Pressure injury In Critically ill Patients

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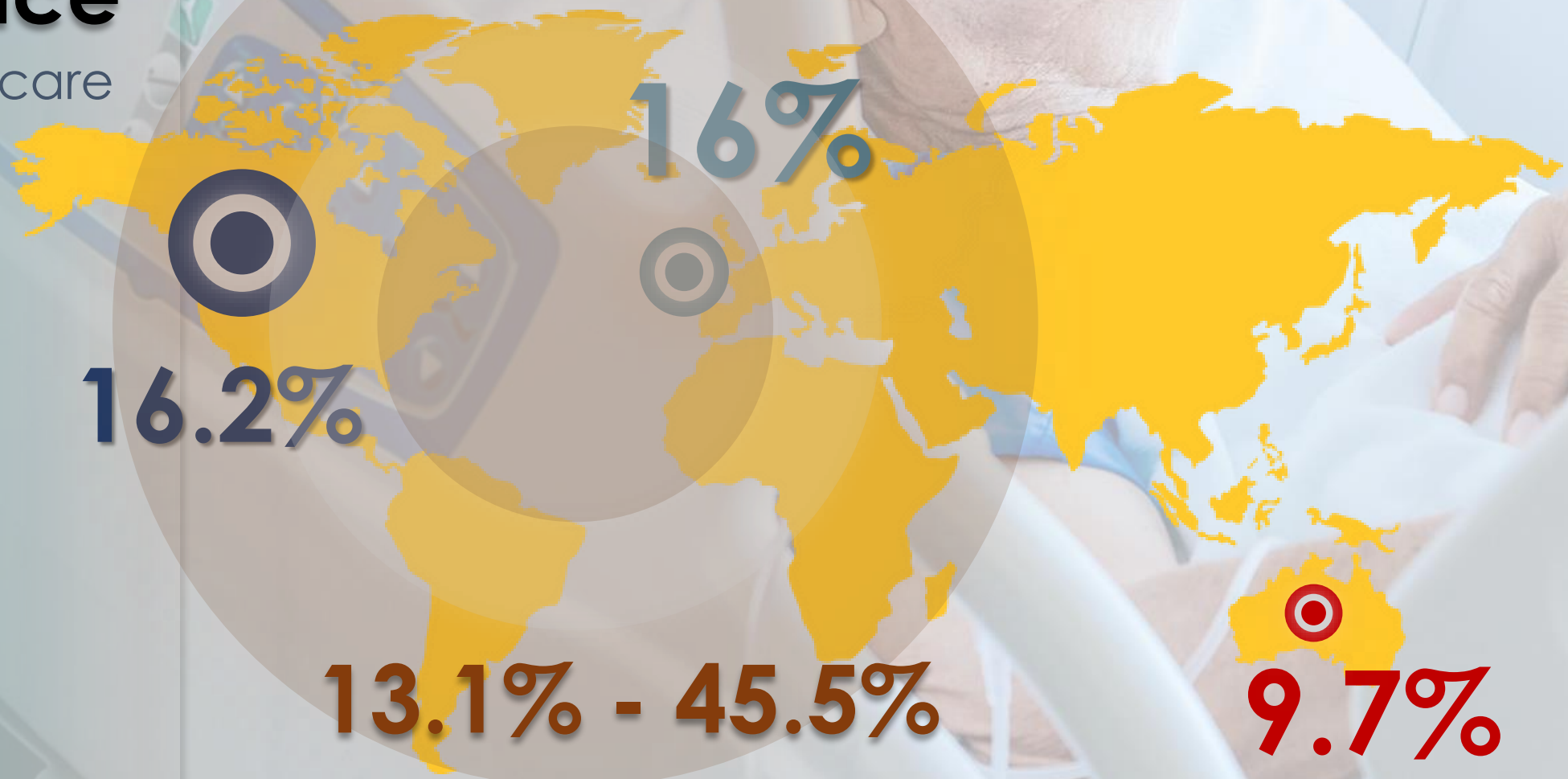
Pressure injuries

Prevalence

In the critical care units



https://pubmed.ncbi.nlm.nih.gov/30095501

Pressure injuries

Cost

In the critical care units

11 days

$10,708

$26.8 billion

https://pubmed.ncbi.nlm.nih.gov/33034686

Pressure injuries

Mechanism of injury

1. Compression force
2. Shear Force
3. Friction force

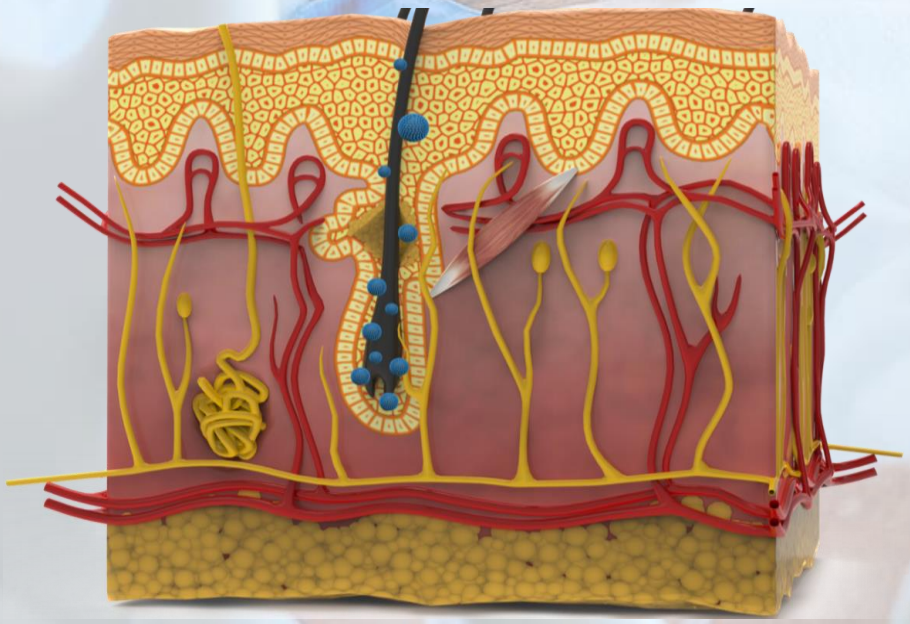
Tissue Tolerance

Hypoperfusion
Vasopressors
Hypoxia
Anemia
Old age

Pressure injuries

Mechanism of injury

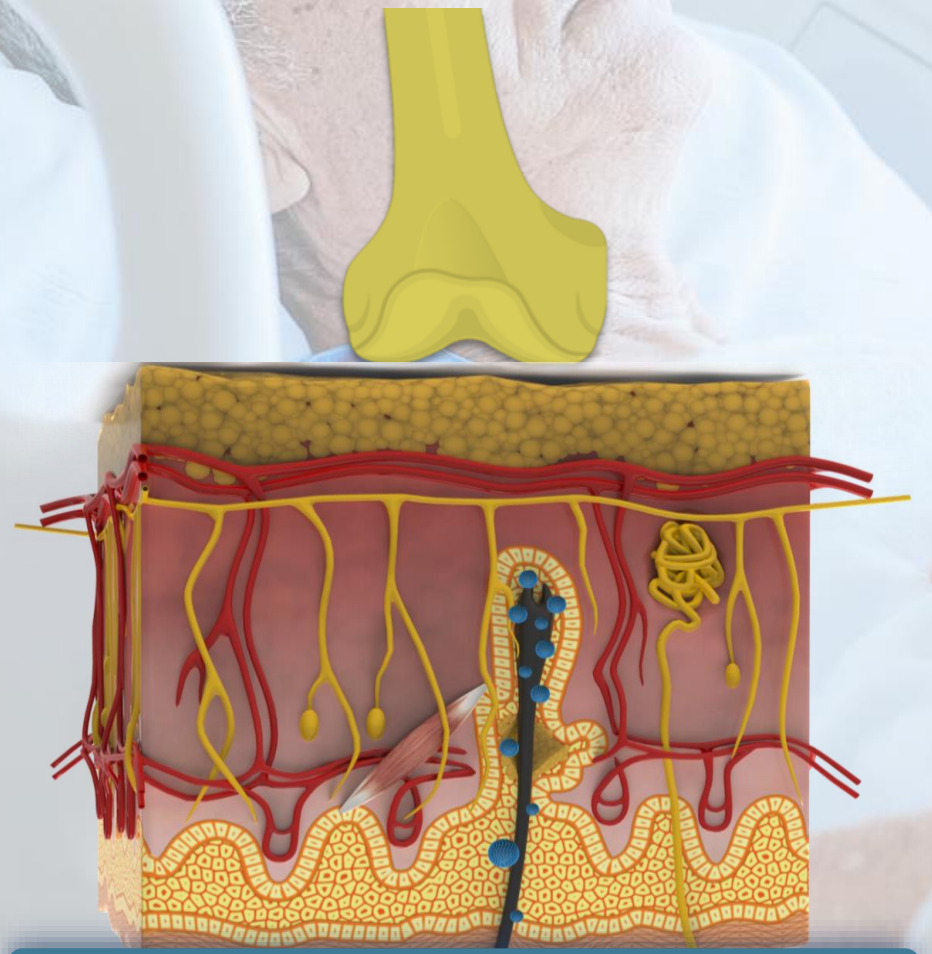
1. Compression force



Pressure injuries

Mechanism of injury

1. Compression force



Bed

Pressure injuries

Mechanism of injury

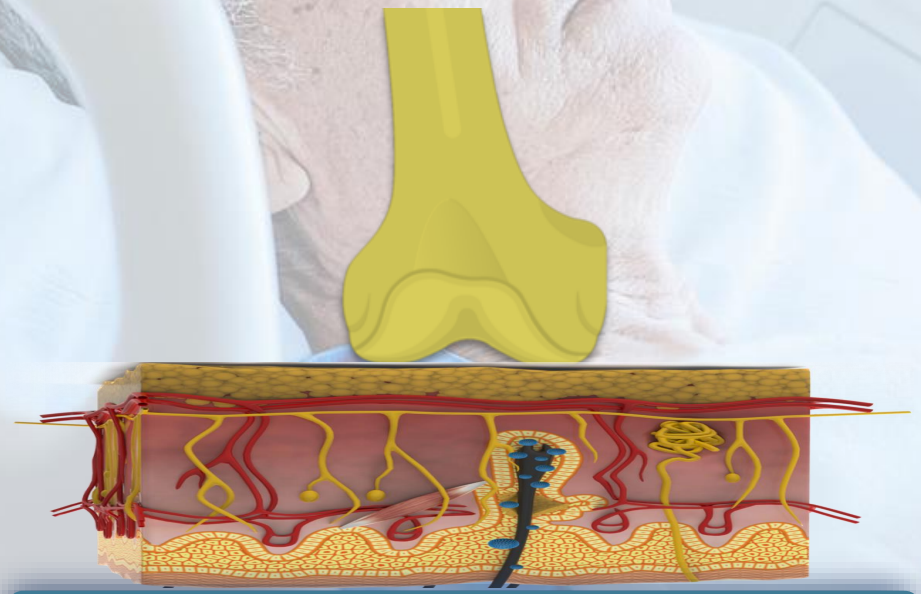
1 Compression force

Duration

2 Hours

Intensity

Temperature



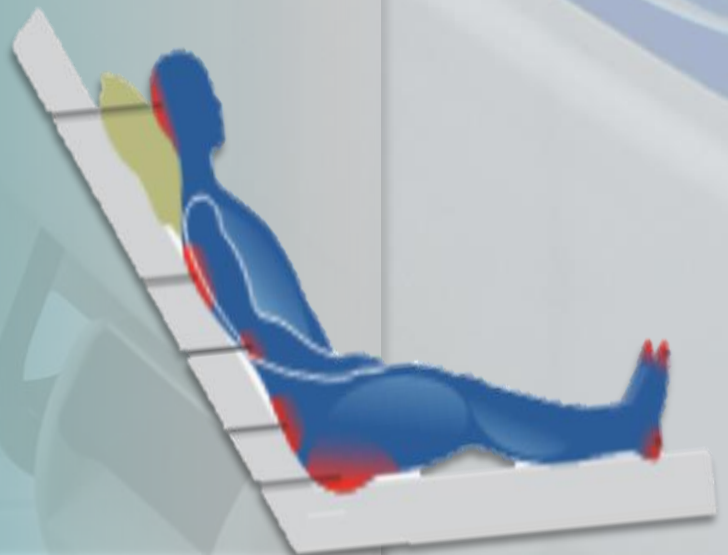
Tissue ischemia

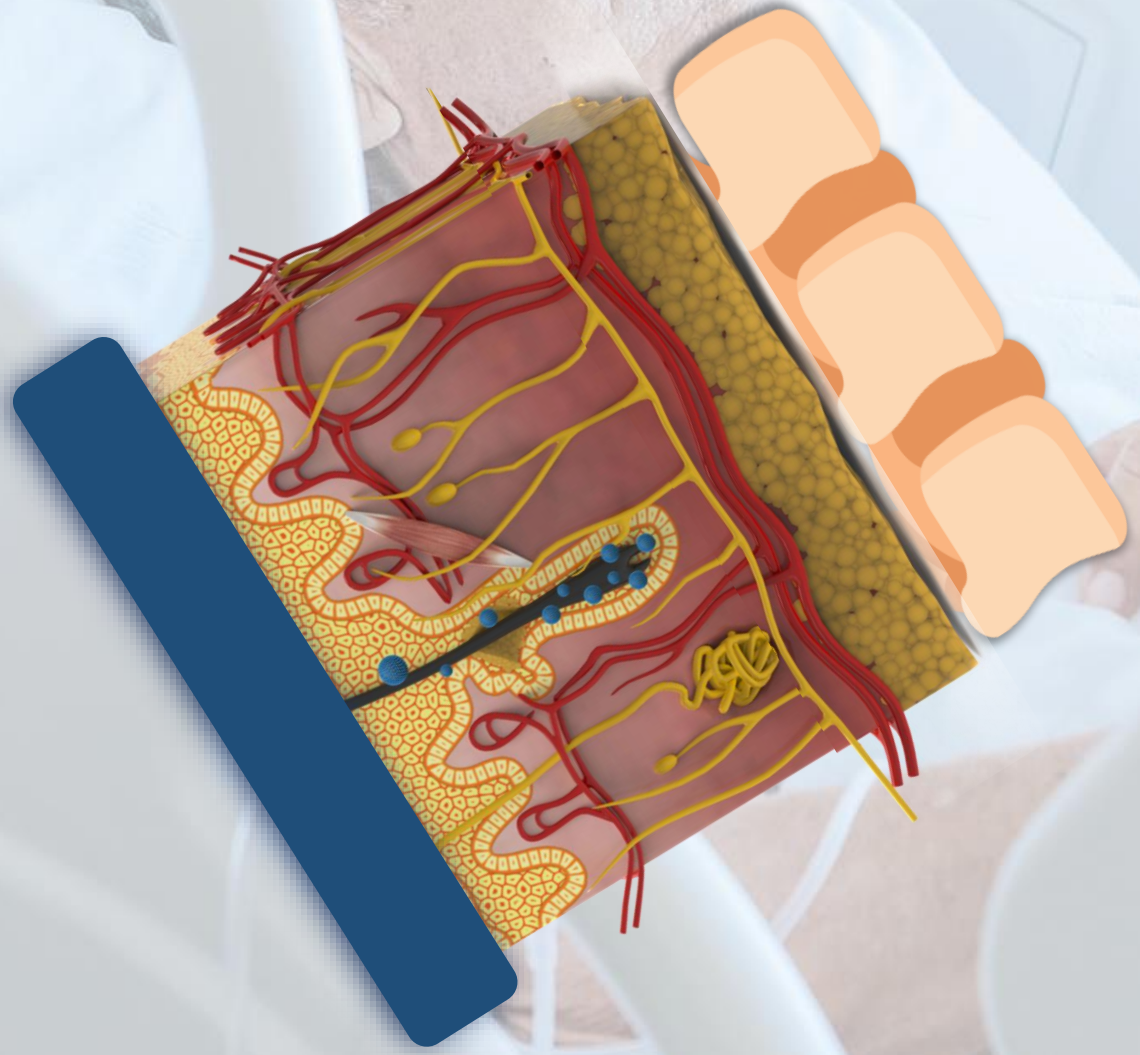
Reperfusion injury

Pressure injuries

Mechanism of injury

2 Shear Force

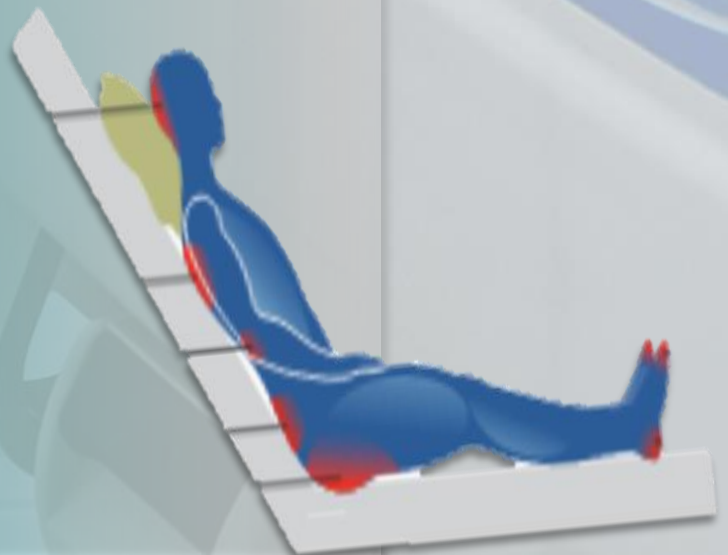


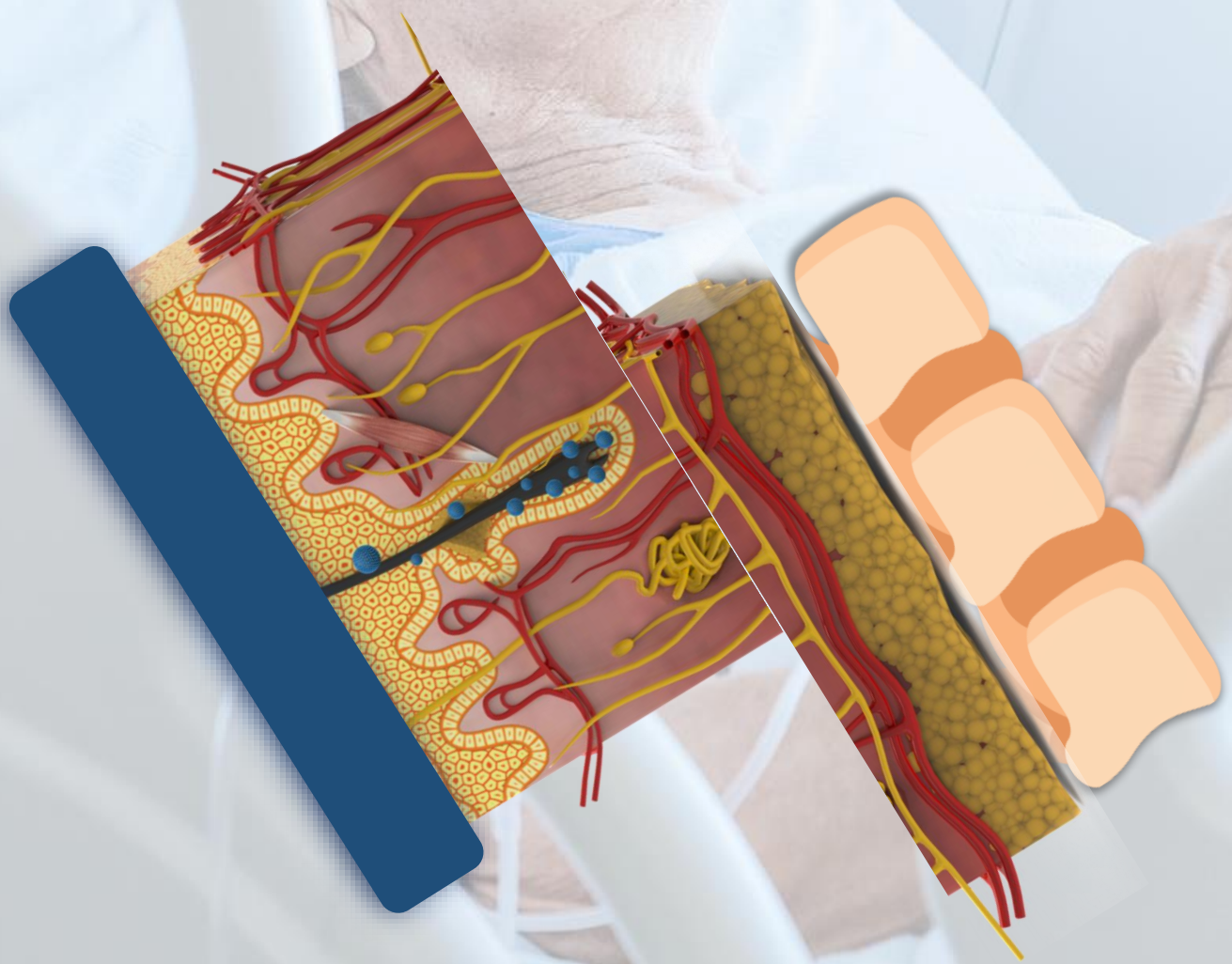


Pressure injuries

Mechanism of injury

2 Shear Force





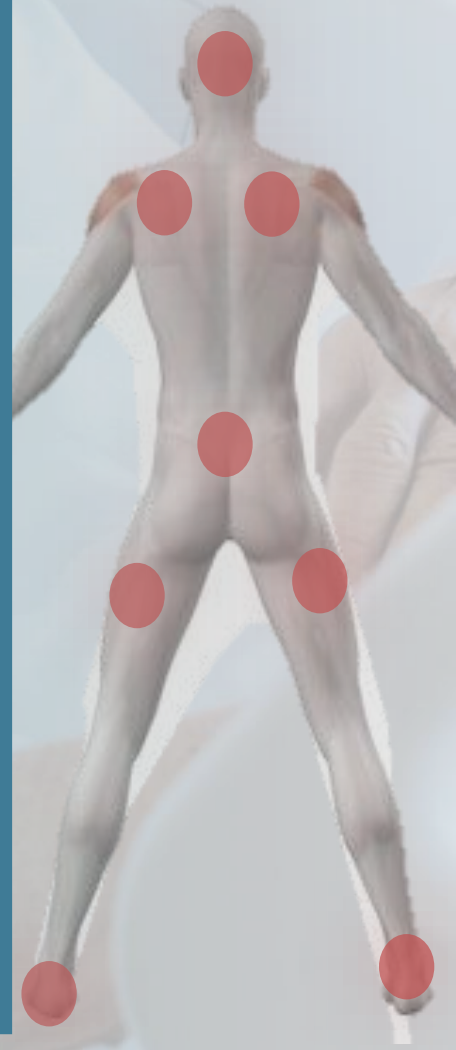
Pressure injuries

pressure Injury

Localized damage to the skin and/or underlying tissue, because of pressure, or pressure in combination with shear.

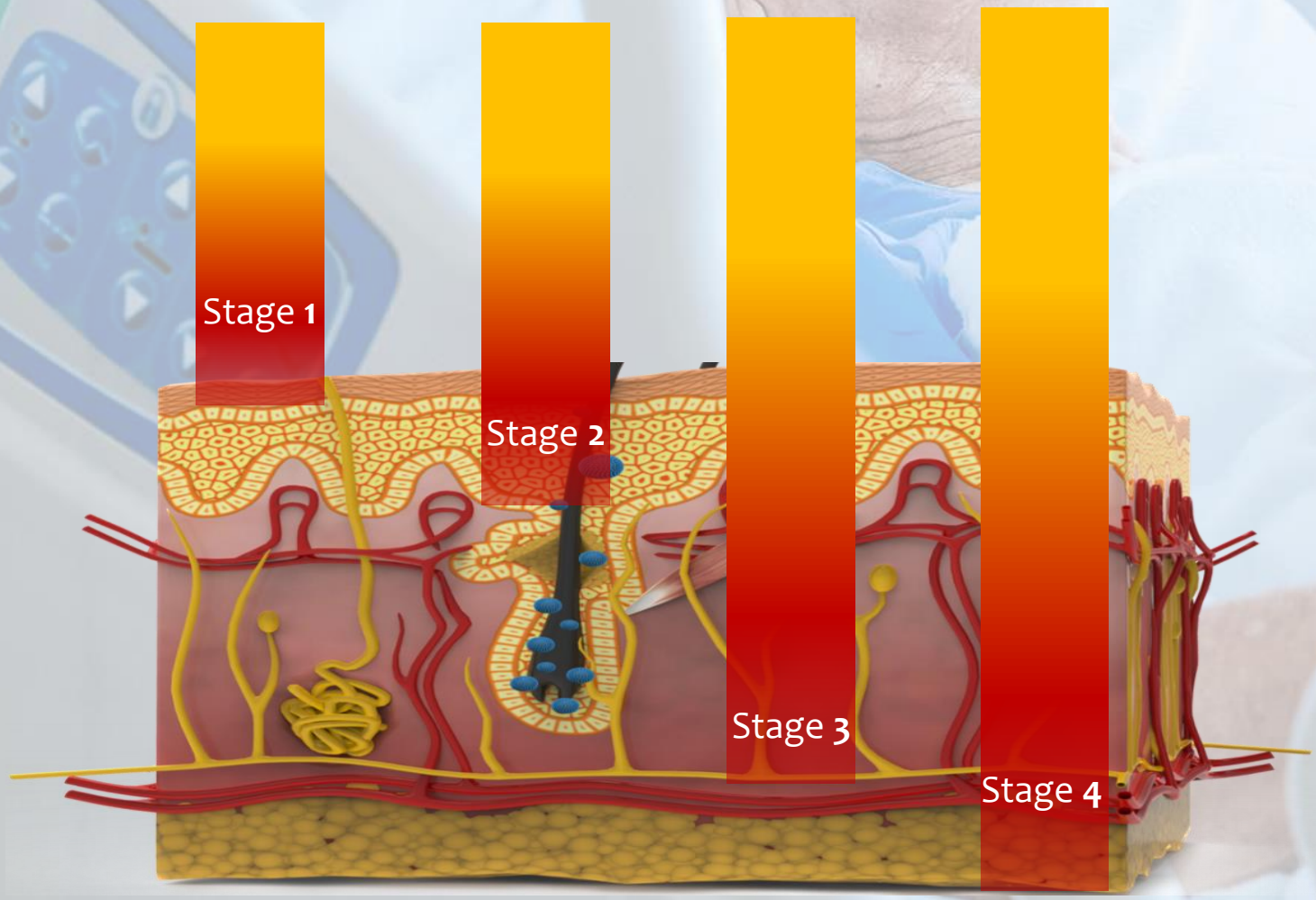
It usually occurs over a bony prominence, but may also be related to a medical device or other object

(**EPUAP**, 2019).



Stages

Pressure injuries



Pressure injuries

Stages

Unstageable

Deep Tissue injury (DTI)

Prevention

Prevention

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Prevention

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Pressure injury risk assessment tool (Braden – Norton)

Nutritional status

Clinical assessment of patient condition

Skin assessment

Structured risk assessment

Prevention

Structured risk assessment

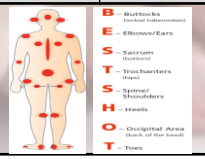
Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Structured pressure injury risk assessment

Norton risk tool	Physical condition	Mental condition	Activity	Mobility	Incontinent
	4 = Good	4 = Alert	4 = Ambulant	4 = Full	4 = Not
	3 = Fair	3 = Apathetic	3 = Walk with help	3 = Slightly impaired	3 = Occasionally
	2 = Poor	2 = Confused	2 = Chair bound	2 = Very limited	2 = Usually/Urine
	1 = Very bad	1 = Stupor	1 = Bed bound	1 = Immobile	1 = Doubly
	Total score =				
Malnutrition Universal Screening Tool (MUST)	BMI	Unplanned weight loss in past 3 – 6 months (% body weight)		acute disease effect and score.	
	0 = >20	0 = <5 No weight loss (or gained weight)		2 = No nutritional intake for more than 5 days. Critically ill patients who have swallowing difficulties (e.g. after stroke).	
	1 = 18.5 - 20	1 = 5-10			
	2 = <18.5	2 = >10			
	Total score =				
Clinical judgment of the patient condition	High risk if the patient has one or more of the following	Shock		Moderate risk if the patient has one or more of the following	Dementia
		Vasopressors			Diabetes
		Peripheral artery disease			Neuropathy
		Venous insufficiency			Age >65 years
		Respiratory disease			Medication.
		Mechanical vent			
		APACHI score > 10			
		Sepsis			
		Organ failure			
		Chronic renal failure			
		Sedation			
		Increased temperature			
	Yes = Positive risk No= No risk			Yes = Positive risk No= No risk	
Skin assessment	Redness or erythema				
	Non-blanching erythema Press on the red area using your finger for 5 sec				
	Local Warm or Cold skin				
	Skin discoloration in the dark-pigmented skin patient				
	Skin hardness over the bony prominences				
	Boggy sensation				
	Broken Skin (including pressure ulcer)				
	Medical device related skin changes				
	Yes = Positive finding No= No findings			Please mark the affected area	
Date			Time		
Nurse name:			ID	Signature & stamb	
Physician name:			ID	Signature & stamb	

Low

Moderate

High

Prevention

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

- Prompt treatment of hypotension
- Limiting vasoconstrictive agents
- Improving cardiac contractility
- Correct anemia

Prevention

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Energy	30-35 Kcal/kg
Protein	1.25-2 g/kg
Supp	Glutamate, Zink Arginine Ca
Hydration	30 ml/kg

Prevention

Early risk assessment
Improve skin perfusion
Nutritional support
Pressure redistribution

01

Support surfaces

- ✓ Overlays
- ✓ Bed mattresses
- ✓ Air or gel-filled

02

Positioning

- ✓ Position and inclination
- ✓ Repositioning

Prevention

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Overlays

Air or gel-filled

Prevention

Bed mattresses

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Prevention

Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Positioning

Prevention

Positioning

Early risk assessment

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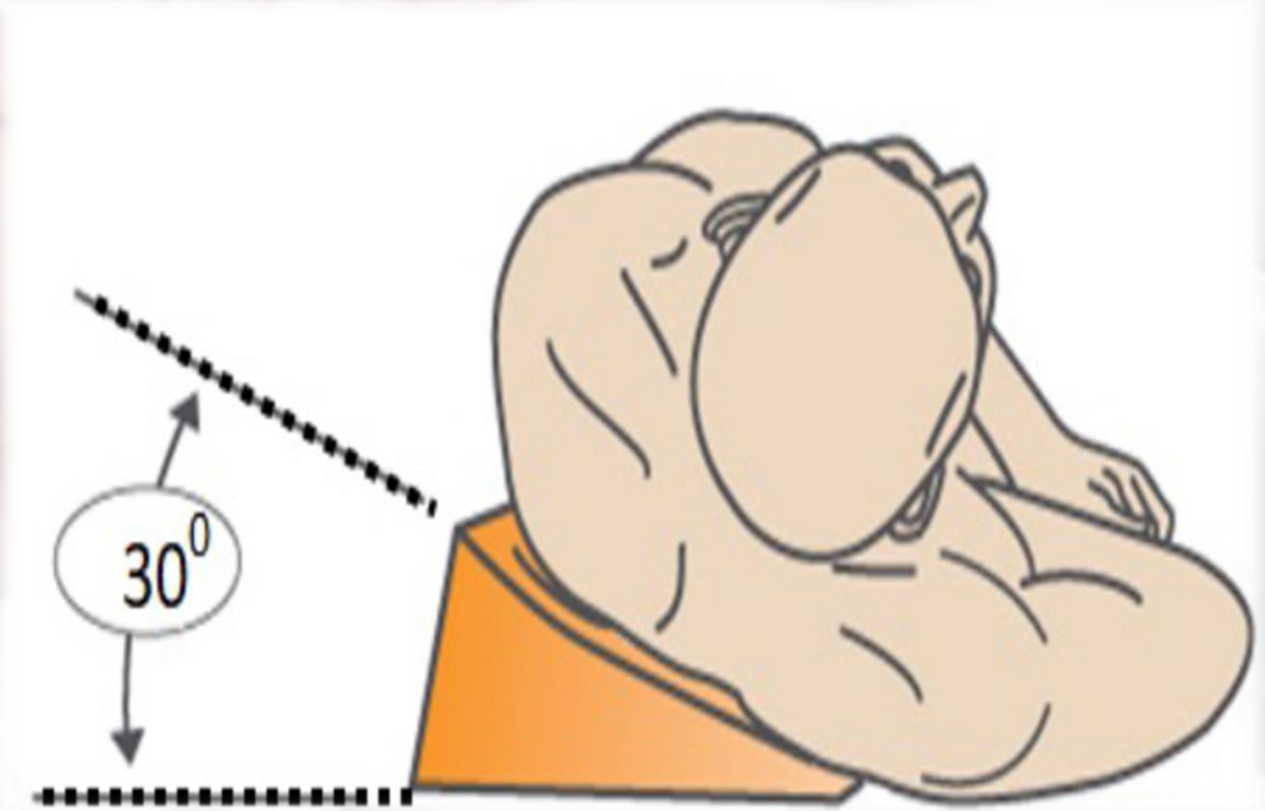
Pressure redistribution



Prevention

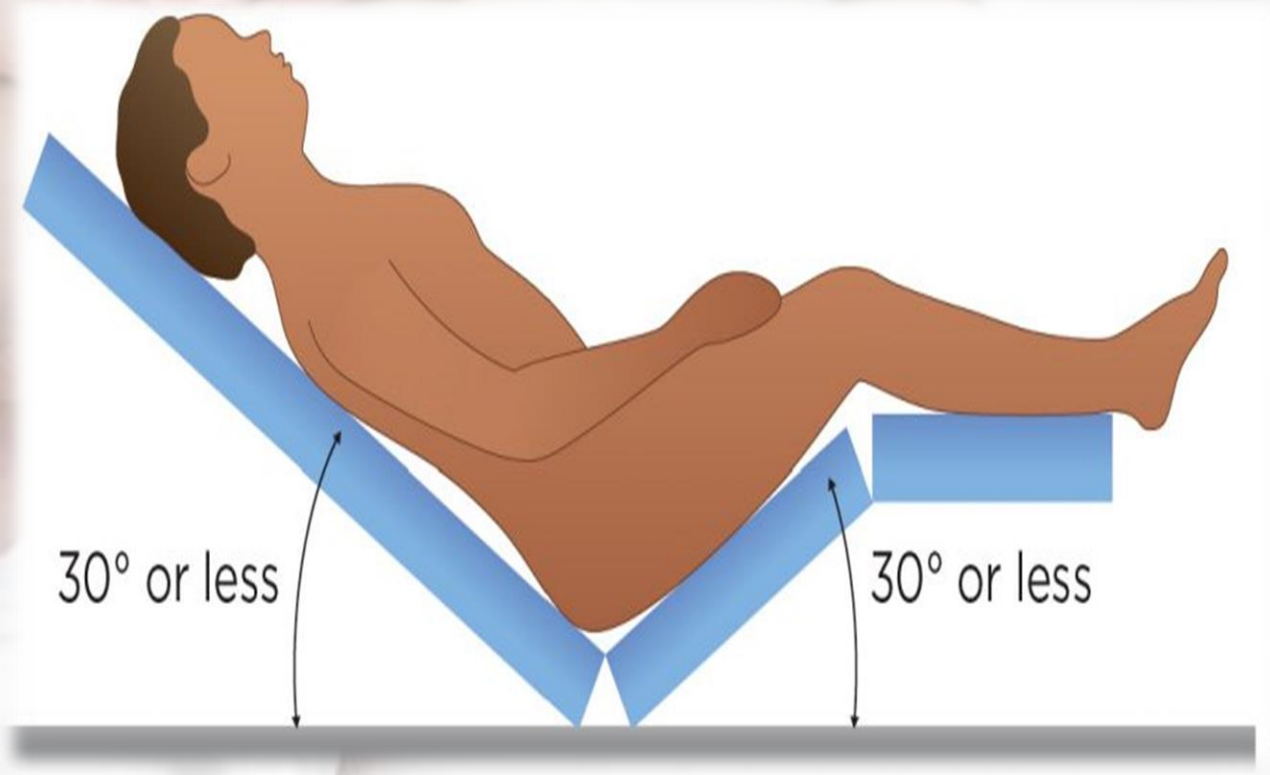
Early risk assessment

Improve skin perfusion

Nutritional support

Pressure redistribution

Positioning



Prevention

SSKINT Bundle

Pressure injury prevention care plan

Chronic Care Specialized Medical Hospital

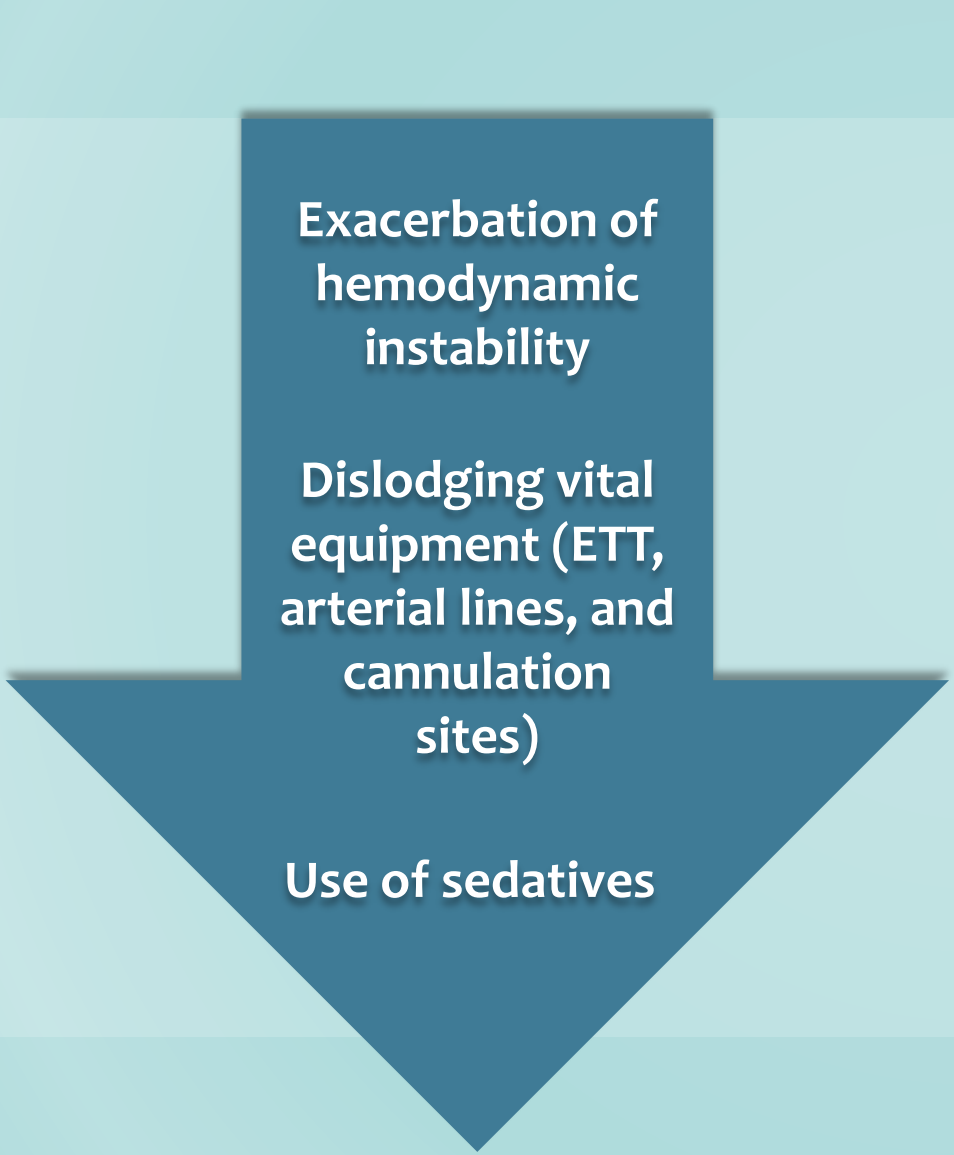
Name:_____ MR#:_____
DOB:_____Gender:_____
Sponsor:_____ Level:_____

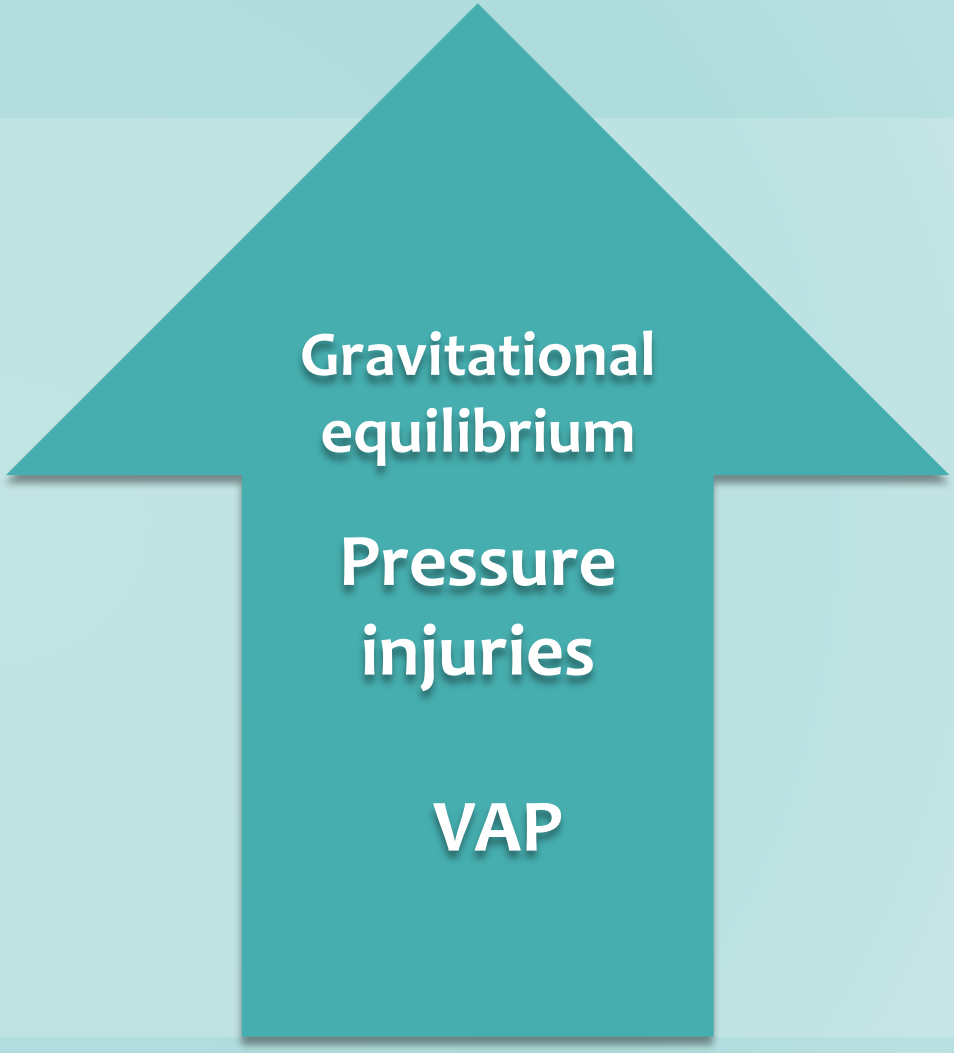
Floor:_____ Room#:_____

Frequency of care		Every 2H					Every 3H						Every 4H						
Date		/	/																
Time (using 24 hour clock)																			
Skin inspection – Check skin over boney prominence, and record **(ND)** if NO skin damage - **(R)** for non-blanchable redness - **(D)** for discolouration For dark skin patients or DTI																			
All **pressure areas** checked? (V) if yes - (X) if NO																			
Record appearance of skin (**ND,R,D**)																			
If **NEW** skin changes, mention it's site																			
If old PI, mention it's site																			
Skin area under medical device has no skin injury? (V) if yes - (X) if NO																			
If NEW lesion, mention it's site																			
Surface – Ensure pressure redistribution support surfaces are appropriate - (V) if yes - (X) if NO for the next																			
Mattress	Adjusted to patient weight																		
	Alternating mode																		
Heel	free Or protector																		
Keep moving (Repositioning) Mark (V) next the patient position - **Make sure it is the same with the turning clock**																			
B E D	Right side (30 degree tilt)																		
	Left side (30 degree tilt)																		
	Back																		
CHAIR	Reposition every one hour																		
Incontinence (moisture) Inspected area **wet** ( ) or **Clean and dry** ( ) - If wet mark (V) next to the cause																			
Urin																			
Bowel																			
Skin care regimine is implemented																			
Physcian informed (for management)																			
Nutrition – (V) if yes - (X) if NO for the next																			
MUST score																			
Patient received his planed feeding																			
Tissue tolerance - for critically ill patients Mark (V) if yes (X) if NO for the next - **Ensure slowly turning (avoid holding of repositioning unless there is sustained heamodynamic instability for 10 min following the turning**																			
Hypotension MAP <60 mmhg																			
vasopressors																			
Hypoxic Spo2 <90																			
Initials																			

If the patient is hemodynamically unstable

- Hold the turning
- Continue at the same frequency as when stable


Exacerbation of hemodynamic instability
Dislodging vital equipment (ETT, arterial lines, and cannulation sites)
Use of sedatives


Gravitational equilibrium
Pressure injuries
VAP

When NOT to Turn the patient

Life-threatening arrhythmia: VF - VT

Active fluid resuscitation (i.e. no fluids going on = no systemic blood pressure).

Active bleeding

Hemodynamic parameters do not recover within 10 minutes of repositioning.

How to apply turning

Go
Slowly

15
degrees

Lateral
position

30 degrees
position

10 min

8 hours

Treatment

Wound care

Wound care bundle (TIMERS)

+

Pressure redistribution

TIMERS

Is a framework focused on management of specific, important parameters of the wound.

Wound care

T	Tissue	Clean wound bed, debride devitalised tissue
I	Infection	Inflammation, infection and biofilm controlled
M	Moisture	Manage moisture
E	Edge	Reduced wound size - Epithelialisation
R	Repair	Wound closure, repair tissue
S	Social	Engage the patient with the care plan

Pressure ulcer treatment

- Wound condition
  - Infected (Green)
  - Not-infected


Thank you