Pressure injury in spinal cord injury: consensus statement

NOVEMBER 2021

He Kaupare. He Manaaki.
He Whakaora.
prevention. care. recovery.

We are grateful to the following organisations for their endorsement of the pressure injury in spinal cord injury consensus statement:

Burwood Spinal Unit

COUNTIES MANUKAU HEALTH

Auckland Spinal Rehabilitation Unit

Contents

Acknowledgements

Thank you to those people who generously shared their lived perspectives of pressure injuries in spinal cord injury.

Te Tiriti ō Waitangi

Te Tiriti ō Waitangi (te Tiriti) is a founding document of government in Aotearoa New Zealand and established the country as a nation. We aim to support the Crown in its te Tiriti relationships and deliver services in ways that enable equitable outcomes for Māori.

The Ministry of Health's te Tiriti framework [1] provides guidance for health practitioners to demonstrate the application of te Tiriti principles in clinical practice. Applying the principles to service delivery enables Māori to express their mana, ensure they receive high-quality and culturally safe healthcare, and supports health practitioners to work effectively and respectfully with all Māori.

Across the continuum of care settings, we are committed to creating a cohesive, high-quality health service that is accessible to Māori, and all people with spinal cord injuries (SCI).

Equity

In Aotearoa New Zealand, different groups of people, including Māori and Pasifika, have different health needs.

Equity recognises the need to use more effective approaches and resources to address the different levels of access to quality health care that contribute to poor outcomes for different groups of people.

Reducing inequities in health resulting from social, cultural, economic, and geographic determinants is critical. It requires a comprehensive and collaborative approach involving strategies both within the health and disability system and across these wider sectors.

Spinal cord injury

For the purpose of this document, spinal cord injury includes where the cause was due to damage or trauma to the spinal cord (for example an injury related condition), or where the cause is non-traumatic (for example a medical related condition).

Key messages

In giving effect to Te Tiriti ō Waitangi it is important to address inequities, improve health outcomes and meet the needs and aspirations of Māori.

Equity recognises the need to use more effective approaches and resources to address the different levels of access to quality health care that contribute to poor outcomes for different groups of people.

Prevention of pressure injuries in people with SCI is critical to avoid a long-lasting negative impact on the person's health, wellbeing, and quality of life.

People with a SCI are more susceptible to developing pressure injuries than people without a SCI, and due to the nature of their injury they require expert support and treatment.

Education and support for people with SCI, their carers, and whānau is important in the prevention of pressure injuries in this population.

A range of healthcare professionals and community carers may be involved in the care of people with SCI, so it's important to ensure a common and consistent understanding of how pressure injuries should be prevented, identified, treated, and managed in Aotearoa New Zealand.

There is a wide variety of resources, tools, and advice available, both within Aotearoa New Zealand and internationally; this statement aims to identify best practice for people with SCI.

Local pathways and best practice guidelines for the prevention and management of pressure injuries exist across Aotearoa New Zealand, and should be consulted alongside the information set out in this statement.

How and why this statement was developed

This statement has been developed by a multi-disciplinary team of people with SCI living in the community, whānau carers, and healthcare professionals with subject matter knowledge (the 'Expert Panel') listed in appendix 1. It has been developed recognising that a consistent approach to pressure injuries in people with SCI across Aotearoa New Zealand is needed, and the unique characteristics of this community, which creates specific risks around pressure injuries.

The statement is part of the Accident Compensation Corporation's (ACC's) work to prevent pressure injuries in people at highest risk. ACC, the Ministry of Health and Health Quality & Safety Commission New Zealand are working together with other health and disability sector partners on national and local improvement initiatives to prevent pressure injuries.

It's not an exhaustive summary of best practice in all areas of pressure injury prevention and treatment. It should be viewed alongside resources that give a practical guide to managing pressure injuries for those with SCI, and discussed with the person with SCI.

The statement is evidence informed, and builds on evidence-based international guidelines and government reports on pressure injury prevention and management for people with SCI, including guidance developed in other countries such as Canada [2] and New South Wales, Australia [3].

The statement can be used alongside local pathways and should be read in conjunction with Guiding Principles for Pressure Injury Prevention and Management in New Zealand, a document published by ACC in May 2017.

CONSENSUS STATEMENT ENDORSED BY EXPERT PANEL: SEPTEMBER 2021

REVIEW DATE: SEPTEMBER 2026

Impact of pressure injuries

Pressure injuries (also known as 'pressure ulcers' or 'bedsores') have a significant impact on the health and wellbeing of individuals. They can cause serious secondary complications, (increased) disability, hospitalisation and in some cases even death.

Beyond the impacts on physical health, pressure injuries have potential mental health and participation impacts on the person with SCI. These impacts include employment, financial stability, and freedom of travel, along with their mental wellbeing. The person, their whānau and other dependents can be significantly impacted. Prevention and successful management of pressure injuries improves quality of life and prevents hospitalisation.

Most cases of pressure injuries are preventable – and preventing pressure injuries or their further deterioration is, and continues to be, a high priority for Aotearoa New Zealand's healthcare system.

Pressure injuries have a high risk of reoccurrence, and so early prevention can have a significant lifetime impact for an individual who might otherwise experience recurrent pressure injuries.

"When I go onto bedrest, my care plan must change, support increases. My role within the family changes from an enabler (Dad the taxi) to a dependent. My mental health deteriorates. The number of people required to be involved, organisation of appointments, the financial cost to my family, and the health tax dollar spend must increase."

BOB | C5/6 complete tetraplegic

Spinal cord injury and pressure injuries

In New Zealand, there are just over 200 new SCIs each year: an average of four every week [4]. A 2020 study found the incidence of traumatic SCI in Aotearoa New Zealand is increasing particularly in older adults, Māori and Pasifika [5].

The incidence of pressure injuries in people with SCI differs depending on ethnicity. In any year, Māori with SCI have a one in four chance of developing a pressure injury, compared to a less than one in five chance amongst other ethnicities.

A particular focus is needed to prevent and treat pressure injuries within the SCI community, as there are several factors that increase the likelihood of a pressure injury developing.

A person with SCI might not feel pain where a pressure injury is forming, and so the injury can escalate in severity within a few hours before it is noticed. They might not be able to self-examine their skin or adjust their position easily to relieve pressure. People with SCI are likely to have to rely on others to do visual examinations. However, the visual signs of a pressure injury might not show immediately, and can be harder to identify on darker skin, so by the time it can be seen it may be difficult to reduce the impact.

Pressure injuries are often treated by healthcare professionals who do not specialise in either pressure injuries or SCI, and by whānau who may have variable knowledge in early identification and treatment. The lack of specific knowledge can delay a pressure injury being managed effectively, which can have significant impact on long-term health outcomes.

Identifying a pressure injury in someone with SCI and implementing a management plan early is challenging but crucial for effective treatment with low impacts on the person's life.

"Early detection, early intervention has kept my experiences from discovery to road of recovery to a minimum, however the impact of any pressure injury on a person with SCI is much more than the medical healing."

BOB | C5/6 complete tetraplegic

Principles for preventing, identifying, treating, and managing pressure injuries in SCI

The following principles form the baseline approach to dealing with pressure injuries for people with SCI. They should be applied to all phases of care and treatment.

ADVOCACY

The person is placed at the centre, with everyone on their health care team advocating for the best care and treatment for the person as an individual.

INDIVIDUALISED APPROACH

While best practice approaches are recognised, each person is treated respectfully in the context of their specific circumstances, culture, history, previous experience with pressure injuries, needs, and needs of their whānau.

PARTNERSHIP

Prevention and treatment are done in partnership with, and with the participation of, the person, their whānau, and through a multi-disciplinary approach across healthcare providers and funders.

APPROPRIATE AND REALISTIC ADVICE

Advice is tailored for the specific circumstances of the person, with alternatives and options developed where necessary.

TIMELINESS

Risks and concerns are identified early and acted upon quickly.

CONTINUITY OF CARE

Handover points between healthcare professionals are deliberate and robust, with clear accountability assigned. This is critical in the prevention, detection, and management of pressure injuries.

"You can't do anything without the whānau. They become your hands, legs, they become your rock."

KINA | C5/6 complete tetraplegic

Working as part of a multi-disciplinary team

It's important that all members of the person's healthcare team are kept up to date, and that it's clear to them who is leading the care at that time. In some cases, the person will be taking the lead themselves.

Good practice recommendations:

- Work in partnership with the person, their whānau and carers at all times.
- Document your assessment and treatment consistently and comprehensively.
- Ensure other members of the healthcare team are kept informed of progress, risks, and issues. Referral to other specialist services may be appropriate.
- Ensure clear handover to other members of the healthcare team, and make clear to the person who is responsible for their care at all stages of the treatment.
- Keep ACC informed, as appropriate (acc.co.nz/contact).

Recommended approach to pressure injuries in SCI

The following section presents, at a high level, the consensus on best practice for preventing, treating, and managing pressure injuries in people with SCI. This consensus statement has been compiled by the Expert Panel, informed by the resources listed at the end of this document.

RISK ASSESSMENT

PREVENTION

IDENTIFICATION

TREATMENT

REMOBILISATION/ REHABILITATION

1. Risk assessment

For a person with SCI, follow these steps to assess their risk of developing a pressure injury:

a. Conduct an initial rapid pressure injury risk screening of the major risk factors as soon as possible, to identify the level of risk for the person, and document.

b. Conduct a comprehensive pressure injury risk assessment for people considered to be at high risk, documenting areas of concern. The SSKIN framework set out under the Prevention section below could be used to guide the assessment, and tools such as Waterlow, Braden Scale or PURPOSE T could be used.

c. Develop and implement a risk-based prevention plan, individualised for the person.

d. Repeat the assessment regularly, at a minimum of every six months or more frequently depending on the circumstances and level of risk for the person. Adjust the prevention plan as necessary.

e. If the person or their whānau raise a concern relating to pressure, then it is important to conduct a risk assessment to address these concerns. This risk assessment can help to determine if any further changes need to be implemented or if the current interventions are adequate.

f. Consider the person's age and the years living with SCI. As people age, there is a reduction in muscle mass and skin firmness. This results in less padding between bones and other surfaces. For people with SCI, some of these changes occur early after SCI, regardless of age, and continue as the person lives with SCI, putting them at higher risk of pressure injury. This occurs due to loss of muscle bulk, absence or reduction in sensation, changes to posture and reduced mobility.

g. Consider a new risk assessment when there are changes in personal circumstances and living arrangements. For example, changes to the safe moving and handling plan, or a change in health and wellbeing.

2. Prevention

a Ensure the person, their carers and whānau know what to look out for:

i Provide information/education on pressure injuries and discuss with the person how they can be supported to self-manage their risk of pressure injuries.

ii Ensure carers are adequately trained and understand tell-tale signs of early pressure injury formation.

b Develop a plan with the person, their carers and whānau for implementation, to manage risk. Use the SSKIN framework to ensure all aspects are covered:

i **Support surface.** Use, in a timely manner, support surfaces and equipment that reduce the risk of pressure injuries and suit individual needs; minimise the risk of pressure injuries developing due to equipment; ensure that equipment is regularly checked for positioning, particularly after a person is repositioned.

ii **Skin assessment.** Undertake routine visual checks of all areas of the skin without normal sensation at least twice a day, and at any other time there is concern; undertake an appropriate skin hygiene regime.

iii **Keep moving.** Implement a repositioning and mobilisation regime.

iv **Incontinence and moisture.** Implement an effective bowel and bladder management regime; use clothing and dressings that minimise the risk of pressure injuries.

v **Nutrition.** Plan a healthy diet including fluids and oral care; consider a high protein diet and vitamins; refer to a dietitian for assessment if necessary.

If necessary, refer to an appropriate healthcare professional to address any of the issues above.

"Whenever I know something [a pressure injury] is starting, I get right off it and stay off it. I never want to spend that amount of time on bed rest again. I'd rather a day or two, or even a week, than spending months on bedrest missing out on the world."

JOSH | C6 incomplete tetraplegic

3. Identification

Even though individuals, their whānau, carers and healthcare professionals take all possible preventative actions to reduce the risk of a pressure injury developing, injuries can still occur. This is particularly the case with SCI due to the nature of the condition.

It's important that the pressure injury severity is appropriately identified using the recognised stages of injury. This supports effective and accurate treatment of the injury, as well as discussion with the person, their whānau and carers. The international National Pressure Ulcer Advisory Panel (NPUAP)/European Pressure Ulcer Advisory Panel (EPUAP) pressure injury classification system (2009)[6] is the recommended system for classifying pressure injuries, though this can be challenging in people with SCI as pain – a key determining factor – can be absent. Resources to assist pressure injury classification in different skin tones have been developed by the Pan Pacific Pressure Injury Alliance (2020)[7]. Frequent assessment and early identification of pressure injuries is vital.

Identification should include a comprehensive skin and tissue assessment, including:

a. Differentiation of blanchable from non-blanchable erythema,

b. Assessment of the temperature of skin and soft tissue,

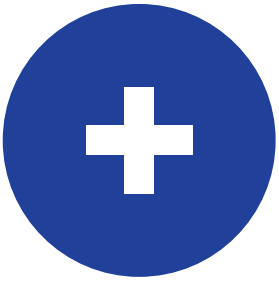
c. Assessment of oedema, usually visually, by measurement, and palpation. If available use a sub-epidermal moisture (SEM) scanner (for example where skin colour makes visual identification difficult), and

d. Assessment of the consistency of the tissue, for example if it is indurated.

"I now realise how important it is to stay vigilant about my what my skin is doing, that way I'll never have to miss out on the important things in my life like birthdays, weddings and school events. Missing out on important moments because of something that is potentially avoidable was the hardest part."

JOSH | C6 incomplete tetraplegic

4. Treatment



If a person with SCI has developed a pressure injury, it's vital that it's treated appropriately and quickly, and by a specialist where necessary. If pressure is not relieved, a pressure injury can progress in severity from one stage to the next within a few hours. The person's general practitioner (GP) should be contacted in the first instance. If the pressure injury is severe, and the GP is unable to assess the injury, either at the GP practice or by making a home visit, they should refer to an appropriately skilled, community-based health professional. Further referral to specialist care may be needed, at which time the appropriate Spinal Unit Outpatient Service should be notified. If hospitalisation occurs, ensure specialist, fit for purpose, pressure relieving equipment is available.

Contact your Spinal Unit Outpatient Service if you need support and refer to the SSKIN framework set out under the Prevention section above.

Treatment to consider:

a. Assess the wound to determine the stage of the pressure injury, clearly documenting the basis for your assessment – for example, through a photograph or transparency tracing.

b. Undertake immediate treatment, seeking specialist input if the course of action is not clear. Treatment falls into two categories:

    i. Non-operative local wound care, such as topical application of solutions, ointments, creams and dressings, or local methods of debridement, or negative pressure wound therapy.

    ii. Surgery, such as sharp debridement (may be followed by negative pressure wound therapy), direct wound closure, skin grafts, and reconstructive flaps.

c. Assess the person's need for extra support, for example a carer, additional support time, and equipment. In some cases, the home environment may not provide enough support and alternative levels of care such as in a care home or hospital should be considered on a temporary basis. The Spinal Unit should be notified if the person is admitted for acute care. Discuss the altered level of care with the funder if support is in place; if not, the person's GP can refer for additional support.

d. Assess the person's bowel and bladder management regime, and discuss changes, if necessary, to avoid incontinence and contamination of the wound.

e. Plan to enable complete off-loading of pressure/shearing to the wound. This may require a bed-based routine.

f. Assess the person's nutritional status and refer for dietitian assessment as required.

g. Monitor, measure, manage, and reassess the injury weekly to ensure it is healing. If there is evidence that the pressure injury is progressing to a more severe stage, discuss with the person, adjust the treatment plan immediately, and refer as necessary. Inform their GP, ACC and the Spinal Unit Outpatient Service in your region as appropriate. Early referral is important. If complete healing has not been achieved within one month, contact the Spinal Unit Outpatient Service in your region.

5. Remobilisation/rehabilitation

a Develop a comprehensive plan for rehabilitation after a period of bedrest, such as a progressive seating protocol for when the wound is healed, and to address any other issues relating to the SCI. Contact the Spinal Unit Outpatient Service in your region for further guidance/advice on the management of the person's rehabilitation during and post healing of pressure injury.

b Newly healed wound tissue is vulnerable to pressure injury reoccurrence. A planned remobilisation/rehabilitation programme, created with input from the multi-disciplinary team, is necessary to assist with reducing this risk. This could be accessed within the community, or in some cases the person may benefit from referral for admission to a Spinal Unit after the pressure injury has healed, for remobilisation/rehabilitation.

c Return to the guidance on risk assessment, prevention, and identification (see above), as these are required life-long for people with SCI to reduce the risk of developing debilitating or life-threatening pressure injuries throughout their life.

d Long-term management is critical, as skin integrity changes not only after a pressure injury has occurred, but with ageing and other lifestyle factors also. Increased vigilance is necessary, with frequent assessments and consideration of new technology and equipment that may help to prevent further pressure injuries. Any change of circumstances, for example a new pressure injury, requires a complete reassessment.

"From a client perspective, any pressure area is a life changing event. Over the 35 years I have been in a wheelchair, with continuous careful skin monitoring, I have experienced multiple pressure injuries. These ranged from hours, to weeks for recovery. Causes have been tight shoes, sitting on an aeroplane's seatbelt, mattress malfunction, hospitalisation in non-spinal ward, knees jammed under a table, body change scoliosis causing pressure points on wheelchair, small skin tear under pressure [which means] that it does not heal."

BOB | C6 incomplete tetraplegic

Glossary

Blanchable erythema: An area of reddened skin that temporarily turns white or pale when light pressure is applied to the skin and reddens when pressure is relieved. Over a pressure site, this is due to a normal hyperemic response.

Debridement: The removal of devitalized (non-viable) tissue from or adjacent to a wound. The process effaces the wound bed of exudates, detaches bacterial colonies, and allows a stimulatory environment to be established.[8]

Erythema: Redness of the skin due to dilation of blood vessels.[8]

Induration: Firm texture in the absence of calcification or bone formation.[8]

Negative pressure wound therapy: A wound treatment modality that promotes healing through the removal of third space oedema, thus enhancing nutrient and oxygen delivery; removal of wound exudates, which is the medium for bacterial colonisation; promotion of granulation tissue; promotion of angiogenesis; and removal of wound inhibitory factors.[8]

Non-blanchable erythema: Skin redness that persists following the application of pressure, usually over a bony prominence. This is a sign of a Category/Stage I pressure injury. Darkly pigmented skin may not have visible blanching.

Oedema: Swelling caused by excess fluid collecting in the cavities or tissues of the body.

Shear (shear stress): The force per unit area exerted parallel to the perpendicular plane of interest.[8]

Spinal Unit Outpatient Service: Services based in Auckland and Christchurch that support people across Aotearoa New Zealand who are affected by spinal cord impairment.

Auckland Spinal Rehabilitation Unit (Tel: 09 270 9000; https://www.countiesmanukau.health.nz/our-services/a-z/auckland-spinal-rehabilitation-unit/) provides support for those in the upper half of the North Island.

Burwood Spinal Unit (Tel: 03 383 6850; www.cdhb.health.nz/bsu) supports people with SCI who live throughout the South Island and the lower half of the North Island (Taranaki to Hawkes Bay and below).

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Appendix 1
Membership of the Expert Panel

This statement was developed by a multi-disciplinary team of people with SCI living in the community, whānau carers, and healthcare professionals with subject matter knowledge (the 'Expert Panel') whose expertise and lived experience made them valuable contributors. The draft statement was peer reviewed by consumers, advocacy organisations, healthcare professionals and professional bodies. The work was facilitated by ACC.

The Expert Panel members and their respective organisations were:

NAME	ORGANISATION
Bob Symon	Consumer representative
Denise Hislop	Auckland Spinal Rehabilitation Unit, Counties Manukau District Health Board
Gary Duncan	Royal Australasian College of Surgeons
Jo Nunnerley	Burwood Academy / University of Otago
Kate Gray	Hutt Valley District Health Board
Lee Taniwha	Consumer representative
Lindsey Cockcroft	Burwood Spinal Unit, Canterbury District Health Board
Pam Mitchell (to Nov 2020) Anj Dickson (from Feb 2021)	New Zealand Wound Care Society
Pania Tulia	Whānau carer
Dr Peter Vincent	Royal New Zealand College of General Practitioners
Prudence Lennox	IDEA Services, IHC Group
Raj Singhal	Canterbury District Health Board

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