

Evidence to Decision Frameworks: Preventive Skin Care

Clinical question Are topical products (e.g. moisturizers, emollients, hyperoxygenated fatty acids) effective in preventing pressure injuries?

Recommendation 3.1 **Implement a skin care regimen that includes:**

- Keeping the skin dry and appropriately hydrated
- Cleansing the skin promptly after episodes of incontinence
- Avoiding use of alkaline soaps and cleansers
- Protecting the skin from moisture with a barrier product.

Option: Structured skin hygiene using a pH balanced cleanser and application of a barrier cream
Comparison: Standard care

Background: Cleansing the skin removes dirt, sebum and oils from the skin's surface. Incontinence can lead to prolonged skin exposure to excess moisture and chemical irritants in urine and feces. Cleansing (particularly after incontinence) using a structured care regimen helps protect skin to prevent incontinence-associated dermatitis that may increase pressure injury risk.

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS
BENEFITS & HARMS OF THE PRACTICE	What is the overall certainty of the evidence?	<p>No included studies <input type="checkbox"/></p> <p>Very low <input checked="" type="checkbox"/></p> <p>Low <input type="checkbox"/></p> <p>Moderate <input type="checkbox"/></p> <p>High <input type="checkbox"/></p>	<p>Evidence for structured skin hygiene program</p> <ul style="list-style-type: none"> • In individuals in critical care (n=76), a structured skin care regimen that included use of mild washing with minimal friction, use of wet tissue cloth, regular perineal cleansing with a foaming cleanser followed by a barrier cream and moisturizing was associated with a statistically significantly lower incidence of pressure injuries compared to standard care (13.2% vs 50%, p=0.001).¹ (Level 2, low quality) • In hospitalized individuals with moisture lesions combined with pressure injuries (n=20), a skin hygiene routine that included regular cleansing, use of a foam cleanser and a barrier spray was associated with skin being observed as healed or healing after 3 to 20 days.² (Level 4, low quality) <p>Evidence for using a pH balanced foam cleanser</p> <ul style="list-style-type: none"> • In older adults with incontinence or catheterization (n=49), use of a pH balanced (i.e., pH 5.5) cleanser for 14 days was associated with positive outcome compared to cleansing with standard hospital soap, including a reduction in erythema (15.1% versus 30.3%, p = not reported) and a reduction in broken skin (0% vs 12.1%, p=not reported).³ (Level 1, moderate quality) • In individuals in critical care (n=76), a structured skin care regimen that included use of a foaming cleanser was associated with a statistically significantly lower incidence of pressure injuries compared to standard care (13.2% vs 50%, p=0.001).¹ (Level 2, low quality) <p>Strength of Evidence: B2 - Level 2 studies of low quality providing direct evidence</p>
	Is there important uncertainty about how much people value the main outcomes?	<p>Important uncertainty or variability <input type="checkbox"/></p> <p>Possibly important uncertainty or variability <input type="checkbox"/></p> <p>Probably no important uncertainty or variability <input type="checkbox"/></p> <p>No important uncertainty or variability <input type="checkbox"/></p> <p>No known undesirable outcomes <input checked="" type="checkbox"/></p>	
	How substantial are the desirable anticipated effects?	<p>Unclear <input checked="" type="checkbox"/></p> <p>Not substantial <input type="checkbox"/></p> <p>Probably not substantial <input type="checkbox"/></p> <p>Probably substantial <input type="checkbox"/></p> <p>Substantial <input type="checkbox"/></p>	
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	Do the desirable effects outweigh the undesirable effects?	<p>No <input type="checkbox"/></p> <p>Probably No <input type="checkbox"/></p> <p>Uncertain <input type="checkbox"/></p> <p>Probably Yes <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/></p> <p>Varies <input type="checkbox"/></p>	

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS												
RESOURCE USE	How substantial are the resource requirements?	<table border="0"> <tr> <td><i>Not clear</i></td> <td><i>Not substantial</i></td> <td><i>Probably not substantial</i></td> <td><i>Probably substantial</i></td> <td><i>Substantial</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>Not clear</i>	<i>Not substantial</i>	<i>Probably not substantial</i>	<i>Probably substantial</i>	<i>Substantial</i>	<i>Varies</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available
<i>Not clear</i>	<i>Not substantial</i>	<i>Probably not substantial</i>	<i>Probably substantial</i>	<i>Substantial</i>	<i>Varies</i>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
PRIORITY AND ACCEPTABILITY	Is the option acceptable to key stakeholders?	<table border="0"> <tr> <td><i>No</i></td> <td><i>Probably No</i></td> <td><i>Uncertain</i></td> <td><i>Probably Yes</i></td> <td><i>Yes</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available
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<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>										
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<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>										
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Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings <input type="checkbox"/>	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings <input type="checkbox"/>	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i> <input type="checkbox"/>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings <input checked="" type="checkbox"/>	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings <input type="checkbox"/>
Strength of recommendation	Strong negative recommendation: Definitely don't it <input type="checkbox"/>	Weak negative recommendation: Probably don't do it <input type="checkbox"/>	No specific recommendation <input type="checkbox"/>	Weak positive recommendation: Probably do it <input type="checkbox"/>	Strong positive recommendation: Definitely do it <input checked="" type="checkbox"/>
Justification	Two studies ^{1,2} provided evidence to support a recommendation to implement structured skin care regimen that includes regular cleansing (particularly after episodes of incontinence). A low quality Level 2 study ¹ found that a structured hygiene program was associated with a lower incidence of pressure injuries than standard care. A low quality level 4 observational study ² noted that skin was assessed as being healed or healing when a structured skin care regimen was implemented. A moderate quality Level 1 study ³ reported significant reductions in erythema and broken skin when a pH-balanced (pH 5.5) foam cleanser was used, as compared to standard hospital soap. The structured skin care regimen reported in the low quality level 2 study ¹ also included replacing soap with a pH balanced (pH not reported) foam cleanser.				

Clinical question Is massage effective in preventing pressure injuries?

Good Practice Statement 3.2 Avoid vigorously rubbing skin that is at risk of pressure injuries.

Background: In the past, massage has been used as a method of pressure injury prevention.⁶⁻⁸ Vigorous massage has the potential to damage tissue

SUPPORTING EVIDENCE, WHEN AVAILABLE

Evidence to support the opinion (when available)

Evidence for reduction in pressure injury incidence

- In older adults (n=79), there was no significant difference in pressure injury incidence between massage every six hours for four weeks and standard pressure injury prevention that did not include massage.⁹ (*Level 1, moderate quality*)
- In older adults (n=79), massage with a 5% dimethyl sulfoxide (DMSO) cream was associated with a statistically significantly higher incidence of pressure injury development compared to the control receiving no massage and a group receiving massage with a placebo (OR of pressure injury at heel or ankle 8.80 95% CI 2.61 to 29.6).⁶ (*Level 1, moderate quality*)

Justification

Two reports on a moderate quality Level 1 study^{6,9} provided evidence that the incidence of pressure injuries was not statistically significant different in overall pressure injury incidence (all anatomical locations).⁶ There was a statistically higher incidence of heel/ankle pressure injuries⁹ when massage was used as a part of a care regimen to prevent pressure injuries, but the concurrent topical agent may have influenced findings. For these reasons, vigorous massage is not recommended.

Clinical question Are continence management strategies effective in preventing and treating pressure injuries?

Recommendation 3.3 Use high absorbency incontinence products to protect the skin in individuals with or at risk of pressure injuries who have urinary incontinence.

Option: Continence management strategies that promote reduced exposure to urine **Background:** Incontinence can lead to prolonged skin exposure to excess moisture and chemical irritants in urine. Implementing an incontinence management plan can reduce exposure to moisture and chemical irritants.
Comparison: Standard care

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BENEFITS & HARMS OF THE PRACTICE	What is the overall certainty of the evidence?	<table border="0"> <tr> <td>No included studies</td> <td>Very low</td> <td>Low</td> <td>Moderate</td> <td>High</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No included studies	Very low	Low	Moderate	High	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Evidence for urinary incontinence devices reducing pressure injury incidence</p> <ul style="list-style-type: none"> In incontinent individuals in acute care (n=462), disposable incontinence products were associated with a significantly lower incidence of pressure injuries than a reusable quilted continence product with waterproof backing (11.5% versus 4.8%, p=0.02).¹⁰ (Level 1, low quality) In incontinent individuals in rehabilitation (n=71), use of the highest quality (based on absorbency) incontinence products was associated with a 58% (95% CI 8 to 75%) reduction risk that a pressure injury was present after six weeks and a 67% (95% CI 16 to 78%) reduction in risk that a pressure injury was present after 10 weeks.¹¹ (Level 3, low quality) <p>Adverse events No evidence available</p>	
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No	Probably No	Uncertain	Probably Yes	Yes	Varies									
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									

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Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies										
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No	Probably No	Uncertain	Probably Yes	Yes	Varies										
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Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings <input type="checkbox"/>	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings <input type="checkbox"/>	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i> <input type="checkbox"/>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings <input checked="" type="checkbox"/>	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings <input type="checkbox"/>
Strength of recommendation	Strong negative recommendation: Definitely don't it <input type="checkbox"/>	Weak negative recommendation: Probably don't do it <input type="checkbox"/>	No specific recommendation <input type="checkbox"/>	Weak positive recommendation: Probably do it <input checked="" type="checkbox"/>	Strong positive recommendation: Definitely do it <input type="checkbox"/>
Justification	A low quality Level 1 study ¹⁰ provided evidence that highly absorbent disposable continence devices that lock moisture away from the skin are associated with a lower incidence of pressure injuries than reusable quilted incontinence pads. A low quality Level 3 study ¹¹ reported a 67% reduction in risk of a pressure injury associated with using a highly absorbent incontinence diaper for ten weeks.				

Clinical question Are low friction or microclimate control fabrics effective for preventing pressure injuries?

Recommendation 3.4 Consider using textiles with low friction coefficients for individuals with or at risk of pressure injuries.

Option: Low friction fabric
Comparison: Standard care

Background: Lower friction coefficient textiles aim to reduce friction force and shear stresses leading to a lower pressure injury risk.

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How substantial are the desirable anticipated effects?	<table border="0"> <tr> <td>Unclear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Unclear	Not substantial	Probably not substantial	Probably substantial	Substantial	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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No	Probably No	Uncertain	Probably Yes	Yes	Varies								
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	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS												
RESOURCE USE	How substantial are the resource requirements?	<table border="0"> <tr> <td><i>Not clear</i></td> <td><i>Not substantial</i></td> <td><i>Probably not substantial</i></td> <td><i>Probably substantial</i></td> <td><i>Substantial</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<i>Not clear</i>	<i>Not substantial</i>	<i>Probably not substantial</i>	<i>Probably substantial</i>	<i>Substantial</i>	<i>Varies</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> In a cost analysis that included hospital stay costs, support surfaces, and wound dressing costs, estimated average cost saving in a community hospital were £63,000 per 100 at risk patients (range based on scenarios £3,800 to £220,000) (UK pounds in 2010).¹³ (<i>low quality cost analysis</i>) In a cohort study conducted in US in 2014-2015, low friction silk-like sheets were reported to cost more than cotton blend sheets (\$50/set vs \$22/set) but lasted three times longer.¹⁷ In a cohort study conducted in US in 2014-2015, low friction silk-like sheets were reported to be associated with a \$3,929,312 cost saving based on reduction in hospitalization duration.¹⁷
<i>Not clear</i>	<i>Not substantial</i>	<i>Probably not substantial</i>	<i>Probably substantial</i>	<i>Substantial</i>	<i>Varies</i>										
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PRIORITY AND ACCEPTABILITY	Is the option acceptable to key stakeholders?	<table border="0"> <tr> <td><i>No</i></td> <td><i>Probably No</i></td> <td><i>Uncertain</i></td> <td><i>Probably Yes</i></td> <td><i>Yes</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available
	<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>									
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
	Is the option a priority for key stakeholders?	<table border="0"> <tr> <td><i>No</i></td> <td><i>Probably No</i></td> <td><i>Uncertain</i></td> <td><i>Probably Yes</i></td> <td><i>Yes</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available
<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>										
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FEASIBILITY	Is the option feasible to implement?	<table border="0"> <tr> <td><i>No</i></td> <td><i>Probably No</i></td> <td><i>Uncertain</i></td> <td><i>Probably Yes</i></td> <td><i>Yes</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Access to low friction fabrics may be limited in many clinical settings and geographic locations. (<i>Expert opinion</i>)
<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										

Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings <input type="checkbox"/>	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings <input type="checkbox"/>	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i> <input type="checkbox"/>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings <input checked="" type="checkbox"/>	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings <input type="checkbox"/>
Strength of recommendation	Strong negative recommendation: Definitely don't it <input type="checkbox"/>	Weak negative recommendation: Probably don't do it <input type="checkbox"/>	No specific recommendation <input type="checkbox"/>	Weak positive recommendation: Probably do it <input checked="" type="checkbox"/>	Strong positive recommendation: Definitely do it <input type="checkbox"/>
Justification	<p>The evidence for the recommendation to consider using a low friction coefficient textile is primarily based on studies exploring the effectiveness of silk-like fabrics that reduce shear stress, minimizes skin irritation and dries quickly when compared to a cotton or cotton-blend fabric. One moderate quality Level 1 study reported a hazard ratio of 0.23 (with wide confidence intervals) for Category/Stage II or greater pressure injuries associated with silk-like fabric compared to cotton blend fabric.¹² A moderate quality Level 2 study¹⁵ also found that silk-like fabric is associated with lower pressure injury incidence than standard cotton sheets. One moderate quality Level 3 study reported that a synthetic fiber was associated with a lower pressure injury risk due to its management of moisture compared to cotton sheets.¹⁶ Three additional Level 3 studies (two moderate quality¹⁴ and two of low quality^{13,17}) reported lower incidence of pressure injuries (both Category/Stage I and Category/Stage II and greater) in cohorts that were cared for on silk-like fabric sheets compared to standard linen. The range of effect varied between the studies but favored the low coefficient silk-like product. One cohort study reported that silk-like sheets cost more than double that of cotton-blend sheets, but lasted more than three times as long¹⁷ A low quality cost analysis indicated there was a small cost saving associated with using silk-like fabrics.¹³</p>				

Clinical question Is a prophylactic dressing effective for preventing pressure injuries?

Recommendation 3.5 Use a soft silicone multi-layered foam dressing to protect the skin for individuals at risk of pressure injuries.

Option: A multi-layer foam prophylactic dressing applied to prevent pressure injuries

Background: Prophylactic dressings appear to have a role in reducing friction and shear.

Comparison: Standard preventive care with no prophylactic dressing, or comparison with a different type of prophylactic dressing

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS										
BENEFITS & HARMS OF THE PRACTICE	What is the overall certainty of the evidence?	<table border="0"> <tr> <td>No included studies</td> <td>Very low</td> <td>Low</td> <td>Moderate</td> <td>High</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No included studies	Very low	Low	Moderate	High	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Evidence for pressure injury incidence</p> <ul style="list-style-type: none"> In individuals in critical care (n=366), including use of a multi-layer silicone foam dressing in a skin care bundle was associated with a significant reduction in pressure injuries compared with no prophylactic dressing (0.7%, 95% CI 0.1 to 2.5 versus 5.9%, 95% CI 2.8 to 12.4, p=0.01). This equated to an 88% reduction in risk of developing a pressure injury (HR 0.12, 95%CI 0.02 to 0.98, p=0.048).¹⁸ (Level 1, high quality) In individuals in acute care at high risk of pressure injuries (Braden Scale score ≤ 14; n=397), there was no significant difference in pressure injury incidence between a multi-layer silicone foam dressing and no prophylactic dressing (3.9% vs 5%, p>0.05, but there was a statistically significant difference when the analysis was limited to individuals with a Braden score ≤ 12 (0% versus 4.8%, p=0.048).¹⁹ (Level 1, moderate quality) In critically ill individuals (n=440), multi-layer soft silicone foam dressing plus a tubular bandage was associated with statistically significantly fewer heel pressure injuries compared to standard care (3.1% vs 12.5%, p=0.02) and sacral pressure injuries (1.2% vs 5.2%, p=0.05 after a mean follow up of approximately 3.5 days.²⁰ (Level 1, moderate quality) In critically ill individuals (n=85), application of a multi-layer silicone foam dressing to the sacrum was associated with a lower incidence of Category/Stage II or greater pressure injuries but the difference was not statistically significant compared to placebo (2% versus 11.7%, p>0.05).²¹ (Level 1, moderate quality) In older adults in long term care (n=188),²² application of a multi-layer silicone foam dressing to the sacrum was associated with a significantly lower incidence of Category/Stage I or greater pressure injuries of the sacrum or heels compared to no dressing (2.1% versus 10.6%, p=0.004). Pressure injuries at the sacrum were significantly lower in the prophylactic dressing group (1.45% vs 8.67%, p=0.007), but there was no significant 	<p>Comparison between different prophylactic dressings</p> <p><i>Multi-layer silicone foam versus film dressing</i></p> <ul style="list-style-type: none"> In individuals receiving surgery (n=100), significantly more Category/Stage I pressure injuries occurred with polyurethane film compared with a multi-layer silicone foam dressing (11% versus 3%, p=0.027).³⁰ (Level 2, high quality)
	No included studies	Very low	Low	Moderate	High									
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	Is there important uncertainty about how much people value the main outcomes?	<table border="0"> <tr> <td>Important uncertainty or variability</td> <td>Possibly important uncertainty or variability</td> <td>Probably no important uncertainty or variability</td> <td>No important uncertainty or variability</td> <td>No known undesirable outcomes</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability	No known undesirable outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability	No known undesirable outcomes									
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How substantial are the desirable anticipated effects?	<table border="0"> <tr> <td>Unclear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Unclear	Not substantial	Probably not substantial	Probably substantial	Substantial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
			<p>difference in incidence of heel pressure injuries ($p > 0.05$) (<i>Level 1, moderate quality</i>)</p> <ul style="list-style-type: none"> In critically ill individuals ($n=102$), a multi-layer silicone foam dressing was associated with statistically significantly fewer pressure injuries compared to no prophylactic dressing (6% vs 46%, $p < 0.001$).²³ (<i>Level 2, high quality</i>) In critically ill individuals in medical and surgical coronary care and intensive care ($n=200$), a multi-layer silicone foam dressing was associated with a non-significant reduction in sacrum, buttock or coccyx pressure injuries compared with no prophylactic dressing (incidence rate ratio ranged from 0.41 to 0.54 between three units, $p > 0.05$).²⁴ (<i>Level 2, low quality</i>) In trauma and critically ill individuals ($n=302$), a multi-layer soft silicone foam dressing plus a tubular bandage was associated with a statistically significantly lower incidence of heel pressure injuries compared with standard care only (0% vs 9.2%, $p < 0.001$).²⁵ (<i>Level 3, high quality</i>) In acutely ill adults ($n=618$), the average hospital-level Category/Stage III, IV or unstageable pressure injury per quarter was significantly lower with a 5-layer sacral dressing compared with no dressing (1.2 ± 0.045 vs 1.5 ± 0.125, $p = 0.0063$).²⁶ (<i>Level 3, low quality</i>) In hospitalized individuals ($n=109$), a multi-layer silicone foam dressing was associated with a non-significant reduction in sacral pressure injuries compared to no dressing (1.96% versus 10.3%, $p < 0.08$).²⁷ (<i>Level 3, low quality</i>) In individuals undergoing trauma surgery ($n=315$), use of a multi-layer silicone foam dressing was not statistically significantly different compared to a polymer gel mattress for preventing surgical-associated sacral pressure injuries (17.7% vs 19.1%, $p = 0.77$; however the group receiving the gel mattress experienced some Category/Stage III (2.5% of pressure injuries) and IV (5% of pressure injuries) while the prophylactic dressing group did not.²⁸ (<i>Level 3, low quality</i>) In individuals in intensive care ($n=62$), the sacral pressure injury incidence in individuals receiving a multi-layer silicone foam dressing was 4.8%.²⁹ (<i>Level 4, low quality</i>) <p>Strength of Evidence: B1 - Level 1 studies of moderate or low quality providing direct evidence</p>	

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS												
RESOURCE USE	How substantial are the resource requirements?	<table border="0"> <tr> <td>Not clear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> In acute care settings in the US, the estimated cost saving of using prophylactic multi-layer foam sacral dressing was \$200,000 to \$600,000 (based on 38 hospitals in US in 2010 to 2015).²⁶ (<i>Low quality economic analysis</i>) In critical care settings in Australia, average cost of wound care was lower for individuals receiving a heel and/or sacral prophylactic dressing versus no dressing (\$70.82 vs \$144.56) and the intervention was estimated to bring an annual national saving of \$34 million (based on national introduction in intensive care unit, AUD, 2014).^{31,32} (<i>High quality economic analysis</i>)
Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>										
PRIORITY AND ACCEPTABILITY	Is the option acceptable to key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available
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<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
	Is the option a priority for key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	72.1% (276/383) of respondents to a patient/ informal caregiver survey who identified as having experienced a pressure injury or being at risk of a pressure injury believed that knowing more about dressings is important or very important in caring for themselves. In the same survey, 67.2% (572/850) of informal caregivers believed that knowing more about dressings is important or very important in caring for their family member/friend with or at risk of a pressure injury ^{4,5} (<i>Indirect evidence</i>).
No	Probably No	Uncertain	Probably Yes	Yes	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
FEASIBILITY	Is the option feasible to implement?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> In individuals in surgery and emergency departments (n=77) a multi-layer silicone foam dressing remained in situ for a median of 49 hours (range 24 to 69), with main reasons for dislodgement being non-adherence to wet skin, rolling dressing edges, fecal incontinence and discomfort.³³ (<i>Level 1, low quality</i>) In critically ill individuals (n=200), a multi-layer silicone foam dressing stayed in situ for a mean 3.26±3.17 days (range 0 to 24).²⁴ (<i>Level 2, low quality</i>) Health professionals reported difficulty opening a multi-layer layer foam dressings edges to perform skin inspections, particularly when wearing gloves²⁵ (<i>Level 3, high quality</i>). Prophylactic dressing may not be available in all clinical settings and geographic settings (<i>Expert opinion</i>).
No	Probably No	Uncertain	Probably Yes	Yes	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										

Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings <input type="checkbox"/>	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings <input type="checkbox"/>	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i> <input type="checkbox"/>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings <input checked="" type="checkbox"/>	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings <input type="checkbox"/>
Strength of recommendation	Strong negative recommendation: Definitely don't it <input type="checkbox"/>	Weak negative recommendation: Probably don't do it <input type="checkbox"/>	No specific recommendation <input type="checkbox"/>	Weak positive recommendation: Probably do it <input checked="" type="checkbox"/>	Strong positive recommendation: Definitely do it <input type="checkbox"/>
Justification	Evidence supporting the effectiveness of a multi-layer silicone foam dressing in protecting the skin and preventing pressure injuries comes from one high quality, ¹⁸ and four moderate quality ¹⁹⁻²² Level 1 studies, a high quality Level 2 study, ²³ high ²⁵ and low quality ^{26,28} Level 3 studies, all of which reported statistically significantly lower pressure injury incidence compared to using no prophylactic dressing in individuals who were at moderate to very high risk of pressure injury. In one of the moderate quality Level 1 studies, ¹⁹ the results were only significant in individuals with a Braden Scale score below 12 (i.e. high risk of pressure injuries). Another low quality Level 3 study ²⁸ reported a reduction in sacral pressure injuries (particularly Category/Stage III and IV pressure injuries) when a multi-layer silicone foam dressing was used, although the difference compared to no prophylactic dressing was not statistically significant. The highest quality study reported an 88% reduction in pressure injury incidence associated with including a multi-layer silicone foam dressing in a skin care bundle. ¹⁸ Two studies (Level 2 ²⁴ and Level 3 ²⁷) reported reductions in pressure injury incidence using a multi-layer silicone foam dressing that were not statistically significant compared to no prophylactic dressing, and both were low quality. Only one study ³⁰ offered a comparison between a multi-layer silicone foam dressing and other prophylactic dressings; this high quality Level 2 study ³⁰ found a multi-layer silicone foam dressing was associated with a statistically significantly lower pressure injury incidence compared to a polyurethane film dressing. Two economic analyses conducted in the US ²⁶ and Australia ^{31,32} suggested that introduction of a multi-layer silicone foam dressing to preventive care could be associated with substantial cost savings.				

Clinical question

Are topical products (e.g. moisturizers, emollients, hyperoxygenated fatty acids) effective in preventing pressure injuries?

Using a moisturizer

Option: Moisturizing the skin

Comparison: No moisturizer

Additionally, comparisons between moisturizers

Background: Dry skin is a significant and independent risk factor for pressure injury.³⁴ Application of products to moisturize the skin could reduce risk of pressure injuries.

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS										
BENEFITS & HARMS OF THE RECOMMENDED PRACTICE	What is the overall certainty of the evidence of effectiveness?	<table border="0"> <tr> <td>No included studies</td> <td>Very low</td> <td>Low</td> <td>Moderate</td> <td>High</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No included studies	Very low	Low	Moderate	High	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Evidence for reduction in pressure injury incidence</p> <ul style="list-style-type: none"> In individuals in hospital or community care at moderate to very high risk of pressure injuries, application of a moisturizer containing hyperoxygenated fatty acids was not significantly different to application of a placebo product for pressure injury incidence at 14 days (6.1% vs 7.4%, p=0.94).³⁵ (Level 1, moderate quality) In a cohort of individuals admitted to a medical ward, the incidence of pressure injuries was significantly reduced following introduction of the emollient cream to the care regimen compared to standard care that included no moisturizers or emollients (7% versus 31%, p=0.008).³⁶ (Level 3, low quality) <p>Strength of evidence: C – A body of evidence with inconsistencies that cannot be explained, reflecting genuine uncertainty surrounding the topic</p>	<p>Comparisons between different products to moisturize the skin for reducing pressure injury incidence</p> <ul style="list-style-type: none"> In individuals in acute care (n=267) at moderate and high risk of pressure injuries (i.e., Braden scale score ≤14), there was no significant difference in pressure injury incidence between application of a fatty-acid based moisturizer plus an oil regardless of skin quality and standard care that included application of an emollient if the skin was dry (fatty-acid and oil 5.4% vs emollient 5%, p>0.05).¹⁹ (Level 1, moderate quality) In individuals in acute care (n=194) at high risk of pressure injuries (i.e., Braden scale score ≤12), application of a fatty-acid based moisturizer plus an oil regardless of skin quality was associated with a significant reduction in pressure injury incidence compared to standard care that included application of an emollient if the skin was dry (fatty-acid and oil 0% vs emollient 4.8%, p=0.048).¹⁹ (Level 1, moderate quality) In older adults at moderate to high risk of pressure injuries (Braden score ≤16), there was no significant difference between a hyperoxygenated fatty acid based product and olive oil (non oxygenated fatty acid) for reducing the incidence of pressure injuries.³⁷ (Level 1, low quality) In hospitalized adults (n=331), application of a moisturizer containing hyperoxygenated fatty acids was associated with a significant reduction in pressure injuries at 30 days compared to application of an emollient/moisturizer product containing trisostearin (17.3% versus 7.32%, p = 0.006).³⁸ (Level 1, moderate quality)
	No included studies	Very low	Low	Moderate	High									
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
	Is there important uncertainty about how much people value the main outcomes?	<table border="0"> <tr> <td>Important uncertainty or variability</td> <td>Possibly important uncertainty or variability</td> <td>Probably no important uncertainty or variability</td> <td>No important uncertainty or variability</td> <td>No known undesirable outcomes</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability	No known undesirable outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
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How substantial are the desirable anticipated effects?	<table border="0"> <tr> <td>Unclear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Unclear	Not substantial	Probably not substantial	Probably substantial	Substantial	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
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Unclear	Not substantial	Probably not substantial	Probably substantial	Substantial										
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Do the desirable effects outweigh the undesirable effects?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS												
RESOURCE USE	How substantial are the resource requirements?	<table border="0"> <tr> <td>Not clear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> <td>Varies</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> In a medical ward, introduction of a standardized preventive skin care regimen that included an emollient cream was associated with a cost savings of USD \$6,677.11 per admission compared to a preventive skin care regimen that included a barrier cream³⁶ (<i>low quality economic analysis in a Level 1 study</i>) 	
Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies											
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PRIORITY AND ACCEPTABILITY	Is the option acceptable to key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available	
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	Is the option a priority for key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	87.98% (337/383) of respondents to a patient/ informal caregiver survey who identified as having experienced a pressure injury or being at risk of a pressure injury believed that knowing more about preventive skin care practices is important or very important in caring for themselves. In the same survey, 70.94% (603/850) of informal caregivers believed that knowing more about preventive skin care practices is important or very important in caring for their family member/friend with or at risk of a pressure injury. ^{4,5} (<i>Indirect evidence</i>)	
No	Probably No	Uncertain	Probably Yes	Yes	Varies											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>											
FEASIBILITY	Is the option feasible to implement?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Access to topical skin protection products varies according to geographic and clinical location. (<i>Expert opinion</i>) 	
No	Probably No	Uncertain	Probably Yes	Yes	Varies											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>											

Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings <input type="checkbox"/>	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings <input type="checkbox"/>	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i> <input checked="" type="checkbox"/>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings <input type="checkbox"/>	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings <input type="checkbox"/>
Strength of recommendation	Strong negative recommendation: Definitely don't it <input type="checkbox"/>	Weak negative recommendation: Probably don't do it <input type="checkbox"/>	No specific recommendation <input type="checkbox"/>	Weak positive recommendation: Probably do it <input type="checkbox"/>	Strong positive recommendation: Definitely do it <input type="checkbox"/>

Recommendation (text) **No recommendation.**

Justification The small body of evidence on products to moisturize and protect the skin primarily compares different products. The evidence comparing moisturizing the skin to not moisturizing the skin as a strategy to prevent pressure injuries is conflicting. One moderate quality Level 1 study found that a hyperoxygenated fatty acid moisturizer was not more effective than a placebo product for reducing pressure injuries.³⁵ However, a low quality Level 3 study found that application of an emollient cream was more effective than no emollient or moisturizer.³⁶ Two moderate quality^{19,38} and one low quality³⁷ Level 1 studies indicated that there is no statistically significant difference between different moisturizer or emollient products in preventing pressure injuries in individuals at moderate to high risk of pressure injuries. One low quality study³⁶ suggested that in some clinical settings, application of a moisturizer could reduce financial costs associated with pressure injuries.

Clinical question

Is a prophylactic dressing effective for preventing pressure injuries?

Other types of prophylactic dressings (e.g. film, hydrocolloid)

Option: A film or hydrocolloid prophylactic dressing applied to prevent pressure injuries

Comparison: Standard preventive care with no prophylactic dressing, or comparison with a different type of prophylactic dressing

Background: Prophylactic dressings appear to have a role in reducing friction and shear.

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS										
BENEFITS & HARMS OF THE PRACTICE	What is the overall certainty of the evidence?	<table border="0"> <tr> <td>No included studies</td> <td>Very low</td> <td>Low</td> <td>Moderate</td> <td>High</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No included studies	Very low	Low	Moderate	High	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Evidence for reduction in pressure injury incidence</p> <p>Film dressings</p> <ul style="list-style-type: none"> In critically ill individuals with non-invasive face mask (n=90), incidence of Category/Stage I facial pressure injuries was lower with a film dressing compared with no prophylactic dressing (53.3% versus 96.7%, p<0.01), and pressure injuries formed more rapidly with no dressing (no dressing 1111±2169 mins versus film dressing 2628±1655mins).³⁹ (Level 2, moderate quality) In critical ill individuals (n=100), a transparent polyurethane film was associated with a statistically significantly lower incidence of heel pressure injuries compared with standard care only (6% vs 18%, p<0.001)⁴⁰ (Level 2, low quality) <p>Hydrocolloid dressings</p> <ul style="list-style-type: none"> In critically ill individuals with non-invasive face mask (n=90), incidence of Category/Stage I facial pressure injuries was lower with a hydrocolloid dressing compared with no dressing (40% versus 96.7%, p<0.01) and pressure injuries formed more rapidly with no dressing (no dressing 1111±2169 mins versus hydrocolloid dressing 3272±2566 mins).³⁹ (Level 2, moderate quality) In individuals in critical care (n=30) there was no statistically significant difference between a ceramide-containing hydrocolloid dressing and no dressing for Category/Stage I pressure injuries after seven days (hydrocolloid dressing 3.3% vs no dressing 13.3%, p=0.353).⁴¹ (Level 2, moderate quality) <p>Strength of Evidence: B2 - Level 2 studies of low quality providing direct evidence</p>	<p>Comparison between different prophylactic dressings</p> <p><i>Film versus hydrocolloid</i></p> <ul style="list-style-type: none"> In critically ill individuals with non-invasive face mask (n=90), incidence of Category/Stage I facial pressure injuries was not statistically significantly different between a group with a film dressing and those with hydrocolloid dressing (film 53.3% vs hydrocolloid 40%, p>0.05).³⁹ (Level 2, moderate quality) In individuals in critical care (n=160), incidence of pressure injuries of the trochanter and sacrum was statistically significantly lower with a polyurethane film dressing compared with hydrocolloid dressing (8.7% versus 15%, p=0.038).⁴² (Level 1, low quality)
	No included studies	Very low	Low	Moderate	High									
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	Is there important uncertainty about how much people value the main outcomes?	<table border="0"> <tr> <td>Important uncertainty or variability</td> <td>Possibly important uncertainty or variability</td> <td>Probably no important uncertainty or variability</td> <td>No important uncertainty or variability</td> <td>No known undesirable outcomes</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability	No known undesirable outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
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	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS												
RESOURCE USE	How substantial are the resource requirements?	<table border="0"> <tr> <td>Not clear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> <td>Varies</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In critical care settings in Brazil, a film prophylactic dressing was 3.8 times more cost effective than a hydrocolloid prophylactic dressing. ^{43,44} (<i>Low quality economic analysis</i>)
Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies										
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PRIORITY AND ACCEPTABILITY	Is the option acceptable to key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available
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No	Probably No	Uncertain	Probably Yes	Yes	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
FEASIBILITY	Is the option feasible to implement?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> In critically ill individuals with non-invasive face mask (n=90), a film dressing did not adhere to the skin as effectively as a hydrocolloid dressing.³⁹ (<i>Level 2, moderate quality</i>) Prophylactic dressing may not be available in all clinical settings and geographic settings (<i>Expert opinion</i>).
No	Probably No	Uncertain	Probably Yes	Yes	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										

Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Strength of recommendation	Strong negative recommendation: Definitely don't it	Weak negative recommendation: Probably don't do it	No specific recommendation	Weak positive recommendation: Probably do it	Strong positive recommendation: Definitely do it
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Recommendation (text)	No recommendation
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Justification

No recommendation is made. The evidence for film dressings to protect the skin relates to use under medical devices. The relevant recommendation is included in the chapter, *Medical Device Related Pressure Injuries*. The evidence for hydrocolloid dressings to protect skin relates to protecting the heels. The relevant recommendation is included in the chapter, *Heel Pressure Injuries*.

A smaller body of evidence supports using a polyurethane film dressing or a hydrocolloid dressing to protect the skin. Two Level 2 studies of moderate³⁹ and low quality,⁴⁰ both conducted in critical care settings, reported statistically significantly lower pressure injury incidence when a film dressing was applied, compared to not using a prophylactic dressing. One study³⁹ also reported that pressure injuries formed less rapidly when a film dressing was used. A moderate quality Level 2 study³⁹ reported statistically significantly lower incidence of Category/Stage I pressure injuries when a hydrocolloid dressing was applied, also with a longer time to pressure injury development than when no dressing was used.³⁹ However, a small moderate quality Level 2 study reported there was no statistically significant difference between a hydrocolloid dressing and no prophylactic dressing for preventing pressure injuries. In two studies^{39,42} that reported a comparison between a polyurethane film dressing to a hydrocolloid dressing (one low quality Level 1⁴² and one moderate quality Level 2³⁹), the polyurethane film dressing was superior.

Clinical question Are continence management strategies effective in preventing and treating pressure injuries?

Continence Management –fecal incontinence aids

Option: Continence management strategies that promote reduced exposure to stool
Comparison: Standard care

Background: Incontinence can lead to prolonged skin exposure to excess moisture and chemical irritants in feces. Implementing an incontinence management plan can reduce exposure to moisture and chemical irritants.

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS										
BENEFITS & HARMS OF THE PRACTICE	What is the overall certainty of the evidence?	<table border="0"> <tr> <td><i>No included studies</i></td> <td><i>Very low</i></td> <td><i>Low</i></td> <td><i>Moderate</i></td> <td><i>High</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>No included studies</i>	<i>Very low</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Evidence for fecal incontinence devices reducing pressure injury incidence</p> <ul style="list-style-type: none"> In individuals in acute care with neurogenic fecal incontinence (n=100), a suspension positioning system in which the perianal area is elevated between 45° and 60° was associated with significantly fewer Category/Stage I pressure injuries than a standard bowel management program that included no specific containment device (6% versus 23%, p=0.001) but there was no significant difference in Category/Stage III or IV pressure injuries.⁴⁵ (<i>Level 1, high quality</i>) In critically ill individuals (n=56), there was no significant difference in pressure injury incidence between three different strategies for managing fecal incontinence: bowel management system catheter (BMS), rectal trumpet or usual care using a barrier cream with or without a fecal pouch (BMS 42.9% versus RT 35% versus usual care 27.8%, p=0.63).⁴⁶ (<i>Level 1, low quality</i>) <p>Adverse events</p> <p>In critically ill individuals (n=56) receiving internal fecal management devices, 7.7% of participants experienced rectal bleeding, but this was deemed to be unrelated to the device.⁴⁶ (<i>Level 1, low quality</i>)</p> <p>Strength of Evidence: C</p>
	<i>No included studies</i>	<i>Very low</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>								
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
	Is there important uncertainty about how much people value the main outcomes?	<table border="0"> <tr> <td><i>Important uncertainty or variability</i></td> <td><i>Possibly important uncertainty or variability</i></td> <td><i>Probably no important uncertainty or variability</i></td> <td><i>No important uncertainty or variability</i></td> <td><i>No known undesirable outcomes</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<i>Important uncertainty or variability</i>	<i>Possibly important uncertainty or variability</i>	<i>Probably no important uncertainty or variability</i>	<i>No important uncertainty or variability</i>	<i>No known undesirable outcomes</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	<i>Important uncertainty or variability</i>	<i>Possibly important uncertainty or variability</i>	<i>Probably no important uncertainty or variability</i>	<i>No important uncertainty or variability</i>	<i>No known undesirable outcomes</i>								
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>									
How substantial are the desirable anticipated effects?	<table border="0"> <tr> <td><i>Unclear</i></td> <td><i>Not substantial</i></td> <td><i>Probably not substantial</i></td> <td><i>Probably substantial</i></td> <td><i>Substantial</i></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>Unclear</i>	<i>Not substantial</i>	<i>Probably not substantial</i>	<i>Probably substantial</i>	<i>Substantial</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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<i>Unclear</i>	<i>Not substantial</i>	<i>Probably not substantial</i>	<i>Probably substantial</i>	<i>Substantial</i>									
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Do the desirable effects outweigh the undesirable effects?	<table border="0"> <tr> <td><i>No</i></td> <td><i>Probably No</i></td> <td><i>Uncertain</i></td> <td><i>Probably Yes</i></td> <td><i>Yes</i></td> <td><i>Varies</i></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>No</i>	<i>Probably No</i>	<i>Uncertain</i>	<i>Probably Yes</i>	<i>Yes</i>	<i>Varies</i>								
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								

	CRITERIA	JUDGEMENTS	RESEARCH EVIDENCE AND ADDITIONAL CONSIDERATIONS												
RESOURCE USE	How substantial are the resource requirements?	<table border="0"> <tr> <td>Not clear</td> <td>Not substantial</td> <td>Probably not substantial</td> <td>Probably substantial</td> <td>Substantial</td> <td>Varies</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In the critical care setting, using an internal fecal device was associated with cost savings of \$3100 to \$3400 (USD, 2012) over 29 days attributed to reduction in nursing hours. ⁴⁶ (<i>low quality economic analysis</i>)
Not clear	Not substantial	Probably not substantial	Probably substantial	Substantial	Varies										
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
PRIORITY AND ACCEPTABILITY	Is the option acceptable to key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> In the critical care setting, health professionals preferred using a rectal trumpet (82%) over a bowel management system catheter (78%) and usual care (0%).⁴⁶ (<i>Level 1, low quality</i>) No evidence available from individuals with pressure injuries.
	No	Probably No	Uncertain	Probably Yes	Yes	Varies									
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
Is the option a priority for key stakeholders?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No evidence available	
No	Probably No	Uncertain	Probably Yes	Yes	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
FEASIBILITY	Is the option feasible to implement?	<table border="0"> <tr> <td>No</td> <td>Probably No</td> <td>Uncertain</td> <td>Probably Yes</td> <td>Yes</td> <td>Varies</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	No	Probably No	Uncertain	Probably Yes	Yes	Varies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> In critically ill individuals (n=56) receiving internal fecal management devices, 23.1% withdrew from the trial due to the device falling out.⁴⁶ (<i>Level 1, low quality</i>) In some settings, implementing continence might be challenging (e.g., community settings) and in some clinical and geographic settings devices used for incontinence management may not be available or feasible to use. (<i>Expert opinion</i>)
No	Probably No	Uncertain	Probably Yes	Yes	Varies										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										

Balance of consequences	Undesirable consequences <i>clearly outweigh</i> desirable consequences in most settings <input type="checkbox"/>	Undesirable consequences <i>probably outweigh</i> desirable consequences in most settings <input type="checkbox"/>	The balance between desirable and undesirable consequences <i>is closely balanced or uncertain</i> <input type="checkbox"/>	Desirable consequences <i>probably outweigh</i> undesirable consequences in most settings <input checked="" type="checkbox"/>	Desirable consequences <i>clearly outweigh</i> undesirable consequences in most settings <input type="checkbox"/>
Strength of recommendation	Strong negative recommendation: Definitely don't it <input type="checkbox"/>	Weak negative recommendation: Probably don't do it <input type="checkbox"/>	No specific recommendation <input type="checkbox"/>	Weak positive recommendation: Probably do it <input type="checkbox"/>	Strong positive recommendation: Definitely do it <input type="checkbox"/>
Recommendation (text)	No recommendation				
Justification	Two studies provided evidence on management of fecal incontinence. A high quality Level 1 study ⁴⁵ reported a significant reduction in Category/Stage I pressure injuries from use of a suspension positioning device that elevates the perianal region, thereby reducing exposure to urinary and fecal material. A low quality Level 1 study ⁴⁶ found that there was no statistically significant difference in pressure injury incidence between three different methods of managing fecal incontinence: rectal trumpet, a bowel management catheter or barrier cream with or without a fecal pouch.				

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