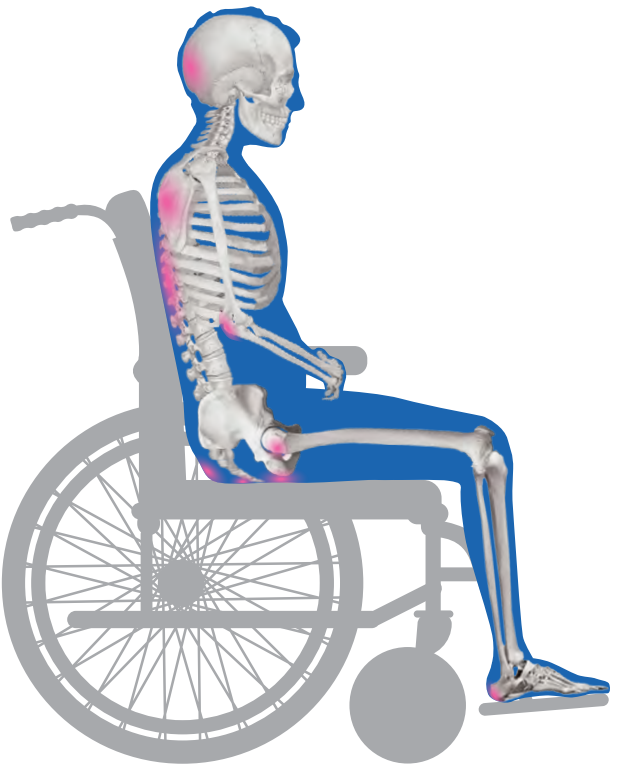
Wheelchair Seating Pocket Guide

Selecting wheelchair seating components for pressure injury prevention and treatment



PAN PACIFIC
Pressure Injury Alliance

permobil

Purpose

In 2019, the Pan Pacific Pressure Injury Alliance (PPPIA), which includes wound organisations from Australia, New Zealand, Hong Kong and Singapore, partnered with the National Pressure Injury Advisory Panel (NPIAP) and the European Pressure Ulcer Advisory Panel (EPUAP) to release the third edition of Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline (known as the 2019 International Guideline).

The 2019 International Guideline is based on a comprehensive literature review on pressure injury prevention and treatment that is relevant to all health disciplines. Rigorous appraisal of published research resulted in evidence-based recommendations that all disciplines can and should follow to consistently apply best practice to pressure injury prevention and treatment.

By referencing the 2019 International Guideline, doctors, surgeons, nurse practitioners, nurses and allied health professionals will understand the importance the seated posture plays in the prevention and treatment of pressure injuries to consistently apply best practice.

This pocket guide is based on recommendations and best practice statements included in the 2019 International Guideline. It is intended as a brief overview and is best used in conjunction with the full 2019 International Guideline and the free abridged Quick Reference Guide.

Clinical Practice Guideline cited throughout:
European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance.
Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline.The International Guideline. Emily Haesler (Ed.)
EPUAP/NPIAP/PPPIA: 2019.

What type of individual should be using a high specification seating support surface?

The number one factor in common among all wheelchair users is impaired mobility. As stated in the introduction of 2019 International Guideline, “a number of contributing or compounding factors are associated with pressure injuries; the primary of which is impaired mobility.”

Seating support surfaces specifically designed for tissue offloading should be used with individuals with certain risk factors, instead of “entry-level” surfaces. As outlined in the recommendations and good practice statements in the 2019 International Guideline, the following factors impact pressure injury (PI) risk. Refer the individual for a seating and wheelchair mobility evaluation if any of these apply:

- Limited mobility and limited activity - *1.1*
- Previous/current pressure injury - *1.2, 1.3, 1.4*
- Alterations to skin condition over pressure points - *1.5*
- Pain at pressure points - *1.6*
- Diabetes mellitus - *1.7*
- Perfusion and circulation deficits - *1.8*
- Oxygenation deficits - *1.9*
- Impaired nutrition - *1.10*
- Moist skin - *1.11*
- Increased body temperature - *1.12*
- Older age - *1.13*
- Impaired sensory perception - *1.14*
- Obesity - *7.3*

How do I identify at risk individuals?

The EPUAP/NPIAP/PPPIA published good practice statements regarding the screening process to quickly identify individuals at risk. Consider implementing the following processes:

- Conduct a PI risk screening as soon as possible after admission to the care service and periodically thereafter - *1.21*
- Include a tissue and skin inspection with every PI risk screening - *2.1*
  - π Re-screen the individual's pressure injury risk periodically
- Develop and implement a risk-based prevention plan for individuals identified as being at risk. - *1.23* (see risk factors on previous page)
- Conduct a comprehensive skin and tissue assessment for all individuals at risk of pressure injury: - *2.1*
  - π As soon as possible after admission/transfer to the healthcare service
  - π As part of every risk assessment
  - π Periodically as indicated by individual's degree of PI risk
  - π Prior to discharge from care service

Utilise a screening tool such as the sample on the next page. Feel free to copy and use it as an initial screen during your assessment.

Sample screening

According to the 2019 International Guideline published by PPPIA with its partners, consider the following factors for risk of pressure injury:

Physical impairments that could increase risk of pressure injury:	**PRESENT? Y/N**	
Limited mobility and limited activity - *1.1*	Yes	No
Previous/current pressure injury - *1.2, 1.3, 1.4*	Yes	No
Alterations to skin status over pressure points - *1.5*	Yes	No
Pain at pressure points - *1.6*	Yes	No
Diabetes mellitus - *1.7*	Yes	No
Perfusion and circulation deficits - *1.8*	Yes	No
Oxygenation deficits - *1.9*	Yes	No
Impaired nutrition - *1.10*	Yes	No
Moist skin - *1.11*	Yes	No
Increased body temperature - *1.12*	Yes	No
Older age - *1.13*	Yes	No
Impaired sensory perception - *1.14*	Yes	No

If you answer yes to any of the risk factors listed...

Take action:
Refer to therapy for seating evaluation*

Take action:
Prescribe a high specification support surface

*If the individual is a full-time wheelchair user, always refer to a seating specialist.

Once I know I have an individual at risk, what does the International Guideline recommend?

The 2019 International Guideline recommends the following for an at risk individual:	
Select a support surface that meets the individual's need for pressure redistribution based on the following factors: - *7.1*	• Level of immobility and inactivity • Need to influence microclimate and shear reduction • Size and weight of the individual • Number, severity, and location of existing PIs • Risk for developing new PIs
For individuals with a PI, consider changing to a specialty support surface when the individual: - *7.9*	• Cannot be positioned off the existing PI • Has PIs on two or more turning surfaces that limit repositioning options • Has a PI that fails to heal or the PI deteriorates despite appropriate comprehensive care • Is at high risk for additional PI • Has undergone flap or graft surgery • Is uncomfortable • "Bottoms out" on current support surface

Select a seat and seating system support surface that meets the individual's need for pressure redistribution with consideration to: - *7.11*	• Effects of posture and deformity on pressure distribution • Body size and configuration • Mobility and lifestyle needs

Use a pressure redistribution cushion for preventing pressure injuries in people at high risk who are seated in a chair/wheelchair for prolonged periods, particularly if the individual is unable to perform pressure relieving manoeuvres. - *7.12*

Assess the relative benefits of using an alternating pressure air cushion for supporting pressure injury healing in individuals who are seated in a chair /wheelchair for prolonged periods, particularly if the individual is unable to perform pressure relieving manoeuvre - *7.13*	Notes: • An alternating support surface requires a continuous and reliable source of electricity so is unlikely to be appropriate for use in a wheelchair • Stability and safety should be assessed

For individuals with or at risk for a pressure injury, consider using a pressure redistributing support surface during transit. - *7.15*

The 2019 International Guideline recommends the following for an at risk individual who is overweight or obese:

For individuals with obesity, select a support surface with enhanced pressure redistribution, shear reduction and microclimate features. - *7.3*

Use a bariatric pressure redistribution cushion designed for individuals with obesity on seated surfaces. - *7.14*

How do I redistribute pressure away from high risk areas?

Force, when concentrated in a small surface area, creates high peak pressures (see Figure 1). When the force is spread over a greater surface area, the peak pressure is reduced (see Figure 2). Figure 3 below shows the at risk areas of the ischial tuberosities in the seated posture.

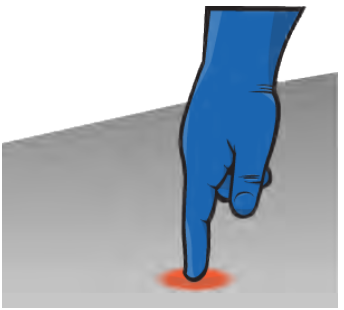


Figure 1

Figure 2

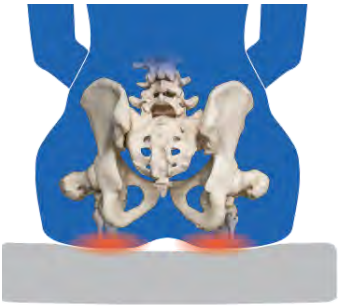


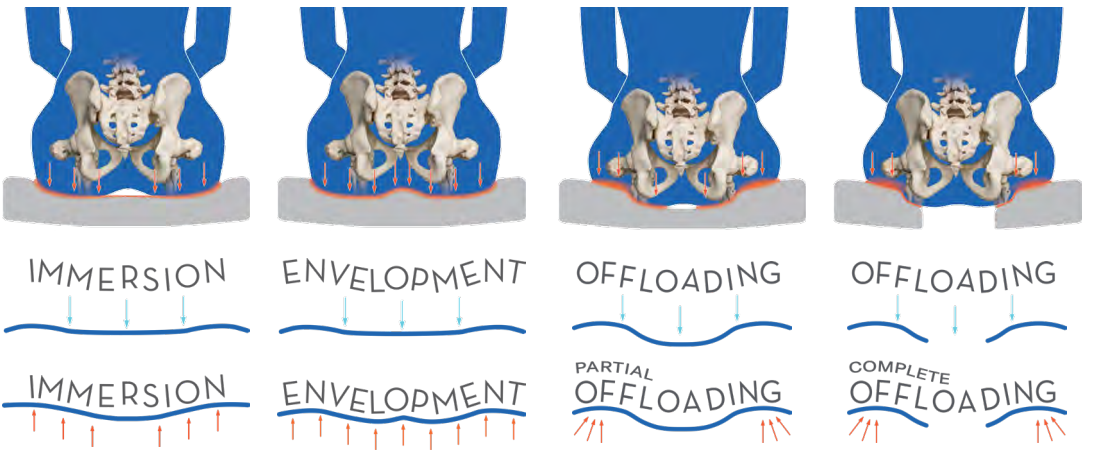
Figure 3

According to the 2019 International Guideline, when immobility is a key issue, the seat support surface should redistribute pressure away from high risk areas through the methods of pressure redistribution: immersion, envelopment and/or offloading.

The method chosen should be based on the needs of the individual.

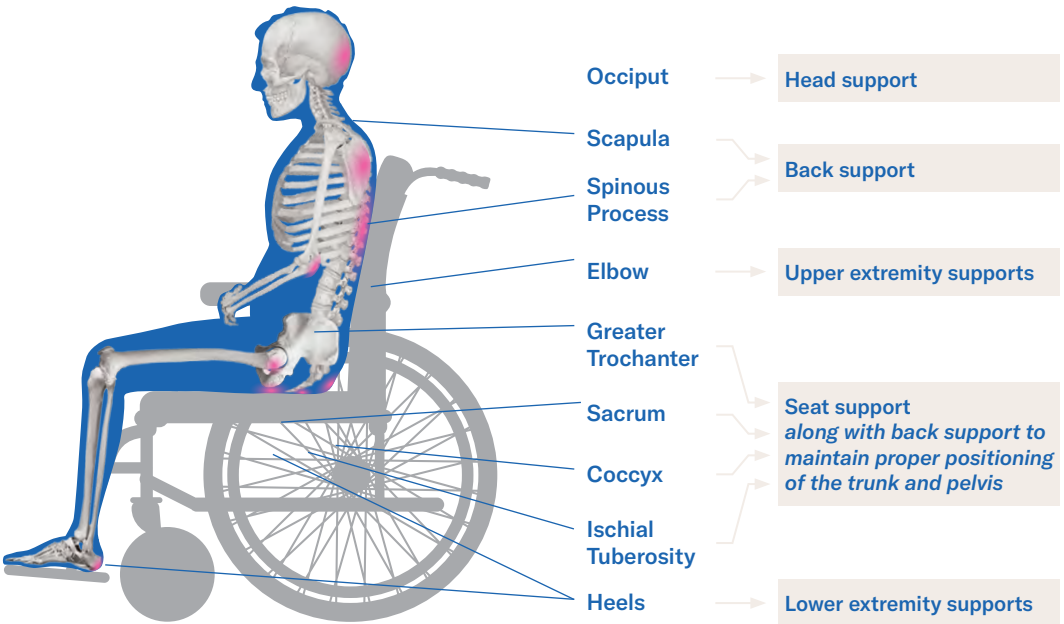
Pressure redistribution methods

Seat surfaces can immerse, envelop, or either partially or completely offload the individual, to assist in the prevention or treatment of a pressure injury.



Common areas of pressure injury development when seated in a wheelchair

A seating system is a combination of the wheelchair, cushion, back support, and any ancillary accessories required. Properly fitting components must be selected to suit the needs of the individual, or they may cause just as much damage as not having them at all.



What are the considerations with the seat support (cushion) when pressure injury prevention and treatment are the goals?

Every surface in daily use needs to be taken into consideration. For individuals who use a wheelchair, a quality cushion with tissue offloading properties, is only as good as the system it is placed in. The ideal seating system consists of:

- The wheelchair base, correctly configured to match the individual's measurements and range of motion limitations
- The back support, which positions the trunk to optimise pelvic positioning, further aiding in the prevention and treatment of a pressure injury
- The seat support (cushion) which will immerse and envelop or offload for optimal pressure redistribution and positioning
- Any needed accessories to add stability, redistribute pressure, and allow for function
- Consider other seating support surfaces that the individual would utilise throughout the day such as, a shower commode, car seat, bed mattress and other seating surfaces

For this reason, when the need for tissue offloading has been identified, a seating referral to a specialised seating therapist is warranted.

What is the process to achieve the optimal outcome for the individual?

The steps of the process are to:

- implement a screening process to identify the at risk individual
- conduct a comprehensive risk assessment
- use a high specification pressure redistribution support surfaces in the seated posture
- regularly review the individual's risk and the performance of the seating support surface

The recognition, treatment, and prevention of a pressure injury is a multidisciplinary, team effort. It is important to understand your role as a health professional in this process. Roles and responsibilities vary across clinical settings and geographic locations; however, a individual-centred approach to care is a gold standard. The primary focus for everyone involved is care delivery centred around the individual and meeting their wants, needs and goals.

For more information on the multidisciplinary approach to delivering individual-centred care, please refer to the diagram on the following page.

The multidisciplinary approach to individual-centred care

The 2019 International Guideline includes some considerations for achieving individual-centred care:

- Set treatment goals with the individual - *10.2*
- Assess the individual's quality of life, knowledge and self-care skills - *22.1*
- Provide the individual with education, skills training and psychosocial support - *22.2*

Note: This is not an exhaustive list of those involved in individual-centred care. Check your local contacts and resources for other health professionals and carers to include in an individual-centred approach.

Where can I find more information about implementing pressure injury prevention and treatment in my organisation?

It is everyone's job at the organisational level to implement education and training for proper PI prevention and treatment strategies to protect every individual. The 2019 International Guideline has very clear recommendations and Permobil has comprehensive education programs to bring your facility up to speed!

The International Guideline recommends the following strategies can be used to implement an organisation-wide pressure injury prevention program:

- Maximise workforce characteristics (e.g. the type and number of staff employed) - *20.1*
- Maximise the availability and quality of equipment - *20.4*
- Provide clinical decisions support tools - *20.8*
- Develop an education program for health professionals - *21.2*

How can my organisation evaluate the implementation of pressure injury prevention and treatment?

Evaluating the organisation's performance in preventing and treating pressure injuries is an important component of continuous quality improvement. Some actions your organisation could take to evaluate its performance include:

- Developing a quality improvement plan with specific, measurable, achievable, realistic and timely (SMART) goals
- Using quality indicators to check performance against recommended best practice
- Conducting regular pressure injury prevalence and incidence surveys
- Informing all stakeholders of the continuous improvement plan, how they can be involved and the progressive achievement in reaching goals

The 2019 International Guideline includes a list of quality indicators that an organisation can use to measure its performance against best practice. The quality indicators directly related to recommendations in the guideline.

For more information please refer to Prevention and Treatment of Pressure Ulcers/ Injuries: Quick Reference Guide 2019 that can be downloaded for free from the international guideline website: http://internationalguideline.com

PAN PACIFIC
Pressure Injury Alliance

permobil