Skin Care Guidelines for Occupational Therapy

Site Applicability

Providence Health Care.

Practice Level

- Basic Skill: Occupational Therapists

Need to Know

This guideline was adapted from BD-00-07-40047 VCH-PHC Occupational Therapy Skin Care Guideline.

Table of Contents

Guideline

Purpose and Scope

The development of a pressure ulcer significantly impacts the individual's ability to participate in activities of daily living (ADL). The occupational therapist's expertise can be used to identify causative factor(s) to skin breakdown and to make recommendations(s) that protect the skin or promote wound healing while promoting participation in meaningful occupation.

The Occupational Therapy Skin Care Guideline was developed with the intention of:

- Supporting occupational therapy practice through the continuum of care including acute; rehabilitation, residential and community services;
- Providing evidence-based recommendations to direct occupational therapy practice;
- Providing tools and resources to facilitate clinical reasoning;
- Integrating recommendations into broader inter-professional practice.

An inter-professional team provides best practice for the prevention and treatment of pressure ulcers. As such, some aspects of the Occupational Therapy Skin Care Guideline may be completed by other disciplines depending on the individual practice environment. The interventions discussed focus on the occupational therapy contribution. The guideline includes a schematic summarizing the flow of care followed by evidenced-based recommendations applied to occupational therapy practice across the continuum of care. Furthermore, explanations of terms and concepts used throughout the Occupational Therapy Skin Care Guideline are included in Appendix A – Glossary of Terms.

In order to bring equal emphasis to the prevention of skin breakdown, it was elected to refer to a skin care guideline rather than a wound care guideline.

Please note: the Occupational Therapy Skin Care Guideline is not intended for venous leg ulcers, burns or arterial wounds.

Levels of Evidence

The occupational Therapy Skin Care guideline has been developed using:

- Existing guidelines (see Appendix I – Practice Guideline references)
- Research evidence (see Appendix J – search strategies and Appendix K – Bibliography)
- Consensus from occupational therapists from Vancouver Coastal Health (VCH) and Providence Health Care (PHC) with expertise in pressure ulcer prevention and treatment where caps in the current research evidence exist.

The table on the next page reflects the strength of evidence for specific recommendations within the Registered Nurses of Ontarrio (RNAO) guidelines. These are used to provide a summary of available evidence. In order to improve the readability and flow of this document, levels of evidence for individual recommendations in the Occupational Therapy Skin Care Guideline are not listed. Additional information is included in Appendix B – Grading Levels of Evidence.

Table 1 Levels of Evidence for interdisciplinary practice recommendations

Quick Reference Guide for the Treatment and Prevention of Pressure Ulcers

	Recommendations	RNAO Guidelines		Overall
		Prevention[a]	Management[a]	Level of Evidence
	Identify and Treat the Cause			
1	Complete a patient history and a targeted physical examination to determine general health and risk factors that may lead to pressure ulcer formation or that may affect healing of existing ulcers.	1.1, 1.2(IV)	1, 12, 21(C)	IV
2	Assess and modify situations where pressure may be increased.	3.1(IV), 3.5(Ia), 3.6(Ia), 3.7(IV), 3.8(IV)	11(C), 13(A), 14(B), 15(B), 16(B), 17(C), 18(C)	IV
3	Maximize nutritional status.	3.11(IV, Ib)	7(B), 8(C)	IV
4	Manage moisture and incontinence.	3.9(IV), 3.10(IV)	34(B)	IV
5	Maximize activity and mobility, reducing or eliminating friction and shear.	1.3(IV), 3.2(IV), 3.7(IV), 3.12(IV)		IV
	Address Patient-centred Concerns			
6	Assess and control pain.	3.3a(IV), 3.3b(IV), 3.3c(IV)	9(C), 10(B)	IV
7	Assess and assist with psychosocial needs.		2, 3	IV
	Provide Local Wound Care			
8	Stage, assess and treat the wound. Provide an optimal wound environment consistent with the principles of *Preparing the wound bed*.	1.4a(IV), 1.5(IV), 2.1(IV)	4(C), 5(C), 6(C), 19(C), 20(C), 22(C), 23(C), 24(B), 25(C), 26(B), 27(C), 28(C), 29(B), 30(A), 31(B/C), 32(A), 33(C), 34(B), 37(A), 38(B), 39(C), 40(A), 41(A), 42(C), 43(C), 44(B)	III
9	Introduce adjunctive modalities or biologically active dressings where appropriate.		35(A), 36(A/B/C)	Ia
10	Consider surgical intervention for deep non-healing ulcers (Stage III and Stage IV).		45	IV
	Provide Organizational Support			
11	Develop an interdisciplinary team specific to the needs of the patient.		57	IV
12	Educate patients, caregivers, and health-care providers on the prevention and treatment of pressure ulcers.	5.1(IV), 5.2(III) 6.2(IV)	48(C), 49(C), 50(C), 519(C), 52(C)	IV

Source: Keast, DH et al. (2006). Best Practice Recommendations for the prevention and treatment of pressure ulcers: Update 2006. Wound Care Canada, 4 (1), pp 31-43. Copied and used with permission publisher.

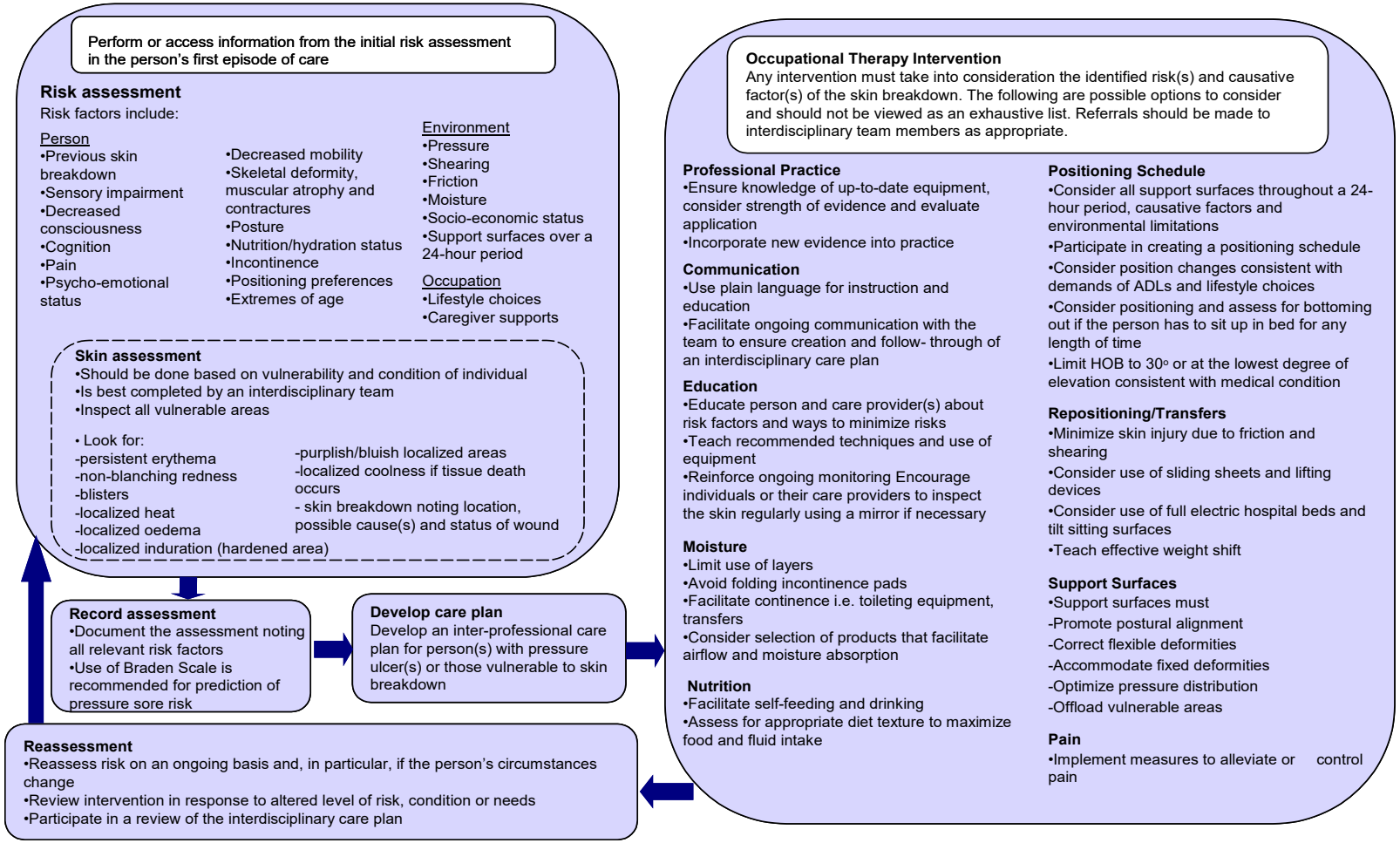
Registered Nurses Association of Ontario (RNAO). (2011). Risk assessment and prevention of pressure ulcers. Toronto ON.

Schematic of Best Practice for the Prevention and Treatment of Pressure Ulcers

The Schematic of Best Practice for the Prevention and Treatment of Pressure Ulcers is designed to provide an overview of the process for assessment and intervention for occupational therapists. It emphasizes interprofessional responsibilities for risk assessment and skin assessment, and focuses on occupational therapy's contributions to the interprofessional care plan. The headings in the schematic are used throughout the Occupational Therapy Skin Care Guideline to provide more in-depth information.

Diagram 1: Schematic of Best Practice For the Prevention and Treatment of Pressure Ulcers

Holistic assessment, management and interventions are the responsibility of the interprofessional team.



National Institute for Health and Clinical Excellence, September 2005 Adapted from NICE Clinical Guideline: quick reference guide – The prevention and treatment of pressure ulcers

Best Practice Recommendations for Occupational Therapy

The best practice guidelines in this section follow the flow of practice shown in diagram 1. Tools and resources are included in the handbook under the heading shown in the diagram and are intended to enable occupational therapists to incorporate the recommendations into their own practice.

The role of the occupational therapist will differ depending on the clinical practice setting. Each practice area should develop a clear understanding of interdisciplinary roles for skin assessment, management and intervention.

Holistic assessment, management and interventions are the responsibility of the interprofessional team.

Professional Practice

Occupational therapists are responsible for ensuring that they are knowledgeable of the occupational therapy skin care guideline and evaluation its application in clinical practice. They should consider the strength of the new evidence before incorporating it into practice. Knowledge of the following areas should be included:

- Etiology and risk factors predisposing to pressure ulcer development
- Use of risk assessment tools such as the Braden Scale for Predicting Pressure Sore Risk. Categories of the risk assessment should also be utilized to identify specific risks and ensure effective care planning
- Skin assessment
- Staging of pressure ulcers
- Selection and/or use of support surfaces and other equipment
- Development and implementation of an individualized care plan
- Demonstration of positioning/transferring techniques to decrease risk of tissue breakdown
- Instruction on accurate documentation of pertinent data
- Roles and responsibilities of team members in relation to pressure ulcer risk assessment and prevention

Recommended Courses

The following are courses recommended for occupational therapists:

Course title	**Introduction to Basic Wound Management**
Description	This session providers an overview of the anatomy and physiology of the skin, phases of wound healing, factors affecting healing, wound assessment, types of wounds, wound products and treatment,

Course title	Advanced Wound Management: Pressure
Description	This session covers the assessment of the four types of pressure, sources of pressure, pressure reduction versus pressure relief, anatomy and physiology, and management, of pressure wounds. Prerequisites: Attendance at the wound management introduction session, minimum three months experience in the community.

Recommended External courses

Canadian Association of Wound Care, including S-Series course and related pre-readings: http://www.cawc.net

The basic principles of wound healing: http://www.cawc.net/open/conference/best-practice-series/Wound-Healing.pdf

Best practice recommendations for the prevention and treatment of pressure ulcers: https://www.woundscanada.ca/health-care-professional/publications/dfc-2

Risk Assessment

Occupational therapists should perform or access information for the initial risk assessment in the person's first episode of care. They should also perform a risk assessment on entry to a health care setting, and repeat on a regularly scheduled basis, or when there is a significant change in the person's condition.

Acute Care	Initial assessment at admission and reassess at least every 48 hours, or when the patient's condition changes
Long Term Care	Initial assessment at admission , reassess weekly for the first four weeks, then quarterly after that and when ever the residents condition changes
Home Health Care	Initial assessment at admission and when there are risk factors, reassess every visit

Risk assessment tools such as the Braden Scale are useful as an aid to structure assessment and documentation. The literature stresses the importance of using risk assessment tools and scales as an adjunct to, but not a replacement for, clinical judgement.

Braden Scale

The Braden Scale predicts the risk of pressure sores, but does not predict whether a client will develop a pressure sore. Research using the Braden Scale for Predicting Pressure Sore Risk has a demonstrated reliability and validity in multiple clinical settings. Predictive validity of cut off score varies across different populations:

16 for acute care settings

18 for nursing home residents

19 for home health patients

When the frequency of monitoring is low, the risk will likely increase. However, as with most screening tools, the Braden Scale cannot stand alone in predicting pressure ulcers in individual patients. Regular skin assessment for early signs of injury is an essential adjunct to risk assessment. See Appendix C Braden Pressure Ulcer Risk Assessment for the Braden Scale tool and guidelines

Risk Factors

Particular attention should be paid to vulnerable areas, especially over bony prominences. When skin breakdown is present, identify cause(s), for example bed versus chair acquired wound.

Clients who are restrict to bed and/or chair, or those experiences surgical intervention, should be assessed for skin breakdown due to pressure, friction and shear in all positions, and during lifting, turning and repositioning.

Assessment of mobility should include all aspects of independent movement including walking, ability to reposition (for example in bed or a chair), or transfer (for example from bed to chair).

Person	Environment
Previous skin breakdown	Pressure
Sensory impairment	Shearing
Decreased consciousness	Friction
Cognition	Moisture
Pain	Socio-economic status
Psycho-emotional status	Support surfaces during the 24 hour period
Decreased mobility	Occupation
Deformity, muscular atrophy and contractures	Lifestyle choices
Posture	Caregiver supports
Nutrition/hydration status	
Positioning preferences	
Extremes of age	

Skin Assessment

The skin assessment should be done based on the vulnerability and condition of the individual. It is best completed by an interdisciplinary team. During the assessment, all vulnerable areas should be inspected. Look for:

Persistent erythema

Non-blanching redness

Purplish/bluish localized areas. Note: if skin has dark pigmentation, black or brown skin tones, then redness or purplish/bluish colours may be difficult to identify.

Blisters

Localized heat

Localized edema

Localized induration (hardened area)

Localized coolness, if tissue death occurs

Skin breakdown noting location, possible cause(s) and status of wound

Use indicators of wound staging and wound healing

Use assessment tools available (paper or electronic documentation)

Refer to Appendix D – Skin care Risk Assessment

Record Assessment

Document the assessment of risk, noting all relevant factors. All data should be document at the time of assessment/reassessment, Refer to Appendix D – Skin care Risk Assessment

Develop a Care Plan

An individualized plan of care is based on assessment data, identified risk factors and the client's goals. The plan is developed in collaboration with the client, significant others and health care professionals.

The goals of treatment may change through the continuum of prevention, treatment and palliation based on ongoing assessment. A list of care planning consideration is provided in Appendix E – Care Planning Considerations.

Occupational Therapy Interventions

Any intervention must take into consideration the identified risk(s) and causative factor(s) of the skin breakdown. The following are possible options to consider and should not be viewed as an exhaustive list. Referrals should be made to interdisciplinary team members as appropriate.

Interventions must be evaluated for their effectiveness in preventing and treating pressure ulcers through such mechanisms as ongoing client monitoring and identifying client/equipment variables

that may lead to best skin care outcomes. Quality assurance and audits may also be used to evaluate effectiveness of interventions.

1. Positioning Schedule

Occupational therapists should consider all support surfaces throughout the 24 hour period, causative factors and environmental limitations. They should participate in created a 24 hour schedule for the persons vulnerable to skin breakdown or with existing pressure ulcers.

When developing the schedule, changes consistent with activities of daily living (ADL) routines and lifestyle choices should be considered, as well as the acceptability and needs of the person and care provider.

In bed, the person should be turned at least every two or four hours on a pressure-redistributing mattress, or at least every two hours on a nonpressure-redistributing mattress. In chair, the person should be repositioned every 15 minutes if the client is independent with weight shifting or every hour if assistance is required.

For bed-acquired pressure ulcers, the time spent in bed (weight bearing on that skin surface) should be minimized. For chair-acquired pressure ulcers, the time spent sitting on the ulcer should be minimized

2. Repositioning Transfers

Mobilizing, positioning and repositioning interventions should be determined by: general health status, location of ulcer, general skin assessment, comfort, and the needs of the persons and care provider(s). Occupational therapists should:

Maximize the person's preferred activities and mobility;

Identify appropriate methods for repositioning to minimize skin injury due to friction and shearing;

Use devices to enable independent or assisted positioning and transfers (e.g. sliding sheets, transfer board, bedrails).

In order to minimize shearing in a high Fowler's position in bed, clients should be moved up towards the head of the bed first, have their foot/knee section raised next and, lastly, the head of the bed should be elevated.

Mechanical lifting devices should be used to assist clients during transfer and position changes

Equipment Considerations: Friction

Friction is the force that resists motion between two surfaces that are in contact with one another. Friction enables clients to remain seated or lying without risk of moving.

When there is a higher degree of friction, there is a higher tendency of an object not to move. Preventing movement around high-risk areas can lead to skin breakdown by limiting offloading and weight shifting.

Additionally, friction and shear go hand in hand. Higher coefficients of friction have potential to create high shear, exposing at-risk areas to skin breakdown.

How to manage friction: friction is minimized by reducing the coefficient of friction (resistance) between the two surfaces in contact. Often this is accomplished by examining cover

construction, materials used in support surface construction, and their interaction between the body and any additional layers.

Consider the cover, the support surface materials, additional layers and their interaction with each other and the person.

Equipment Considerations: Shear

Shear is a mechanical force that moves the overlying skin and soft tissue in an opposite direction to the underlying bony structures. This can result in breakdown of skin from the inside out.

A common example of shear strain occurs during raising/lowering of the head of the hospital bed. In this example, skin overlying the trunk and pelvis "sticks" to the mattress as deeper tissues and structures (e.g. spine and pelvic girdle) move in the opposite direction. In this scenario, it is common to see skin breakdown over the coccyx and sacrum.

A wound caused by shear forces can appear irregular or elongated in shape.

How to minimize shear: shear is minimized by enabling skin and body structures to move in the same plane.

3. Support Surfaces

The use of full electric hospital beds and tilt-in-space sitting surfaces should be considered so that the person and caregiver can reposition for pressure redistribution and comfort. Reclining chairs and reclining wheelchairs increase the risk of friction and shearing, so should be avoided.

For weight shifting in chair or wheelchair, unweighting using arms may be inadequate. Forward flexion or side to side distribution should be considered instead if balance is sufficient.

With regards to support surfaces equipment, current research rarely identifies specific makes or models.

Occupational therapists are advised not to use donut type devices or products that concentrate pressure on another area.

Pressure mapping or tissue oxygenation (TcPO2) measurement using a radiometer electrode may be useful tools to determine if adequate pressure redistribution is achieved.

Equipment Considerations: Pressure

"pressure" refers to the force of gravity on the parts of a client's body in contact with a surface area. When a client remains in the same position for a long time, the constant pressure against the skin reduces the blood supply to that tissue area. Due to a lack of oxygen and nutrients, this can lead to cell death, tissue damage and, ultimately, wound development. A client is most likely to develop a wound at bony prominences where there is less soft tissue between a client's bony structures and the surface supporting them. A wound caused by direct pressure is usually round in shape with defined edges.

How to minimize pressure: In order to minimize pressure to a vulnerable skin area, use on of the following strategies:

Increasing the total support surface area in contact with the client's skin. This can be accomplished either through the principles of improved immersion and/or envelopment

Completed removing the contact between the vulnerable skin area and support surface (e.g. offloading and force isolation).

Reducing the contact between a vulnerable skin area and the support surface by shifting this contact pressure to other areas of a client's body.

Support surfaces must:

- Promote postural alignment
- Correct flexible deformities
- Accommodate fixed deformities
- Optimize pressure redistribution
- Offload vulnerable areas

Choose surfaces that

- Allow immersion without resistance
- Conform to bony prominences
- Do not have significant memory
- Do not "bottom out"
- Relieve shear caused by person's movement
- Prevent skin maceration
- Maximize comfort

Consider the effect on transfers and mobility when selecting the support surfaces:

- Transfer technique
- Stability of the surface
- Surface to floor height

Skin should be closely observed for deterioration as ulcers can worsen within 24 hours.

Equipment considerations: Functional Demands

Equipment selected must:

- promote the maximum participation in the client's activities and
- Meet the client's requirement for use

Skin integrity interventions and functional considerations are often not congruent. Finding a balance between the two is often a challenge. The therapist's role is to inform the client regarding available equipment options and assist them to make educated decisions around equipment provision.

Managing Functional Demands

Prospective equipment needs to be evaluate in terms of its impact on a client's functional activities and routines. Examples include:

- Bed mobility
- Transfers
- Toileting
- Bathing
- Community Mobility

The following is recommended:

1. Identify all activities and routines that a client needs to perform and
2. Identify the impact of prospective equipment on these activities and routines, as well as current and potential skin integrity issues.

Additional Client requirements that need to be considered include:

- Effectiveness
- Affordability
- Operability
- Dependability
- Portability
- Compatibility
- Flexibility
- Ease of maintenance
- Securability
- Learnability
- Personal acceptability
- Physical comfort
- Supplier reparrability
- Physical security
- Consumer repairability
- Ease of assembly surface (e.g. offloading and force isolation)

Positioning devices should be used, e.g. pillows or foam wedges, to avoid contact between bony prominences. Also, devices to totally relieve pressure on the heels and bony prominences of the feet should be used. A 30 degree turn to either side is recommended to avoid positioning on the trochanter.

4. **Beds**

Shearing forces can be reduced by maintaining the head of the bed at the lowest elevation

consistent with medical conditions and restrictions. A 30-degree elevation or lower is recommended, but accommodate ADLs. For example, facilitate, facilitate eating while sitting upright in bed.

All vulnerable persons should receive, as a minimum provision a high specification foam mattress

Note: pressure redistribution support devices do not eliminate the need for a turning schedule.

5. **Decision Trees**

three decision trees have been developed to assist occupational therapists in selecting equipment to address skin care needs. They address common interventions for skin breakdown. These include; the Mattress and Overlay Support Surface Decision Tree (Appendix F), the Heel Protection Decision Tree (Appendix G) and the Seating Decision Trees (Appendix H). For other body parts at risk, such as occiput, ears and elbows, the same principles of pressure redistribution and shear reduction apply.

The decision trees do not refer to specific products. The intent is to generate equipment descriptions based on identified parameters. These allow the occupational therapists to explore the broad range of products available to best fit the person's level of risk.

To better understand what equipment matches the product parameters, it is suggested that the occupational therapists engage in a dialogue with a medical equipment vend, view manufacturers websites and critically analyze the products available.

The seating decision tree is comprised of three client profiles with low, moderate or high risk for skin breakdown. Based on the information collected in assessment, the profiles are intended to develop a clinical picture of an individual and to guide intervention strategies.

Some useful websites for wheelchair and seating equipment include:

Wheelchair Net: https://staging.wheelchairnetwork.org/

Wheelchair cushion differnces: https://www.spinlife.com/wheelchair-cushions-and-backs/category.cfm?categoryID=89

SunnyHill Seating and Mobility http://www.seatingandmobility.ca/Equipment.aspx

For all persons vulnerable for skin breakdown or who have skin breakdown, refer to Appendix F – Mattress and Overlay Support Surface Decision Tree and Appendix G - Heel Protection Decision tree

6. **Seating**

Postural alignment, distribution of weight, balance, stability, support of feet and pressure redistribution should all be considered when positioning individuals in chairs or wheelchairs.

Pressure-reducing devices for seating surfaces should be used – egg crate or basic foam is insufficient.

For all persons vulnerable for skin breakdown or who have skin breakdown, refer to the Seating Decision Trees in Appendix H.

Equipment Considerations – Postural Needs

Position and posture impact tissue loading. The goal of positioning interventions is to provide sufficient external support to restore normal posture without restricting function, and to maximize pressure distribution to prevent tissue trauma.

How to Manage Postural Needs – the seating and positioning assessment is a complex process that may include:

- Pre-mat information gathering
- Assessment in wheelchair
- Mat assessment
- Anatomic measurements
- Simulation with equipment
- Development of targeted outcomes
- Fitting, training/education and follow-up

It is beyond the scope of this document to fully explain the seating and positioning process and the reader is encouraged to pursue additional resources and professional development opportunities to increase their knowledge on this topic.

Even distribution over weigh bearing surfaces is especially important for clients who have increased risk of pressure problems. Individuals who fall into this category may demonstrate one or more of the following characteristics:

- Inability to shift weight independently
- Sensory impairment
- Emaciation
- Asymmetrical body alignment (e.g. pelvic obliquity and hip dislocation)

For these clients, seating and positioning interventions can often be categorized into three general aims. The first aim is prevention of abnormal postures, orthopedic deformities, and/or pressure problems. This is often the focus in the first stages of treatment. The second aim is correction of abnormal postures, functional orthopedic deformities and healing/correction of pressure problems. The third aim is accommodation of abnormal postures and orthopedic deformities that are usually fixed.

7. **Pain**

Measures to alleviate pain or control pain should be implemented.

Occupational therapists should consider the impact of pain. Pain may decrease mobility and activity. Pain control measures may include combinations of effective medication, therapeutic positioning, support surfaces and other non-pharmacologic interventions.

The level of pain should be monitored on an ongoing basis, using a valid pain assessment tool. Pain assessment should include whether the individual is experiencing pain, causes of pain, level of pain (using an appropriate tool), location and management interventions.

Occupational therapists should consider the client's risk of skin breakdown related to the loss of protective sensation or the ability to perceive pain and to respond in an effective manner (e.g. impact of analgesics, sedatives, neuropathy).

8. **Moisture**
the use of layers between person and the pressure redistribution support surfaces should be limited as it reduces immersion into the surface.

The folding of incontinence pads should be avoided. Thin, disposable pads may be more conforming than cotton pads. Furthermore, continence should be facilitated; e.g. toileting equipment, transfers.

Occupational therapists should consider selection of products that facilitate airflow and moisture absorption. Moist skin (e.g. from incontinence and prolonged bathing) loses its protective oils and is more likely to abrade and blister.

Equipment Considerations: Moisture

Excessive moisture on a client's skin surfaces can also contribute to the development of wounds. Over time, this excess moisture may cause the bonds between epithelial cells to weaken, resulting in the maceration (or softening) of the epidermis. Perspiration, bowel and bladder incontinence can all be sources of excessive moisture on a client's skin.

Wound exudate often contains not only water but also cellular debris and enzymes. This cocktail can be corrosive to the intact skin surrounding the wound. Chronic urinary incontinence provides an excellent environment for the growth of bacteria, resulting in the production of ammonia. Ammonia increases the pH of the skin, reducing the protective capacity of a thin, oily film – the acid mantle – as a bacterial barrier. This barrier sits on the outermost layer of our skin, providing further opportunity for chemical irritation by urine, feces and excess moisture to cause skin breakdown. In terms of fecal incontinence, digestive enzymes are normally deactivated when feces passes through the gastrointestinal tract. When feces mix with urine on the skin, the elevated pH levels (as described previously) reactivate the digestive enzymes, further increasing the risk of skin breakdown and local bacterial infection.

How to manage moisture – equipment can help minimize excess moisture on a client's skin by:

- Allowing moisture to drain away from the skin surface
- Absorbing moisture away from the skin surface, and
- Drying moisture on the skin surface

9. Heat

Equipment Considerations: Heat

Heat is generated internally via metabolism and activity and absorbed externally via sun and other sources, such as heating blankets.

Higher temperatures can increase metabolic demands and oxygen consumption. When combined with sustained pressure, high temperatures can have the net result of damaging tissue through ischemia and rapid reperfusion (when pressure is removed).

Elevated temperatures can lead to diaphoresis (or excessive sweating) as well as increased friction between sweaty (and somewhat macerated) skin areas and support surfaces.

How to minimize heat – heat can be reduced using the following methods:

- Conduction – transfer of heat form a warmer object to a cooler object when the two objects are in contact with each other (i.e. direct cooling)
- Convection – heat loss that occurs in response to the movement of a fluid or gas. For example, heat can be carried away from a skin area via circulation of cooler air over that skin area.

10. Nutrition

Self-feeding and drinking should be facilitated for optimal intake. Occupational therapists should also assess for appropriate diet texture to maximize safe food and fluid intake.

Consult dietitian as required, particularly for Stage 3 and 4 pressure ulcers.

11. Communication

Occupational therapists should facilitate ongoing communication with the tam to ensure creation and follow through of an interdisciplinary care plan.

When communicating, plain language for instruction and education should be used. Written materials for the person and caregivers should be aimed at a grade four level of understanding.

12. Education

Occupational therapists should educate he person and care provider(s) about causes and risk factors for pressure ulcer development and ways to minimize risks. This would include teaching recommended techniques and the use of equipment. Written information about maintenance and servicing of equipment is required for the person and their care provider(s).

Ongoing monitoring needs to be reinforced. Occupational therapists should encourage individuals or their care provider(s) to inspect the skin regularly using a mirror if necessary.

The person and care provider(s) should be educated about the fact that after the wound heals, the area does not heal to its previous strength, i.e. once a pressure sore, always a pressure sore. It is prone to re-injury and a prevention plan must be created.

Client resources include:

- VCH: Client information pamphlet “Preventing Pressure Ulcers” (Catalogue # FO.650.P928) http://vch.eduhealth.ca/PDFs/FO/FO.650.P928.pdf
- Client information pamphlet “Wound Care Program for People with Spinal Cord Injuries” (Catalogue # GN.890.P212) http://vch.eduhealth.ca/PDFs/GN/GN.890.P212.pdf
- RNAO: Taking the Pressure Off: Preventing Pressure Ulcers http://rnao.ca/bpg/guidelines/fact-sheets/taking-pressure-preventing-managing-pressure-injuries

13. Reassessment

Occupational therapists should reassess risk on an ongoing basis and in particular, if the person’s circumstances change. Intervention should be reviewed in response to an altered level

of risk, condition or needs. Occupational therapists should also participate in review of the interdisciplinary care plan.

Monitoring/Follow up.
Monitoring is the action of observing a situation for any changes, positive or negative, which may occur over time. The greater the risk for skin breakdown, the severity of the wound and/or the complexity of intervention(s), the more monitoring will be required.

How is the occupational therapist involved in monitoring? The occupational therapist has active involvement in the implementation phase. Catching and solving problems early can prevent serious setbacks.

Once the intervention is seen to be effective, there is greater reliance on the person and/or primary care provider(s) to continue monitoring. The occupational therapist must ensure the person and care provider(s) clearly understand expectations.

When identifying team member(s) and/or care provider(s) responsible for monitoring, consider the following:

A monitoring plan should be made in the care plan with responsibilities assigned for each component. It should be reviewed to reflect changes along the continuum of provision of care to a person in order to prevent skin breakdown and/or promote wound healing.

When providing a new piece of equipment the occupational therapist is responsible for ensuring the appropriate selection and set up. This may involve a daily check to troubleshoot and demonstrate the use of equipment.

Appendices

- Appendix A – Glossary of Terms
    - Appendix A1 – Pressure Ulcer Definitions and Stages
    - Appendix A2 - Interdisciplinary Grid for Topical Treatment of Wounds
    - Appendix A3 – Physical Concepts Related to Support Surfaces
    - Appendix A4 – Categories of Support Surfaces
    - Appendix A5 – Features of Support Surfaces
- Appendix B – Grading of Evidence
- Appendix C – Braden Scale
- Appendix D - Skin Care Risk Assessment Form Guidelines
    - Appendix D1 – Form Template
- Appendix E – Care Planning Considerations
- Appendix F – Mattress and Overlay Support Surfaces Decisions Tree for Persons at Risk or with existing wounds

- Appendix G – Heel Protection Decision Tree
- Appendix H – Seating Decision Tree (Low Risk)
    - Appendix H1 – Seating Decision Tree (Moderate Risk)
    - Appendix H2 - Seating Decision Tree (High Risk)
- Appendix I – Practice Guideline References
- Appendix J – Search Strategies
- Appendix K - Bibliography

Appendix A: Glossary of Terms

Knowledge of terminology is essential for occupational therapists to effectively communicate with team members. The following tables provide explanations of terms and concepts used throughout the Occupational Therapy Skin Care Guideline.

Pressure Ulcer Definitions and Stages defines the extent of damage to the skin and underlying tissues.

The first two columns of the Interdisciplinary Decision Grid for Topical Treatment of Wounds illustrate wound healing. This information can be used to evaluate the effectiveness of an intervention.

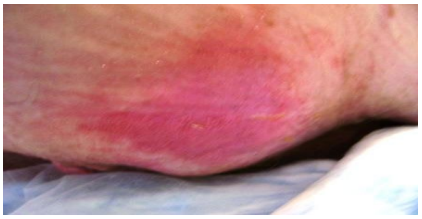
The Physical Concepts Related to Support Surfaces, Categories of Support Surfaces and Features of Support Surfaces documents were developed by the National Pressure Ulcer Advisory Panel (NPUAP) to provide a common understanding of terms that refer to basic physical concepts, design considerations and product characteristics.

Please note: In January 2007, NPUAP identified the term “pressure redistribution” to supersede the terms “pressure reduction” and “pressure relief.” However, these terms may still be found in the guidelines as they are referenced from earlier sources.

Appendix A 1 – Pressure Ulcer Definition and Stages

Pressure Ulcer Definition

A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction. A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors is yet to be elucidated.

Suspected Deep Tissue Injury		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, mushy, boggy, warmer or cooler as compared to adjacent tissue. Further description: 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 become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with optimal treatment.
Stage I:		Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area. Further description: The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Stage I may be difficult to detect in individuals with dark skin tones. May indicate "at risk" persons (a heralding sign of risk).
Stage II:		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. Further description: Presents as a shiny or dry shallow ulcer without slough or bruising.* This stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation. *Bruising indicates suspected deep tissue injury

Stage III:		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 the depth of tissue loss. May include undermining and tunnelling. Further description: The depth of a stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep stage III pressure ulcers. Bone/tendon is not visible or directly palpable.
Stage IV:		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. Further description: The depth of a stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Stage IV ulcers 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.
Unstageable: Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, grey, green or brown) and/or eschar (tan, brown or black) in the wound bed. Further description: 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.		

Reverse staging does not accurately characterize what is physiologically occurring in the ulcer. The progress of a healing pressure ulcer can only be documented using ulcer characteristics or by improvement in wound characteristics using a validated pressure ulcer healing tool.3

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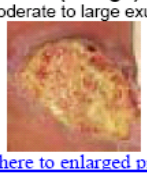
Appendix A 2: Interdisciplinary Decision Grid for Topical Treatment of Wounds (excluding burns and malignant wounds)

Note: These guidelines are provided to enable health care professionals to initiate wound treatment in a uniform manner. Normal saline compresses are not considered best practice for wound care. They may be used as an interim measure until appropriate dressings are available.

DESCRIPTION	CLINICAL PRESENTATION	TREATMENT OBJECTIVE	TOPICAL TREATMENT OPTIONS	
			SHALLOW WOUND	CAVITY WOUND
REDDENED AREA ▪ over bony prominence  click here to enlarged picture	• Intact skin • Non or slightly blanchable red area or for darker skin an area of colour change • Induration, warmth Soft tissue swelling	• **RELIEVE** Pressure/friction and shearing: • **Refer to Prevention of Pressure Ulcer Guidelines** • **PROTECT** skin from further trauma	• No dressing OR • Transparent film • Monitor area daily for further breakdown	Not applicable
NECROTIC(Eschar) ▪ nil or scant exudate  click here to enlarged picture	• Wound bed covered completely by thick leathery black, brown, yellow, gray (eschar) • Minimal exudate may be present at the wound edges • May have odour • Surrounding skin may be erythematous and indurated	• **DEBRIDE** eschar • **IDENTIFY** treat infection if present • **ADD** moisture **Exception: Do not debride dry black leg ulcers below the knee** • **Refer to Diabetic Neuropathic or Arterial ulcer care guidelines** • **Goal: Keep dry & prevent Infection**	• Hydrogel • Hypertonic saline gel • Hydrocolloid **For arterial or diabetic ulcers paint dry eschar OD with Providine sol. 10% and leave open to air**	• Hydrogel impregnated gauze packing
NECROTIC(Slough) ▪ moderate to large exudate  click here to enlarged picture	• Wound bed covered by stringy, necrotic debris (slough) often yellow, green or gray in colour • Wound has moderate to large amounts of yellow, brown exudate • Usually odourous • May have clinical signs of infection	• **DEBRIDE** slough • **IDENTIFY** and treat infection if present • **MANAGE** exudate • **PROTECT** from maceration • **LIGHTLY** fill dead space	• Hydrofiber • Alginate • Hypertonic saline gauze • Antimicrobial dressings (silver, cadexomer iodine) • Foam • Composite dressing	• Hypertonic saline gauze • Alginate • Hydrofiber • Antimicrobial dressings (silver, cadexomer iodine) • Foam cavity
GRANULATION ▪ moderate to large exudate  click here to enlarged picture	• Wound bed is clean with new granulation tissue • Moderate to large amount of exudate yellow or pink • No odour	• **MANAGE** exudate • **PROTECT** from infection / trauma • **PROTECT** from maceration • **LIGHTLY** fill dead space	• Hydrofiber • Alginate • Foam • Composite dressing	• Hydrofiber • Alginate • Hypertonic saline gauze • Foam cavity
GRANULATION / EPITHILIZATION ▪ scant exudate  click here to enlarged picture	• Wound is pale-pink to beefy red granulation tissue • Pink epithelial tissue at edges • Scant amount of pink / yellow exudate	• **MAINTAIN** moisture balance • **PROTECT** from infection/ trauma	• Hydrogel • Hydrocolloid • Composite dressing • Foam	Not applicable
MATURATION ▪ epithiliazed  click here to enlarged picture	• Intact skin • Blanchable red or darker tissue of newly formed scar • No exudate • Maturation process will take six months to two years to complete	• **PROTECT** skin from trauma • **Avoid** pressure/friction and shearing	• No dressing OR • Transparent film • Moisturize to enhance skin resilience and integrity	Not applicable

Appendix A 3: Physical Concepts Related to Support Surfaces

Term	Definition
FRICTION (FRICTIONAL FORCE)	The resistance to motion in a parallel direction relative to the common boundary of two surfaces.
COEFFICIENT OF FRICTION	A measurement of the amount of friction existing between two surfaces.
ENVELOPMENT	The ability of a support surface to conform, so to fit or mold around irregularities in the body.
FATIGUE	The reduced capacity of a surface or its components to perform as specified. This change may be the result of intended or unintended use and/or prolonged exposure to chemical, thermal, or physical forces.
FORCE	A push-pull vector with magnitude (quantity) and direction (pressure, shear) that is capable of maintaining or altering the position of a body.
IMMERSION	Depth of penetration (sinking) into a support surface.
LIFE EXPECTANCY	The defined period of time during which a product is able to effectively fulfill its designated purpose.
MECHANICAL LOAD	Force distribution acting on a surface.
PRESSURE	The force per unit area exerted perpendicular to the plane of interest.
PRESSURE REDISTRIBUTION	The ability of a support surface to distribute load over the contact areas of the human body. This term replaces prior terminology of pressure reduction and pressure relief surfaces.
PRESSURE REDUCTION	This term is no longer used to describe classes of support surfaces. The term is pressure redistribution; see above.
PRESSURE RELIEF	This term is no longer used to describe classes of support surfaces. The term is pressure redistribution; see above.
SHEAR (SHEAR STRESS)	The force per unit area exerted parallel to the plane of interest.
SHEAR STRAIN	Distortion or deformation of tissue as a result of shear stress.

Appendix A 4: Categories of Support Surfaces

National Pressure Ulcer Advisory Panel

Support Surface Standards Initiative
Terms and Definitions
Ver. 01/29/2007

Note: Components of any support surface may be used alone or in combination.

Terms	Definition
AIR	A low-density fluid with minimal resistance to flow.
CELL/BLADDER	A means of encapsulating a support medium.
VISCOELASTIC FOAM	A type of porous polymer material that conforms in proportion to the applied weight. The air exists and enters the foam cells slowly, which allows the material to respond slower than a standard elastic foam (memory foam).
ELASTIC FOAM	A type of porous polymer material that conforms in proportion to the applied weight. Air enters and exits the foam cells more rapidly, due to greater density (non-memory).
CLOSED CELL FOAM	A non-permeable structure in which there is a barrier between cells, preventing gases or liquids from passing through the foam.
OPEN CELL FOAM	A permeable structure in which there is no barrier between cells, and gases or liquids can pass through the foam.
GEL	A semisolid system consisting of a network of solid aggregates, colloidal dispersions or polymers, which may exhibit elastic properties (can range from a hard gel to soft gel).
PAD	A cushion-like mass of soft material used for comfort, protection or positioning.
VISCOUS FLUID	A fluid with a relatively high resistance to flow of the fluid.
ELASTOMER	Any material that can be repeatedly stretched to at least twice its original length. Upon release, the stretch will return to approximately its original length.
SOLID	A substance that does not flow perceptibly under stress. Under ordinary conditions retains its size and shape.
WATER	A moderate density fluid with moderate resistance to flow.

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Appendix A 5: Features of Support Surfaces

National Pressure Ulcer Advisory Panel

Support Surface Standards Initiative
Terms and Definitions
Ver. 01/29/2007

Appendix 1E – Features of Support Surfaces

A feature is a functional component of a support surface that can be used alone or in combination with other features.

Terms	Definition
AIR FLUIDIZED	A feature of a support surface that provides pressure redistribution via a fluid-like medium created by forcing air through beads as characterized by immersion and envelopment.
ALTERNATING PRESSURE	A feature of a support surface that provides pressure redistribution via cyclic changes in loading and unloading as characterized by frequency, duration, amplitude, and rate of change parameters.
LATERAL ROTATION	A feature of a support surface that provides rotation about a longitudinal axis as characterized by degree of patient turn, duration, and frequency.
LOW AIR LOSS	A feature of a support surface that provides a flow of air to assist in managing the heat and humidity (microclimate) of the skin.
ZONE	A segment with a single pressure redistribution capability.
MULTI-ZONED SURFACE	A surface in which different segments can have different pressure redistribution capabilities.

CATEGORIES OF SUPPORT SURFACES

Terms	Definition
REACTIVE SUPPORT SURFACE	A powered or non-powered support surface with the capability to change its load distribution properties only in response to applied load.
ACTIVE SUPPORT SURFACE	A powered support surface, with the capability to change its load distribution properties, with or without applied load.

INTEGRATED BED SYSTEM	A bed frame and support surface that are combined into a single unit whereby the surface is unable to function separately.
NON-POWERED	Any support surface not requiring or using external sources of energy for operation. (Energy=D/C or A/C)
POWERED	Any support surface requiring or using external sources of energy to operate. (Energy=D/C or A/C)
OVERLAY	An additional support surface designed to be placed directly on top of an existing surface.
MATTRESS	A support surface designed to be placed directly on the existing bed frame.

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Appendix B: Grading of Levels of Evidence

Oxford Centre for Evidence Based Medicine **(Grading scale for individual articles)**
1a (Ia): Systematic reviews (with homogeneity) of randomized controlled trials 1b (Ib): Individual randomized controlled trials (with narrow confidence interval) 1c (Ic) : All or none randomized controlled trials 2a (IIa): Systematic reviews (with homogeneity) of cohort studies 2b (IIb) : Individual cohort study or low quality randomized controlled trials (<80% follow-up / wide confidence interval) 2c (IIc): 'Outcomes' Research; ecological studies 3a (IIIa): Systematic review (with homogeneity) of case-control studies 3b (IIIb): Individual case-control study 4 (IV): Case-series (and poor quality cohort and case-control studies) 5 (V): Expert opinion without explicit critical appraisal, or based on physiology, bench research or 'first principles'

Recommended Grading Scale for Guidelines
A At least one meta-analyses, systematic review, or RCT rated as 1++, and directly applicable to the target population or A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population and demonstrating overall consistency of results Evidence drawn from a NICE technology appraisal B A body of evidence including studies rated as 2++, directly applicable to the target population and demonstrating overall consistency of results or Extrapolated evidence from studies rated as 1++ or 1+ C A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results, or Extrapolated evidence from studies rated as 2++ D Evidence level 3 or 4, or Extrapolated evidence from studies rated as 2+, or Formal consensus D (GPP) A good practice point (GPP) is a recommendation for best practice based on the experience of the Guideline Development Group

Appendix C: Braden Pressure Ulcer Risk Assessment

Providence HEALTH CARE

BRADEN SCALE AND
PRESSURE ULCER PREVENTION CARE PLAN

For all patients, complete Braden Scale:

- within 24 hours of admission ∗AND∗
- with any change in patient condition ∗AND∗
- post-operatively

If patient's Braden score below 19:

- Repeat every 48 hours if patient not on KCl rental surface ∗OR∗
- Repeat every 24 hours if patient is on KCl rental surface

					Date of Assessment:			
					Assessor's initials:			
SENSORY PERCEPTION Ability to respond meaningfully to pressure-related discomfort	**1. Completely Limited:** Unresponsive (does not moan, flinch, or grasp, to painful stimuli, due to diminished level of consciousness or sedation). **OR** Limited ability to feel pain over most of body surface	**2. Very Limited:** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness. **OR** Has a sensory impairment which limits the ability to feel pain or discomfort over ½ of body.	**3. Slightly Limited:** Responds to verbal commands but cannot always communicate discomfort or need to be turned. **OR** Has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	**4. No Impairment:** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort				
MOISTURE Degree to which skin is exposed to moisture	**1. Constantly Moist:** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2. Moist:** Skin is often but not always moist. Linen must be changed at least once a shift.	**3. Occasionally Moist:** Skin is occasionally moist, requiring an extra linen change approximately once a day.	**4. Rarely Moist:** Skin is usually dry; linen requires changing only at routine intervals.				
ACTIVITY Degree of physical activity	**1. Bed-rest:** Confined to bed.	**2. Chair-rest:** Ability to walk severely limited or nonexistent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	**3. Walks Occasionally:** Walks occasionally during day but for very short distances, with our without assistance. Spends majority of each shift in bed or chair.	**4. Walks Frequently:** Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours.				
MOBILITY Ability to change and control body position.	**1. Completely Immobile:** Does not make even slight changes in body or extremity position without assistance.	**2. Very Limited:** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	**3. Slightly Limited:** Makes frequent though slight changes in body or extremity position independently.	**4. No Limitations:** Makes major and frequent changes in position without assistance.				
NUTRITION Usual food intake pattern	**1. Very Poor:** Never eats a complete meal. Rarely eats more than ⅓ of any food offered. Eats 2 servings or less of protein (meat, dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement. **OR** Is NPO and/or maintained on clear liquids or IV's for more than 5 days.	**2. Probably Inadequate:** Rarely eats a complete meal and generally eats only about ½ of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement. **OR** Receives less than optimum amount of liquid diet or tube feeding.	**3. Adequate:** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) each day. Occasionally will refuse a meal, but will usually take a supplement if offered. **OR** Is on a tube feeding or TPN regimen which probably meets most of nutritional needs.	**4. Excellent:** Eats most of every meal. Never refuses a meal. Usually eats a total of 4 servings or more of meat and dairy products. Occasionally eats between meals. Does not require supplementation.				
FRICTION AND SHEAR	**1. Problem:** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures, or agitation leads to almost constant friction.	**2. Potential Problem:** Moves freely or requires minimum assistance. During a move, skin probably slides to some extent against sheets, chair, restraints, or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	**3. No Apparent Problem:** Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times.					
					TOTAL SCORE:			

SCORE OF: 15 to 18 = **Low Risk** 13 to 14 = **Moderate Risk**
10 to 12 = **High Risk** 9 or less = **Very High Risk**

For total scores below 19, complete the Pressure Ulcer Prevention Care Plan on reverse
For total scores 19 or more, no Care Plan is required unless condition changes

Form No. PHC-NF393(T) (R. Nov 14-13) Page 1 of 2

Appendix D: Skin Care Risk Assessment Form Guidelines and Template

The assessment form can be used as is, or as a template to be used at any site to develop an assessment form that will meet the needs of the individual population and the requirements of the interdisciplinary documentation system. The risk assessment form can be used by therapists to help identify factors contributing to risk of skin breakdown and help the therapist develop intervention strategies for prevention and treatment.

The first column of the form lists risk factors identified in the Occupational Therapy Skin Care Best Practice Guideline.

Use the prompts and the questions in this assessment form guideline to identify the specific factors that place the individual at risk for skin breakdown or contribute to wound development. Document this information in the second column.

The third column is used to identify factors that require occupational therapy intervention. In your setting, this information may be documented in an occupational therapy or interdisciplinary progress note or care plan. Tick yes if OT will intervene or will refer to another discipline for intervention. Tick no if no occupational therapist action is required. Where the care plan is triggered, the interdisciplinary team will need to develop and follow steps to address the associated risk factors, as related to goals of care.

In the fourth column, initial and date when the corresponding risk factor has been assessed.

Previous Skin Breakdown

- Identify bony prominence(s) involved
- Cause(s) of the wound
- Stage number
- Acute, chronic, recurrent
- Date of occurrence
- Describe healing course
- Surgical interventions
- Management strategies, e.g. mattress, bed rest

Current Skin Breakdown

- Identify bony prominence(s) involved
- Stage number
- Acute, chronic, recurrent
- Date of occurrence
- Healing course
- Cause
- Appearance:
  - round, even (pressure)
  - Elongated, irregular (friction, shear)
  - Macerated, mottled, cracks on the skin (moisture, incontinence)
  - Skin tear

Sensory Impairment • Sensory impairment? Where? • Client awareness of impairment • Does the client compensate during functional activities? For example, uses hand to check for rough surfaces before putting on shoe • Does the client/caregiver regularly check the skin visually?
Decreased Consciousness • Decreased level of consciousness • Pattern of consciousness
Cognition Does the client: • Understand recommendations • Follow and initiate them independently (sequencing, memory, planning, organization) • Understands risks and consequences
Pain • Is the person experiencing pain? Type, location, severity • Is the pain limiting the person's ability to change or sustain a position? • Pain management • How pain is communicated (verbal, grimace, withdrawal)?
Psycho-emotional status • Impact of the person's psycho0emotional status with skin care and wound healing (depression limits intake and activity)
Decreased Mobility Can the client independently: • Change position in bed? • Change position when sitting? • Move from one surface to another? • If assistance is required, is it available and is it adequate?
Skeletal Deformity/Contractures/Posture • Skin breakdown due to postural deformities • Location of the deformity • Deformity fixed or flexible • Current deformity management
Muscular Atrophy • Reduced padding n any weight bearing surfaces/bony prominences

Nutrition/Hydration status • Is the client's weight stable? • Independence – level of assistance needed and available • Dysphagia • Awareness of nutrition requirements for wound healing • Resources for meal preparation
Incontinence • Toileting • Independence/assistance needed • Routine established • Equipment/Incontinence product(s) used
Positioning preferences • What are the clients preferred positions: • During the day/night • During meals • For bathing and toileting • For preferred daily activities
Lifestyle Choices • What are the impacts of lifestyle choices on skin care? For example, smoking , drinking, activity preferences
Extremes of age • Is the client elderly or very young?
Pressure • Identify support surfaces throughout a 24 hour period. For example; mattress, seat cushion, commode, couch, car • Are pressure distribution surfaces adequate? Also consider fit of devices, e.g. splints, collars
Shear and Friction • Potential for shearing and friction? In all positions, position changes and activities. For example prolonged sitting up in bed, transfer technique
Moisture Is excessive moisture present due to: • Perspiration • Bowel or bladder incontinence
Socio-economic Status • Socio-economic factors affecting skin care. For example; limited social supports, financial resources, access to education materials, transportation

Braden Scale Score

- Very high risk (9 or below)
- High risk (10 to 12)
- Moderate risk (13 to 14)*
- At risk (15 to 18)*

*If other major risk factors are present, advance to next level of risk.

See Appendix C re Braden Scale cut off points which vary depending on the clinical setting and resources present

Perform risk assessment on entry to a health care setting and repeat on a regularly scheduled basis or when there is a significant change in the individual's condition.

Acute care: Perform initial assessment at admission and reassess at least every 48 hours or whenever the patient's condition changes.

Long-term care: Perform initial assessment at admission. Reassess weekly for the first 4 weeks, then quarterly after that, and whenever the resident's condition changes.

Home-health care: Perform initial assessment at admission and where there are risk factors, reassess every visit

Appendix D 1: Occupational Therapy Skin Care Assessment Template

Risk factors	Comments	Care Plan Triggered?	Date/ Initials
Previous skin breakdown		☐ Yes ☐ No	
Current skin breakdown		☐ Yes ☐ No	
Sensory impairment		☐ Yes ☐ No	
Decreased consciousness		☐ Yes ☐ No	
Cognition		☐ Yes ☐ No	
Pain		☐ Yes ☐ No	
Psycho-emotional status		☐ Yes ☐ No	
Decreased mobility		☐ Yes ☐ No	
Skeletal deformity / Posture/Contractures		☐ Yes ☐ No	
Muscular atrophy		☐ Yes ☐ No	
Nutrition/hydration status		☐ Yes ☐ No	

Risk factors	Comments	Care Plan Triggered?	Date/ Initials
Incontinence		☐ Yes ☐ No	
Positioning preferences		☐ Yes ☐ No	
Lifestyle choices		☐ Yes ☐ No	
Extremes of age		☐ Yes ☐ No	
Pressure		☐ Yes ☐ No	
Shearing and Friction		☐ Yes ☐ No	
Moisture		☐ Yes ☐ No	
Socio-economic status		☐ Yes ☐ No	
Braden Scale Score	Sensory Perception /4 Moisture /4 Activity /4 Mobility /4 Nutrition /4 Friction/Shear /3 Total Score		

Reassessment Date: _____

Date: _____ Signature: _____

Appendix E: Care Planning Considerations

Risk factors	Please note: this is NOT an exhaustive list. Refer to complete document.
Previous skin breakdown	Ensure previous wound areas are protected Incorporate previous successful strategies into current plan Educate caregivers and family and ensure they can assist Note: Areas of compromise remain vulnerable for up to three years after the wound has healed. Tissues in these areas only regain 80% of their full strength.
Sensory impairment	Teach client to visually check Teach effective weight shifting Create a positioning schedule Provide equipment or teach techniques to compensate for sensory impairment during functional activities Teach the consequences of skin breakdown
Decreased consciousness	See Appendix F – Mattress and Overlay Support Surfaces Decision Tree Consider an alternate mattress, cushion or overlay with increased pressure relief Develop a turning schedule Skin assessment should be completed at least once every 48 hours
Cognition	Post recommendations for client and caregivers Ensure adequate assistance/resources Educate caregivers and family, and ensure they can assist
Pain	Record and document how the client expresses pain Record the level of pain, based on a pain assessment scale/tool and re-assess to ensure interventions improve the levels of pain Educate client regarding self-management of pain Match activity and position changes to pain tolerance Liaise with nurse or physician regarding pain management medications
Psycho-emotional status	Enable and facilitate client participation in skincare Provide resources and supports for the client's psycho-emotional state Liaise with appropriate discipline(s) and community resources
Decreased mobility	Trial equipment that may improve mobility Educate client and family/caregivers about importance of turning/repositioning Consider an alternate mattress, cushion or overlay with increased pressure relief

Skeletal deformity / Posture/ Contractures	Consider support surfaces that: Promote postural alignment Accommodate or compensate for fixed deformities Correct flexible deformities, as tolerated Optimize pressure distribution Offload vulnerable areas
Muscular atrophy	Consider support surfaces that: Ensure adequate pressure distribution Offload vulnerable areas
Nutrition/ hydration status	Facilitate self-feeding and drinking Assess for appropriate diet texture and/or assistive devices to maximize food and fluid intake Refer the client to a dietician as required and particularly for Stage 3 & 4 pressure ulcers Provide education regarding the correlation between wound healing and proper nutrition Provide information on meal support/grocery and meal delivery services
Incontinence	Facilitate continence by developing toileting routines and providing equipment to maximize independence and ease/timeliness of transfers (sliding boards, commodes) Avoid folding of incontinence pads to maximize immersion into cushion and to minimize wrinkles/edges that the person is sitting on Limit the use of layers Consider products that facilitate airflow and moisture absorption
Positioning preferences	Consider all surfaces over a 24-hour period (e.g. seat cushion, mattress, commode, bath bench) Create a positioning schedule Consider position changes that are consistent with the client's ADLs and activity choices Identify appropriate methods and equipment for repositioning Teach effective weight shift In wheelchair use side-to-side and/or forward flexion of trunk to weight shift if sitting balance allows – using arms to unload is often insufficient Consider use of high quality cushion (e.g. air or memory foam) for the client that cannot weight shift independently Distribute pressure over a large area Offload bony prominences

Lifestyle choices	Assess risk factors within the client's activity choices – get collateral information if possible Work with team to provide supports and resources for lifestyle choices which impact skin care Educate client and caregivers regarding risk factors, likely consequences and ways to mitigate them Document process and decisions
Extremes of age	Because risk level/vulnerability increases: Be more conservative regarding prevention precautions Monitor risk and interventions more frequently
Pressure	Learn how pressure area was acquired; unload (potential) pressure area Redistribute weight over as wide an area as possible Plan a 24-hour positioning schedule with team and client: To spend maximal time off the causative surface(s). To include position changes on same surface. Maintain head of bed at the lowest elevation consistent with medical conditions and restrictions; 30° elevation or lower is recommended Prescribe support surfaces that reduce pressure forces
Shearing	Use transfer aids (e.g. mechanical lifts, repositioning slings, turning sheets) to avoid dragging/sliding across surfaces during transfers and position changes Prescribe support surfaces which reduce shearing forces, considering the design and material of the surface of and the cover Maintain appropriate wheelchair seating and positioning; address sliding Consider additional supports/devices (e.g. chest strap) to prevent shear during high risk activities
Friction	Do not massage over bony prominences Use transfer aids (e.g. mechanical lifts, repositioning slings, turning sheets, sliding sheets) to avoid dragging/sliding across surfaces during transfers and position changes Prescribe support surfaces which reduce friction, considering the design and material of the surface and of the cover Maintain appropriate wheelchair seating and positioning
Moisture	Address source of moisture Facilitate continence Choose breathable clothing Liaise with registered nurse or wound care nurse regarding wound dressings

	Consider selection of products/materials that facilitate airflow, wick away moisture and moisture absorption
Socio-economic status	Aid in procurement of supplies and equipment through community resources/support agencies Liaise with team members regarding socioeconomic factors of skin care, e.g. social support, body image, self-esteem, quality of life, dignity, independence

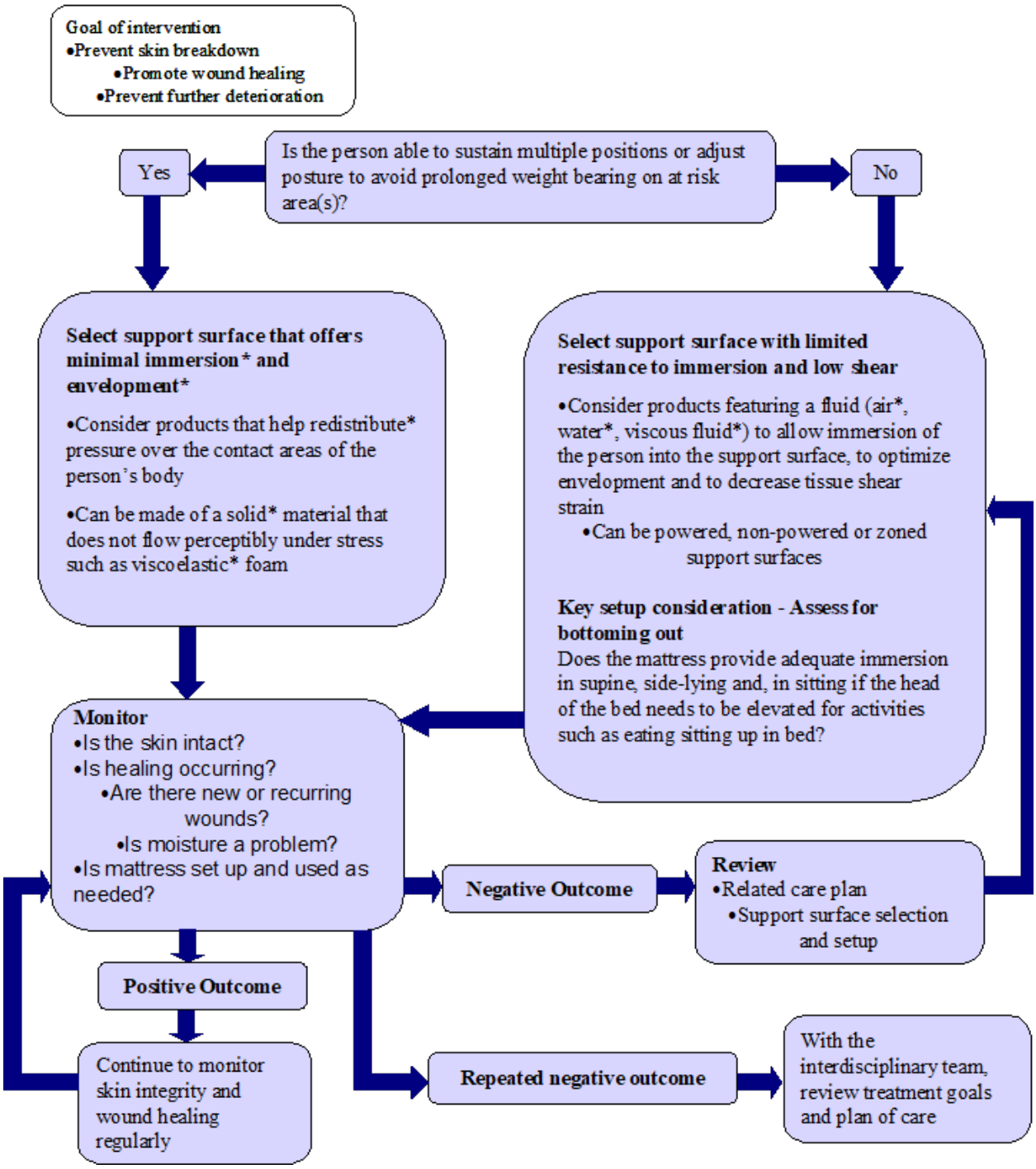
Perform risk assessment on entry to a health care setting and repeat on a regularly scheduled basis or when there is a significant change in the individual's condition.

Acute care: Perform initial assessment at admission and reassess at least every 48 hours or whenever the patient's condition changes.

Long-term care: Perform initial assessment at admission. Reassess weekly for the first four weeks, then quarterly after that, and whenever the resident's condition changes.

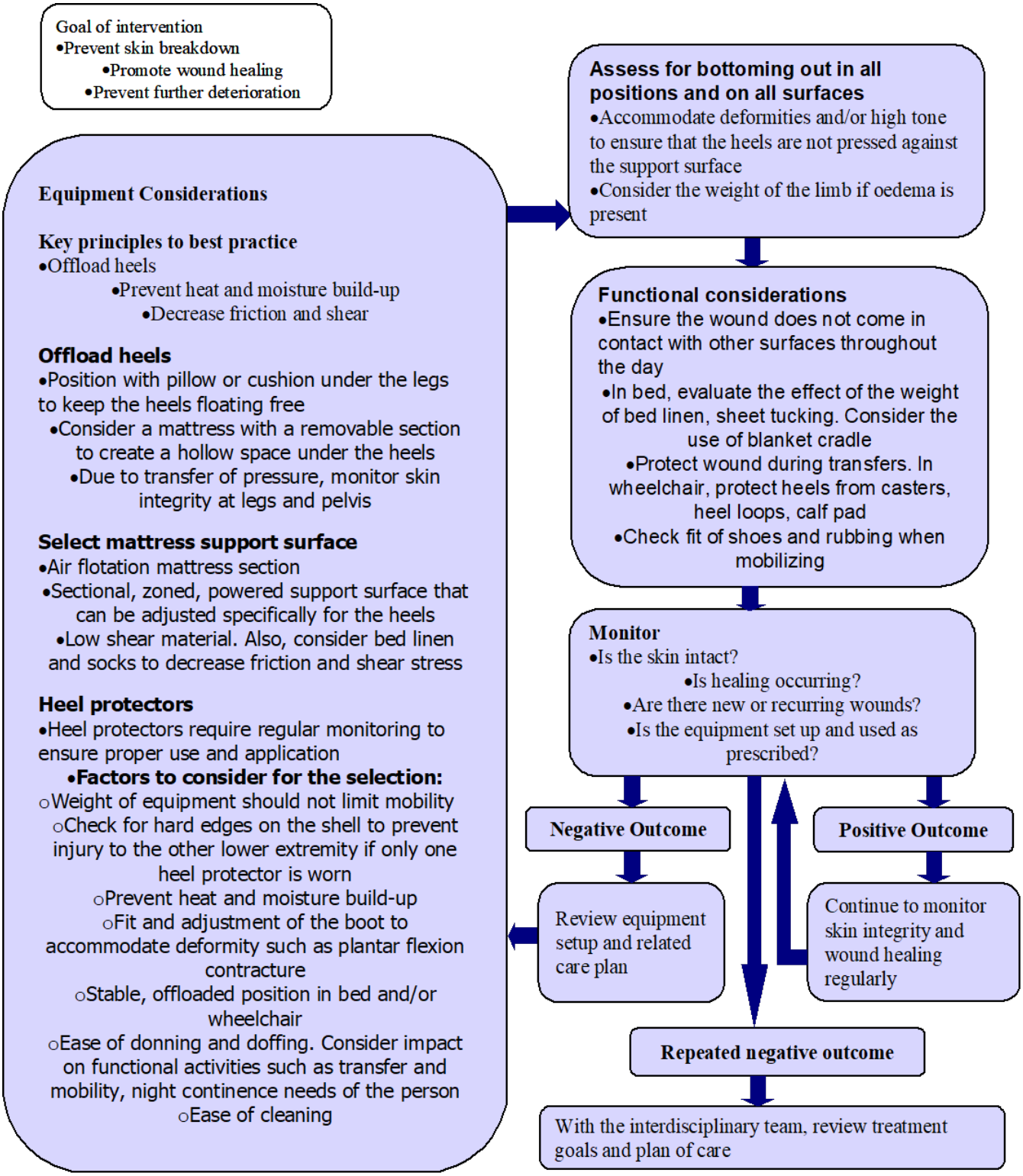
Home-health care: Perform initial assessment at admission and where there are risk factors, reassess every visit.

Appendix F: Mattress and Overlay Support Surfaced Decision Tree for Persons at Risk or with Existing Wound(s)

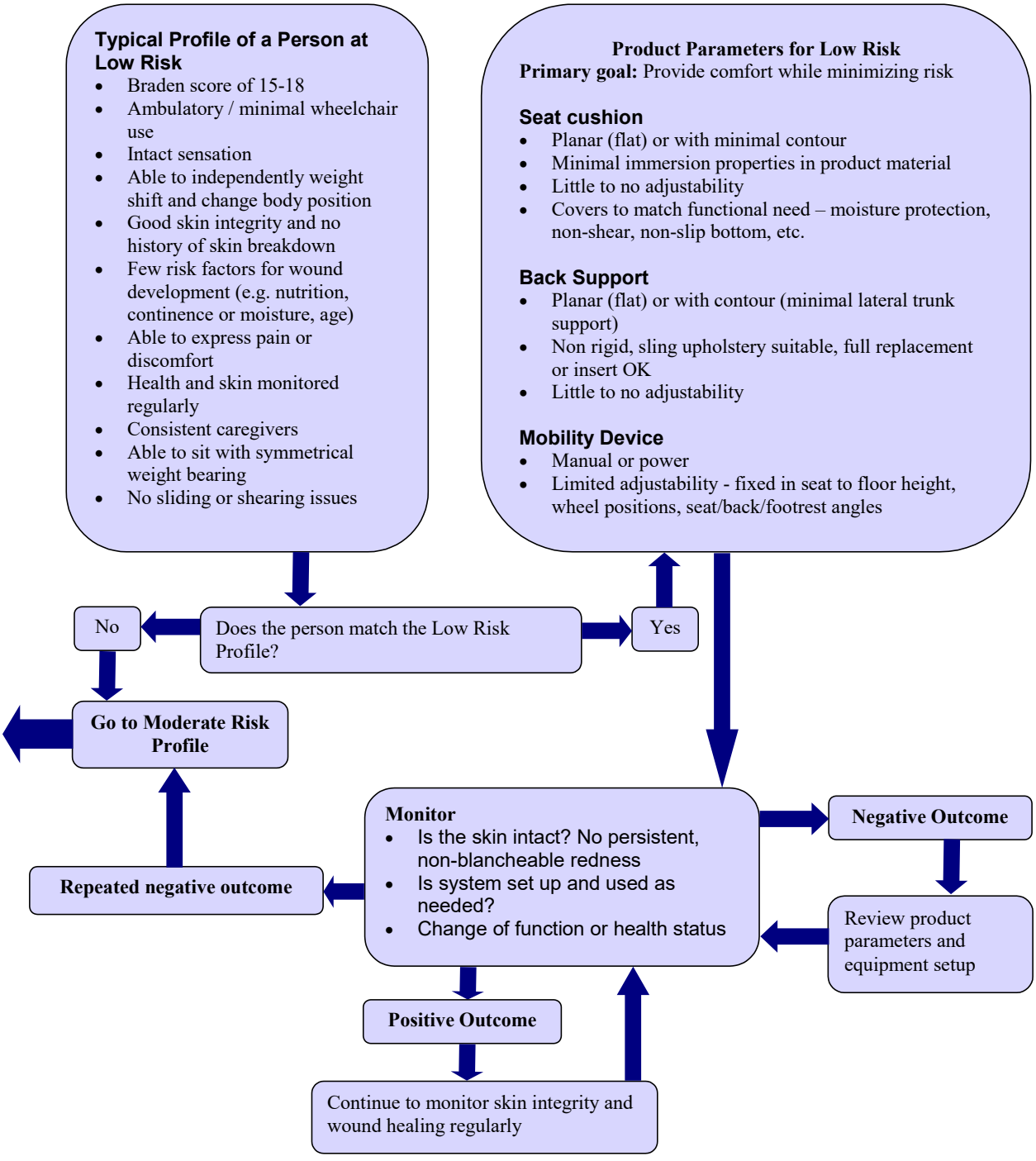


Refer to Appendix A – Glossary of Terms for definitions

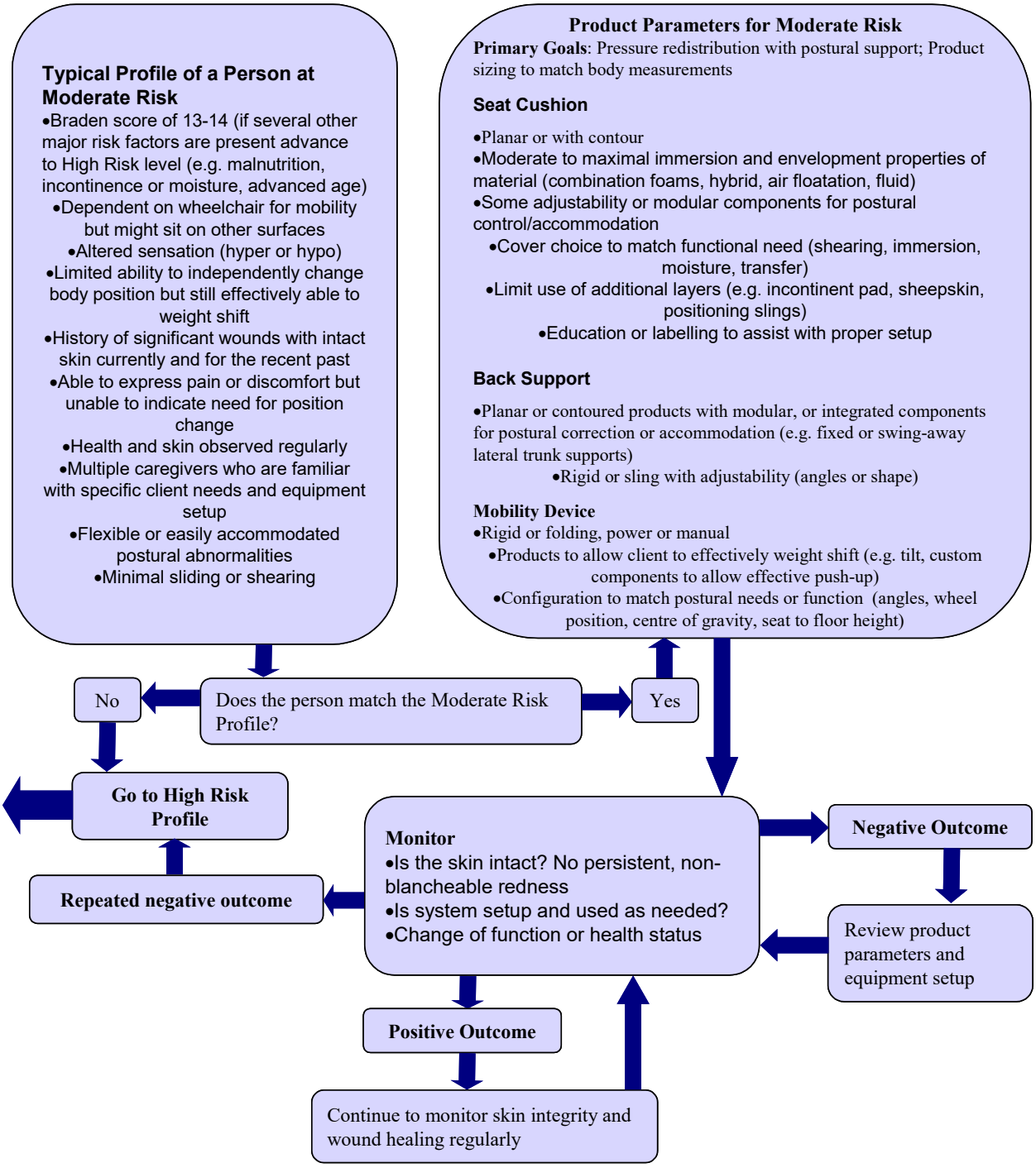
Appendix G: Heel Protection Decision Tree



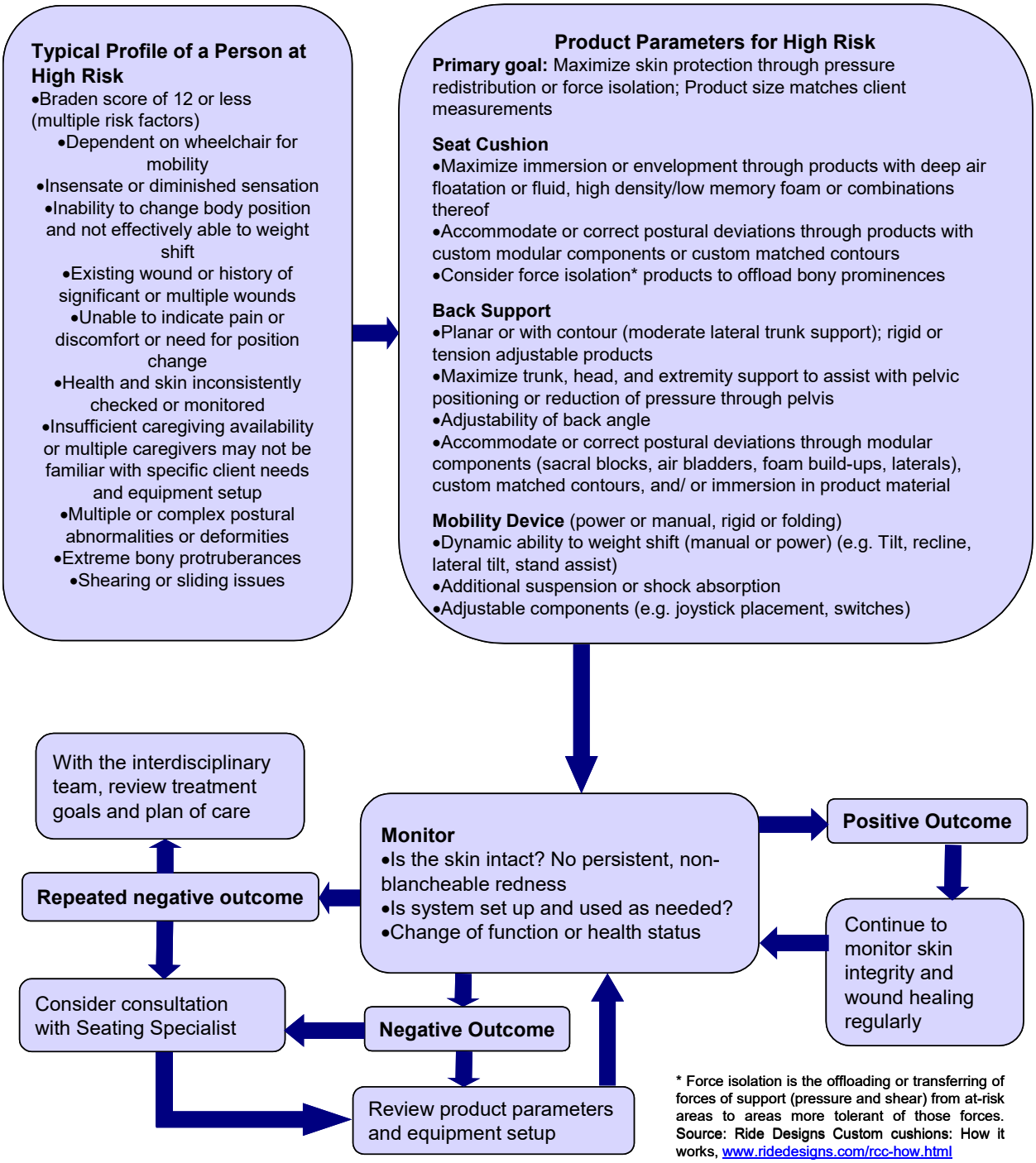
Appendix H: Seating Decision Tree



Appendix H 1: Seating Decision Tree (Moderate Risk)



Appendix H 2: Seating Decision Tree (High Risk)



* Force isolation is the offloading or transferring of forces of support (pressure and shear) from at-risk areas to areas more tolerant of those forces. Source: Ride Designs Custom cushions: How it works, www.ridedesigns.com/rcc-how.html

Appendix I: Practice Guideline References

Practice guidelines references used as a development framework for guideline:

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National Pressure Ulcer Advisory Panel Terms and Definitions: http://www.npuap.org/

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Appendix J: Search Strategies

Database: Ovid MEDLINE(R) <1966 to August Week 3 2005>

Initial Search Strategy:

---

1 exp *skin ulcer/pc (2133)

2 exp *"Equipment and Supplies"/ (366750)

3 1 and 2 (730)

4 limit 3 to (humans and english language and yr="2000 - 2005") (163)

from 4 keep 1,4,16,26,34,39,42,45-46,79,81,88-89,94,97,112 (16)

from 5 keep 1-16 (16)

Database: CINAHL - Cumulative Index to Nursing & Allied Health Literature <1982 to August Week 3 2005>

Search Strategy:

---

1 exp *Skin Ulcer/ (6226)

2 exp *Skin Ulcer/pc (1591)

3 limit 2 to (english and yr="2000 - 2005") (614)

4 exp *"Equipment and Supplies"/ (38467)

5 3 and 4 (212)

6 from 5 keep 2,8,10,14-15,21-23,29,36,39,50,56-57,64,66,70,73,75,79,99,101,106,113,118-119,125,129-130,133,142,144,159,165,169,180,184,206 (38)

7 from 6 keep 1-38 (38)

8 Occupational Therapy/ (6189)

9 Occupational Therapists/ (1760)

10 8 or 9 (7631)

11 1 and 10 (10)

12 from 11 keep 1,4 (2)

13 6 or 12 (40)

from 13 keep 1-40 (40)

CINAHL and MEDLINE databases searched

Literature Search Terms:	Search parameters:
wound prevention	peer reviewed

skin care	research articles (incl. systematic reviews)
decubitus ulcers	2000-2006
pressure sores	? adult/older adult
pressure ulcer	any setting (community, hospital, residential)
pressure relief	? English only
pressure distribution	all disciplines
skin assessment	
wound healing	

Search History Results Display

1 Pressure ulcer$.mp. or Pressure Ulcer/ 3205 DISPLAY

2 Wound Healing/ or Education, Nursing/ or Surgical Wound Infection/ or wound prevention.mp. 28143 DISPLAY

3 1 and 2 562 DISPLAY

4 Remove duplicates from 3 562 DISPLAY

5 (best practices or guidelines).mp. [mp=title, original title, abstract, name of substance word, subject heading word] 80989 DISPLAY

6 4 and 5 38 DISPLAY

Appendix K: Bibliography

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Additional Electronic Resources

http://205.207.146.54/bestpratices/PDF/BPG_Pressure_Ulcers_v2.pdf

http://gacguidelines.ca/articlepl?=05/04/07/14441257

http://nursingyale.edu/Research/PACWC/resources.html

http://www.amda.com/info/cpg/pressureulcer.htm

www.cawc.net

http://www.cmri-ca.org/nursinghomes/resources/pressureulcer/index.asp

http://www.decubitus.org

http://www.npuap.org

http://www.hcmarketplace.com/prod-776.html

http://www.ncbi.nlm.nih.gov/books/bv.fcgi?call=bv.View..ShowSection&rid=hstat2.chapter.4409

http://www.npuap.org

http://www.nursing.upenn.edu/centers/hcgne/gero_tips/TLC/2_Pressure_Ulcers.htm

http://www.rcn.org.uk/resources/guidelines.php#other

http://www.rnao.org/bestpractices/index.asp

http://www.smtl.co.uk/WMPRC/index.html

http://www.umanitoba.ca/libraries/units/health/deerlodge/dlclibcat.html

http://www.wocn.org

http://www.worldwidewounds.com/2001/july/Butcher/NICE-pressure-ulcer-review.html

http://www.woundheal.com/dealing/clinicalIndex.htm

http://www2.rnao.org/bestpractices/completed_guidelines/bestPractice_firstCycle.asp

http://www.assistive-technology.ca/ss.html

http://www.wheelchairnet.org/

http://www.spinlife.com/spintips/details/k/Wheelchair-Cushion-Differences/a/107/c/89

http://www.seatingandmobility.ca/Equipment.aspx

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