBUTING TO VITAMIN D PRODUCTION
- WELL-BEING AND SELF-IMAGE
- NEONATES AND OLDER PEOPLE ARE SUSCEPTIBLE TO DAMAGE FROM CHANGES IN THE ENVIRONMENT AND HEALTH CONDITIONS



ANATOMY OF THE SKIN

WHERE IS THE THICKEST SKIN ON THE BODY?

- A. SOLES OF THE FEET AND PALMS OF THE HANDS
- B. KNEES
- C. SCALP
- D. BACK OF NECK

BACKGROUND

NEONATES

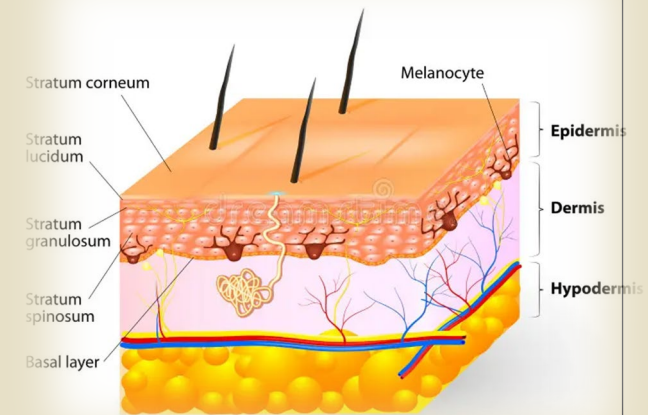
THE SKIN OF NEONATES HAS:

- THINNER LAYERS OF THE EPIDERMIS, DERMIS AND HYPODERMIS
- HIGHER PH THAN MATURE SKIN
- CONTINUES TO DEVELOP IN THE FIRST FEW MONTHS OF THEIR LIFE

BACKGROUND

DARKER SKIN TONES

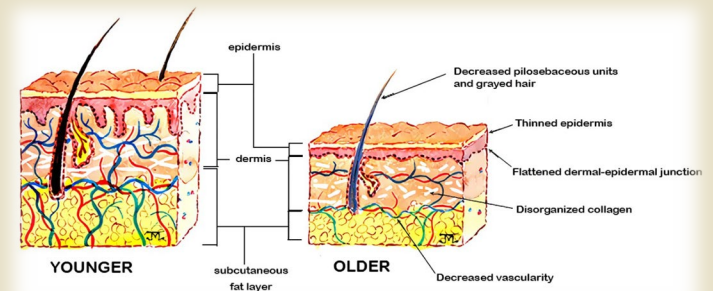
- PIGMENTATION - MORE MELANIN
- HIGHER DESQUAMATION
- HIGHER TRANSEPIDERMAL WATER LOSS
- LOWER SKIN VASCULAR REACTIVITY



CHRONOLOGICAL AGEING

AGEING LEADS TO:

- THINNING OF OUTER SKIN LAYER (EPIDERMIS)
- ROUGHENING OF THE SKIN
- LOSS OF ELASTIC TISSUE (ELASTIN)
- INCREASING PH
- APPEARANCE OF WRINKLES, DRYNESS, AGE SPOTS AND CANCERS DUE TO YEARS OF SUNTANNING AND BEING OUT IN THE SUNLIGHT



WHAT THIS LEADS TO..

70% OF OLDER PEOPLE HAVE SKIN PROBLEMS

AGEING LEADS TO:

- DECREASED SENSATION
- INCREASED DRYNESS
- SKIN THINNING
- DECREASED VITAMIN D SYNTHESIS
- REDUCED IMMUNE RESPONSE
- DECREASE IN ABILITY TO CONTROL BODY TEMPERATURE

WHAT ALSO INFLUENCES SKIN HEALTH.....

- AGE RELATED DISEASE IN OTHER ORGAN SYSTEMS
- SOCIAL CIRCUMSTANCES I.E. POOR NUTRITION
- REDUCED MOBILITY
- POOR DEXTERITY (NOT BEING ABLE TO REACH AREAS TO APPLY CREAMS)
- PHYSIOLOGICAL PROBLEMS SUCH AS DEMENTIA
- INCREASING FRAILTY
- POOR HYGIENE

RISK FACTORS FOR SKIN ISSUES

- AGE
- COGNITIVE IMPAIRMENT
- DEHYDRATION
- POOR NUTRITION
- OBESITY
- CERTAIN MEDICATIONS (E.G. IMMUNOSUPPRESSIVES, ANTI-INFLAMMATORIES, ANTI-COAGULANTS)
- INCONTINENCE
- CHRONIC DISEASE (IE. SCLERODERMA, AUTOIMMUNE DISORDERS)
- CRITICAL ILLNESS
- IMPAIRED MOBILITY
- IMPAIRED CIRCULATION
- RADIATION THERAPY
- SKIN TONE

COMMON SKIN CONDITIONS AFFECTING THE OLDER PERSON

- DRY, VULNERABLE SKIN
- EXCORIATION FROM INCONTINENCE OR PRESENCE OF CONSTANT MOISTURE
- SKIN TEARS
- ARTERIAL LEG ULCERS
- VENOUS LEG ULCERS
- DIABETIC FOOT ULCERS
- PRESSURE INJURIES



ANATOMY OF THE SKIN

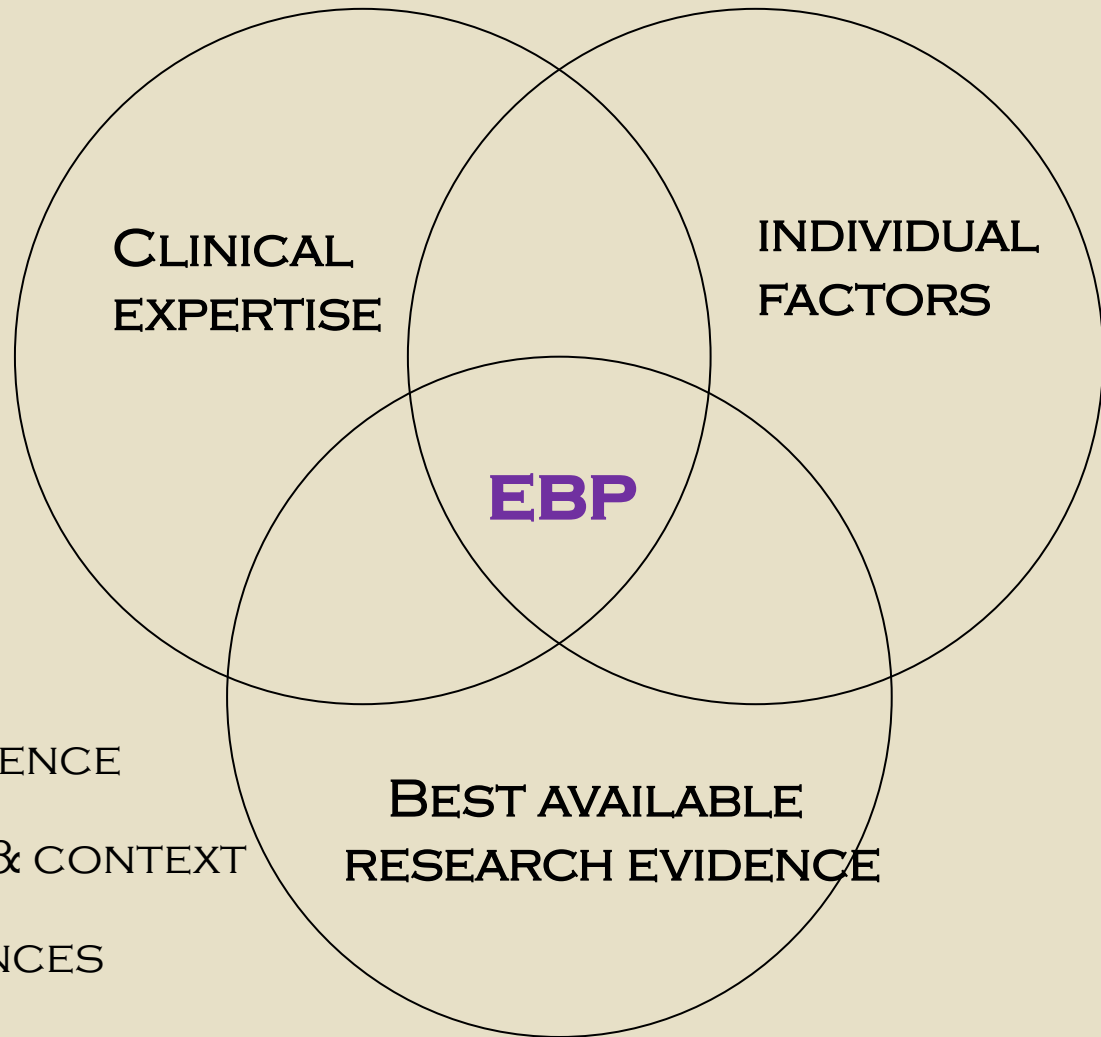
WHERE IS THE THINNEST SKIN ON THE BODY?

- A. FINGERS
- B. EYELIDS
- C. TOES
- D. CHEST

EVIDENCE BASED PRACTICE



WHAT IS EVIDENCE-BASED PRACTICE?



- BEST RESEARCH EVIDENCE
- CLINICAL EXPERTISE & CONTEXT
- INDIVIDUAL PREFERENCES

ASSESSMENT, MANAGEMENT & PREVENTION STRATEGIES FOR SKIN INTEGRITY



REVIEW

What is the evidence on skin care for maintaining skin integrity and prevention of wounds? An integrative review

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Skin Care



For this summary, all recommendations have had their levels of evidence classified as follows:

Level I	Evidence from a systematic review or meta-analysis of at least two level II studies
Level II	Evidence from a well-designed randomised controlled trial (for interventions), or a prospective cohort study (for prognostic studies)
Level III	Evidence from non-randomised studies with some control or comparison group
Level IV	Evidence from studies with no control or comparison group
EO	Consensus statements provided by a national or international panel of experts in the area.

This guidelines summary has been developed for health professionals caring for people with impaired skin integrity or those at risk of loss of skin integrity. Assessment and management of skin integrity should be undertaken by health professionals with expertise in the area.

This is a summary of recommendations from the following sources, which should be accessed for further details as required:

1. Haesler E, Carville K. Australian Standards for Wound Prevention and Management: Australian Health Research Alliance, Wounds Australia, WAHTN; 2023. <https://woundsaustralia.org/ocd.aspx>
2. Wounds UK. Best Practice Statement: Maintaining skin integrity. Wounds UK; 2018. <https://wounds-uk.com/>
3. Fastner A et al. Skin assessments and interventions for maintaining skin integrity in nursing practice: An umbrella review. *Int J Nurs Studies* 2023;143:104495.
4. Lichterfeld-Kottner A et al. Maintaining Skin Integrity in the aged: A systematic review. *Int J Nurs Studies* 2020;103:1-23.
5. Cowdell F et al. Hygiene and emollient interventions for maintaining skin integrity in older people in hospital and residential care settings. *Cochrane Database Syst Revs* 2020;CD011377.
6. Angelova-Fischer I et al. Accelerated barrier recovery and enhancement of the barrier integrity and properties by topical application of a pH 4 vs. a pH 5-8 water-in-oil emulsion in aged skin. *Br J Dermatol* 2018;179:471-477.
7. Beekman D et al. Best practice recommendations for holistic strategies to promote and maintain skin integrity. *Wounds International* 2020. <https://woundsinternational.com/>
8. Carville K et al. The effectiveness of a twice-daily skin-moisturising regimen for reducing incidence of skin tears. *Int Wound J* 2014;11:446-53.
9. Beekman D et al. Interventions for preventing and treating incontinence-associated dermatitis in adults. *Cochrane Database Syst Revs* 2016;CD11627.
10. EPUAP, NPIAP, PPIA. Prevention and treatment of pressure ulcers/injuries: Clinical practice guideline: EPUAP, NPIAP, PPIA; 2019. <https://internationalguideline.com/>
11. Raepsaet C et al. Promoting and Maintaining Skin Integrity in End-of-Life Care: A Systematic Review. *Advances in Skin & Wound Care* 2022;35:617-631.

HOLISTIC ASSESSMENT



- UNDERTAKE A COMPREHENSIVE, HOLISTIC, SKIN ASSESSMENT AND REASSESSMENT IF THERE IS A CHANGE IN CONDITION
- CONSIDER THE RISK FACTORS AND A PLAN TO ADDRESS RISK FACTORS



Diagnosis
Mild cognitive impairment

Mental Status Exam

HOLISTIC ASSESSMENT



- UNDERTAKE A COMPREHENSIVE, HOLISTIC, SKIN ASSESSMENT AND REASSESSMENT IF THERE IS A CHANGE IN CONDITION
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Diagnosis
Mild cognitive impairment

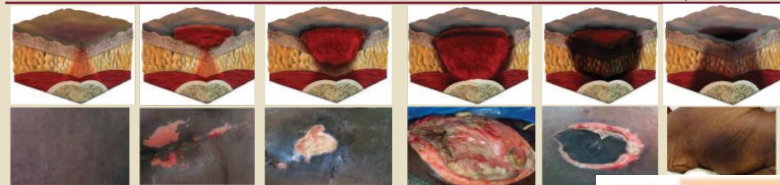
Mental Status Exam

SKIN TONE CLASSIFICATION SCALES

PAN PACIFIC PRESSURE INJURY CLASSIFICATION SYSTEM FOR DARK SKIN TONES



Normal skin	Stage 1	Stage 2	Stage 3	Stage 4	Unstageable	Suspected Deep Tissue Injury
<p>epidermis dermis subcutaneous fat muscle bone</p>	<p>Intact skin with non-blanchable redness of a localized area usually over bony prominences. Darkly pigmented skin may not have visible blanching. Its colour may differ from the surrounding area. The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Stage 1 pressure injuries may be difficult to detect in individuals with darkly pigmented skin tone. May indicate "at risk" individuals (a heralding sign of risk).</p>	<p>Partial thickness loss of dermis presenting as a shallow open ulcer with a red/pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister. Presents as a shiny or dry shallow ulcer without slough or bruising (bruising indicates suspected deep tissue injury). Stage 2 pressure injuries should not be used to describe skin tears, tape burns, periwound dermatitis, maceration or excoriation.</p>	<p>Full thickness tissue loss. Subcutaneous fat may be visible, but bone, tendon or muscle are not exposed. Slough may be present but does not obscure depth of tissue loss. May include undermining and tunnelling. The depth of Stage 3 pressure injuries varies by anatomical location. The bridge of nose, ear, occiput and malleolus do not have subcutaneous tissue and Stage 3 ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep. Stage 3 pressure injuries. Bone/tendon is not visible or directly palpable.</p>	<p>Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunnelling. The depth of a Stage 4 pressure injury varies by anatomical location. The bridge of nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Stage 4 pressure injuries can extend into muscle and/or supporting structures (e.g. fascia, tendon or joint capsule) making osteomyelitis possible. Exposed bone/tendon is visible or directly palpable.</p>	<p>Full thickness tissue loss in which the ulcer base is covered by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar is removed to expose the base of the wound, the true depth (and therefore Stage) cannot be determined. Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as "the body's natural (biological) cover" and should not be removed.</p>	<p>Purple or maroon localized area of discoloured intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, moist, boggy, warmer or cooler as compared to adjacent tissue. Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and be covered by thin eschar. Evolution may be rapid, exposing additional layers of tissue even with optimal treatment.</p>



(adapted from Ho and Robinson, 2015) and reported in Dhoonmoon et al, 2023)

MANAGEMENT

OLDER ADULTS

- DEVELOP A PREVENTION PLAN FOR THOSE FOUND AT RISK OF LOSS OF SKIN INTEGRITY (EO)
- A STRUCTURED APPROACH TO SKIN CARE MAY IMPROVE SKIN INTEGRITY (II) AND DECREASE INCONTINENCE ASSOCIATE DERMATITIS (III)
- USE OF SKIN CLEANSERS OR CLEANSERS WITH MOISTURISERS MAY LESSEN SKIN DRYNESS COMPARED TO SOAP AND WATER (III)
- AVOID PRODUCTS THAT MAY IRRITATE THE SKIN



MANAGEMENT

- DRY SKIN THOROUGHLY, GENTLY AND CAREFULLY AFTER WASHING, AVOID RUBBING (EO)
- AVOID DRYNESS OR MACERATION OF SKIN (E.G. MOISTURISE DRY SKIN, AVOID SUSTAINED CONTACT OF SKIN WITH FLUIDS, ENCOURAGE CONTINENCE) (EO-III)
- MOISTURISE DRY SKIN AT LEAST TWICE DAILY (II)

MANAGEMENT

- PROTECT SKIN EXPOSED TO FRICTION:
 - * CONSIDER PROPHYLACTIC SOFT SILICONE FOAM DRESSINGS ON BONY PROMINENCES (II)
 - * CONSIDER USE OF SILK-LIKE FABRICS, TO REDUCE SHEAR AND FRICTION (III)
 - * AVOID VIGOROUS MASSAGE OVER BONY PROMINENCES (EO)
- EMPLOY CORRECT LIFTING AND MANUAL HANDLING TECHNIQUES TO AVOID FRICTION AND SHEAR (IV)
- MAINTAIN OPTIMAL NUTRITIONAL STATUS WITH ADEQUATE CALORIES, HYDRATION, PROTEIN, VITAMINS AND MINERALS TO MEET THE PERSON'S NEEDS (EO)

MANAGEMENT

- AT THE END OF LIFE, OPTIMISE THE BALANCE OF PEOPLE'S PREFERENCES, STRATEGIES TO PROMOTE SKIN INTEGRITY, AND PROMOTING COMFORT AND DIGNITY (EO)

MANAGEMENT

➤ APPLYING A SKIN PROTECTANT OR MOISTURE BARRIER PRODUCT MAY HELP PREVENT IAD (III)

➤ REDUCE MOISTURE

Review pad prescriptions regularly

- Correct Pad style and absorbency
- Ensure pads are the right size
- Weight gain/weight loss – check for changes
- Good Nutrition

Reduce Moisture/Irritants

- Daily Skin inspection
- Troubleshoot wet beds
- Ensure toileting program is maintained, toilet before bed
- Change when pad indicator line is 70%
- Change when faecal incontinence has occurred
- Gentle clean and restore the skin

Reduce friction with better fitting

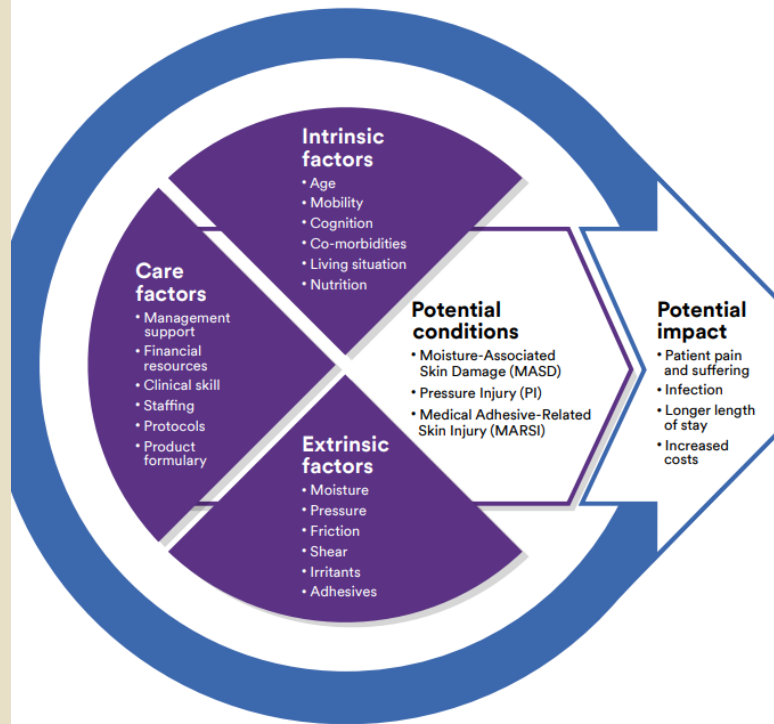
- Follow the Pad Changing Competency to improve skills.
- Improve the comfort of the wearer and reduce risk of leakage

➤ GENTLY SMOOTH ON MOISTURISER OR BARRIER CREAM IN THE DIRECTION OF BODY HAIR, DON'T RUB

MANAGEMENT

A HOLISTIC FRAMEWORK FOR SKIN DAMAGE

Multiple factors impacting skin damage¹⁰



Four factors that impact outcomes



ed from: 1) Campbell, Skin Safety Model; and 2) Medical Adhesives and Patient Safety: State of the Science

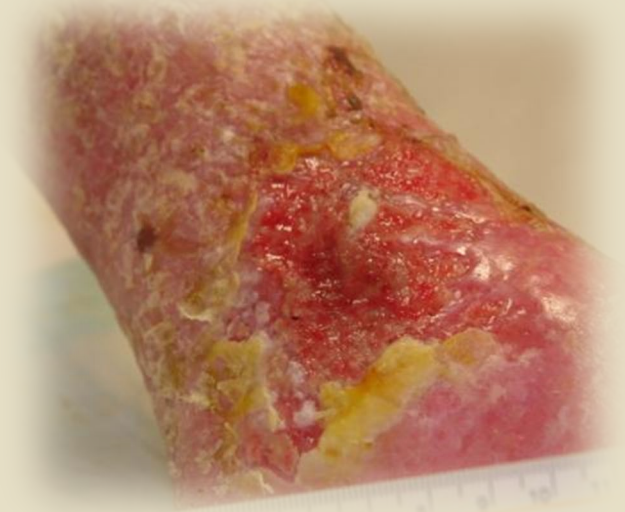
PREVENTION

- EFFECTIVENESS OF SILICONE, FOAM, AND HYDROCOLLOID
- DRESSINGS IN PI PREVENTION AND MANAGING PERIWOUND SKIN
- REDUCING INJURIES IN HEALTHCARE WORKERS WEARING PPE
- ADDRESSING SKIN CARE NEEDS



SURROUNDING SKIN

- CELLULITIS
- OEDEMA
- FOREIGN BODIES
- ECZEMA
- MACERATION
- WARMTH
- CAPILLARY REFILL TIME
- COLOUR



ON-LINE RESOURCES

[HTTPS://RESEARCH.QUT.EDU.AU/CCM/PROJECTS/WOUND-CARE-IN-RESIDENTIAL-AGED-CARE-FACILITIES-NATIONAL-DISSEMINATION/](https://research.qut.edu.au/ccm/projects/wound-care-in-residential-aged-care-facilities-national-dissemination/)



Skin Care

promoting healthy skin
Champions For Skin Integrity

TIP SHEET

- ✓ Use unscented, **soap-free** body wash
- ✓ **Moisturise** skin twice daily—apply in the direction of hair growth
- ✓ **Pat** skin dry, do not rub
- ✓ **Protect** skin from friction or rubbing (e.g. from shoes or rough surfaces)
- ✓ Eat a **healthy** balanced diet and drink six to eight glasses of **fluid** every day
- ✗ Avoid **overheating** skin
- ✗ Avoid leaving skin in contact with **moisture** (e.g. sweating)—barrier creams may help
- ✗ Avoid **tapes** and adhesives on the skin

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IN AGEING:

A. THE EPIDERMAL CELLS REDUCE IN SIZE AND THE DERMIS BECOMES THINNER

B. THE EPIDERMAL CELLS GROW AND THE DERMIS HYPERTROPHIES

C. THE EPIDERMAL CELLS BECOME WEAK

D. SEBUM IS PRODUCED IN EXCESS

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D. SEBUM IS PRODUCED IN EXCESS

WITH AGING, THE OUTER SKIN LAYER (EPIDERMIS) THINS, EVEN THOUGH THE NUMBER OF CELL LAYERS REMAINS UNCHANGED. THE LOSS OF THE ELASTIC TISSUE (ELASTIN AND COLLAGEN) IN THE SKIN WITH AGE CAUSES THE SKIN TO HANG LOOSELY. ... THIS IS CAUSED BY A FLATTENING OF THE AREA WHERE THE EPIDERMIS AND DERMIS (LAYER OF SKIN UNDER THE EPIDERMIS) COME TOGETHER.

References

Wounds UK, Best Practice Statement: Maintaining Skin Integrity. 2018, London: Wounds UK.
<https://www.wounds-uk.com/resources/details/maintaining-skin-integrity>

Wounds Australia. Standards for Wound Prevention and Management. 3rd edition. Cambridge Media: Osborne Park, WA; 2016. <http://www.woundsaustralia.com.au/2016/standards-for-wound-prevention-and-management-2016.pdf>

Lichterfeld A, et al. Evidence-Based Skin Care. *J Wound Ost Cont Nurs* 2015; 42: 501-524.

Beeckman D, et al. Incontinence-associated dermatitis: moving prevention forward. Proceedings of the Global IAD Expert Panel, 2015, Wounds International. www.woundsinternational.com

Pather P, et al. Effectiveness of topical skin products in the treatment and prevention of incontinence-associated dermatitis: a systematic review. *JBIC Database Syst Rev Implement Rep* 2017; 15: 1473-1496.

Beeckman D, et al. Interventions for preventing and treating incontinence-associated dermatitis in adults. *Cochrane Database Syst Rev* 2016; 11: CD011627. 7. Gray M, et al. Incontinence-associated dermatitis: A comprehensive review and update. *J Wound Ost Cont Nurs* 2012; 39: 61-74.

Carville K, et al. The effectiveness of a twice-daily skinmoisturising regimen for reducing the incidence of skin tears. *Int Wound J* 2014; 11: 446-53.

Danby S, et al. Effect of aqueous cream BP on the skin barrier in volunteers with a previous history of atopic dermatitis. *Br J Dermatol* 2011; 165: 329-334.

EPUAP, NPIAP and PPPIA, Prevention and treatment of Pressure Ulcers, Haesler E (Ed) 2019
EPUAP/NPIAP/PPPIA <http://pppia.org/guideline/>

Beeckman D, et al. A 3-in-1 perineal care washcloth impregnated with dimethicone 3% versus water and pH neutral soap to prevent and treat incontinence-associated dermatitis: RCT. *J Wound Ost Cont Nurs* 2011; 38: 627-34

QUESTIONS?

THANK YOU