Preventing Pressure Injuries
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Produced by the Department of Occupational Therapy in conjunction with Nursing, Diet Therapy, Podiatry and Physiotherapy at Sir Charles Gairdner Hospital

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Introduction

You have been given this booklet because you have had a pressure injury in the past or because you have been identified as having an increased risk of developing a pressure injury. This booklet will tell you more about pressure injuries:

- what they are
- how pressure injuries start
- how to recognise the warning signs, and
- what you can do to aid the healing process.

What is a pressure injury?

A pressure injury is an injury to the skin resulting from pressure, shear and/or friction. They often look to be minor (e.g. redness in the skin) to begin with, but can hide more damage under the skin surface. They are also often associated with bony parts of the body, but can be found almost anywhere that pressure has been applied for a period of time. These are sometimes known as pressure ulcers or bed sores. People with an increased risk of developing a pressure injury, might have any of the following: altered sensation, skin that is frequently moist (perspiration or urine), limited physical activity and/or inadequate food intake.
Why are they important?

Pressure injuries can happen quickly, so it is important to heed warning signs and act quickly to prevent them. A pressure injury can spread deep into muscle. They can be painful, and can result in infection. It is important to prevent pressure injuries as they can affect your health and slow your recovery.

Stages of pressure injuries

Pressure injury staging is used by medical and nursing staff to describe the depth of damage to your skin and tissue underneath. Staff will explain to you the amount of damage so you are aware. Please do not hesitate to ask us any questions.

Where are they found on the body?

Pressure injuries can form on any area of the body. They are usually found where bones are close to the skin and where the skin presses against a firm surface, such as a chair or mattress.
Locations of pressure injuries vary with posture or position

When sitting:
The coccyx (tailbone), ischial tuberosities (sit bones), on the backs of heels, and on the elbows.

When lying on your back:
The back of the head, shoulder blades, elbows, coccyx, and on the heels.

When lying on your side:
The ear, the side of the shoulder, pelvis, hip, and malleolus (sharp bones at the side of your ankles).
What increases risk of pressure injuries?

Blood vessels supply oxygen and nutrients to every part of the body, including the skin. When constant pressure is applied to a small area of our body, the blood supply to the area is reduced. Although unrelieved pressure is the main cause of pressure injuries, a combination of other factors such as friction (from rubbing, dragging) and shear (sliding down the bed), poor nutrition, limited movement, constantly moist skin, and changes in sensation can contribute to skin damage leading to a pressure injury. Causes include:

**Pressure**

Blood vessels supply oxygen and nutrients to every part of the body, including the skin. The diagram below shows constant pressure in one area and how blood and nutrients are less able to reach the compressed muscle and skin in this area.
Friction and shear

Although unrelieved pressure is the main cause of pressure injury, other factors such as friction (rubbing, dragging) and shear (sliding down the bed) where the blood vessels in the skin are stretched or distorted can speed up the formation of a pressure injury.

- Make sure you are lifted correctly when changing position.
- Wear long sleeved clothing and ensure appropriate footwear when transferring or walking.
- Use a slide-sheet or slippery clothing (eg satin-like) between you and the surface of the bed or chair to help reduce friction.
- Avoid sitting on creases in sheets or clothes, and avoid leaning against zippers, buttons, wallets, keys, phones etc. Avoid clothing with thick seams eg jeans
- Massaging or rubbing your skin can also stretch and distort the blood vessels under the skin. We do not recommend this. Please ask your nurse if you have any queries.
If you find yourself sliding forward when seated, talk to a physiotherapist and an occupational therapist (OT) who can suggest ways to help you stay sitting upright.

### Limited movement

When you are unwell, or less mobile, it can be difficult to change position or to move around by yourself. It is important to keep active, as exercising increases blood flow to the skin, muscles and joints. A physiotherapist can advise you on exercises you can do.

- When you are sitting down, lean forward to move the pressure from your bottom (sit bones) for 15 seconds. Do this every 15 minutes.

- Can’t do that? Then using the armrests of the chair, lean to one side for 15 seconds and then the other. This will lift one buttock off the seat at a time. You might need your carer to assist you.

- Have a period of rest during the day where you lie down to take the pressure off your bottom.
Loss of bladder and/or bowel control

When moisture and other substances sit on your skin for a period of time, it gives bacteria a place to grow. When bacteria sits on the skin for any length of time, it can irritate and further damage the skin.

- Use a moisturising lotion if your skin is dry, and protect your skin from dry or cold air.
- Try and keep your skin clean and dry at all times. Check your continence appliance.
- If you have problems with your bowel or bladder, clean your skin as soon as it is soiled. If you need more information about how to manage incontinence, please ask to speak to the Continence Nurse.
- Bathe or shower in warm (not hot) water using a mild cleanser. Dry your skin gently to prevent further damage to the skin.
Sensory changes

Some medical conditions can change your perception of pain or discomfort. With altered sensation, it is easy to miss the warning signs alerting you to the need to move or roll over so that you take the pressure off a particular area of your body.

- If you are unable to feel pressure, it is important that you check your skin twice a day. Use a hand mirror, or ask your carer for assistance if you have difficulty doing this.
- Change your position.

Signs to look for (especially skin over bony areas):
- Red/purple/blue skin
- Hardness
- Warmth
- Dryness
- Shiny patches
- Blisters
- Swelling

If the redness is still there after 30 to 45 minutes, try not to sit or lie down on the area for 24 hours. The best treatment for a pressure injury is the removal of all pressure from that location until it heals. Remember that the best solution to pressure issues is prevention.
Nutrition

Eating a healthy diet is important in preventing pressure injuries. However if you already have a wound or pressure injury, then nutrition becomes even more important. Good nutrition plays a vital role in wound healing by working from the inside out.

Below are some of the key nutrients important in healing and what foods contain them;

- **Protein:** Your need for protein can double if you have a pressure injury. Lean meats, poultry, eggs and milk and milk products are good sources of protein which help your skin to heal

- **Good oils:** Oily fish like tuna, sardines or salmon contain omega 3 oils, which are healthy oils that may reduce inflammation and provide energy to help wound healing. Other healthy oils are found in nuts, seeds and olive oil

- **Vitamins:** Vitamins C and E are important in wound healing so include fruits, vegetables, wholegrain breads and cereals in your diet

- **Diabetes:** If you have diabetes aim to keep your blood sugar levels within the range recommended by your doctor, which will contribute to better health and wound healing.

Know when to get help. If you have a poor appetite, are not eating well or you lose weight without trying; you are at risk of malnutrition, pressure injuries and delayed wound healing. If you are experiencing these problems, or if you already have a wound that is not healing as it should, then you may benefit from talking to a dietitian to help you improve your diet.

If this applies to you ask your doctor to refer you to a dietitian.
Smoking

Smoking damages blood vessels and affects overall skin health. It is advisable to stop smoking. Apart from long term damage, each puff on a cigarette/cigar/etc, causes an additional response in the blood vessels (constricts blood vessels).

Skin changes

Skin grows thinner and less elastic with advancing age. The layer of tissue and fat under the skin also reduces in thickness. This means that blood circulation is less protected, and as a result, it is easier to damage your skin. Some medical conditions like arterio-sclerosis, diabetes, anaemia, oedema (swelling) etc, result in poor blood circulation and increase the risk of pressure injuries forming in areas such as the feet and heels. When blood circulation is poor, wounds can take longer to heal.

Previous pressure ulcers

After a pressure injury heals, the new skin does not have the same strength as the original. The new skin is only 80% as strong as it was.
Footcare

Good footcare is important, particularly if you have a loss of sensation or changes in your blood supply to your feet eg. Diabetes, smoking, arterial disease, hemiplegia.

We suggest that you

- Wash your feet daily with mild soap, in luke-warm water and dry carefully between the toes.
- Examine your feet daily
- Ensure appropriate nail care
- Check toenails are not too long and have no sharp edges.
- Shoes should never be broken in, they should fit properly from the start. Buy shoes in the afternoon when feet are most swollen.
- Check the inside of your shoes before wearing.
- Use socks or stockings with a high natural fibre content (cotton or wool) to absorb perspiration.
- See a Podiatrist if assistance is required with toenails, callouses, footwear, or general footcare.
What sitting and lying positions have the highest risk? What can I do about it?

Correct positioning is very important to reduce or off-load pressure and prevent pressure injuries. The best way to avoid pressure injuries is to change position frequently.

Sitting

The point of highest pressure when sitting on a chair is found where your ‘sit bones’ are. Because of this, good posture is essential when sitting. General suggestions to reduce pressure when seated have been outlined below. Whenever possible, shift your position every hour for two minutes:

- Lean forwards to lift your buttocks off the cushion. Alternatively, move from side to side, lifting one buttock off the chair at a time.
- Lie down to rest during the day – this will give your bottom a break from the pressure.
Good posture in sitting

- Support your feet so that your knees are level with your hips. Never have your knees higher than your hips.

- Avoid leaning to one side for any length of time: the pressure increases on both your sit bones and your elbow. It is important to sit symmetrically in a chair.

- Avoid sitting in a slumped position:

- Sit with your bottom well back in the chair (touching the back). If you find yourself sliding forward in your chair, ask to see your OT who can suggest some alternatives to keep you in an upright position.
Check the seat surface

- Never use a ring cushion, or donut cushion, to relieve pressure.
- If you sit on the commode chair for longer than 20 minutes, make sure you lean forward every 15 minutes to relieve the pressure from your bottom.
- Lean forward while seated if you have a sore area.
- Be careful about pressure on your elbows when leaning against or on armrests.
- If you spend most of your time sitting in a wheelchair, your occupational therapist (OT) will give you a cushion for your comfort.
- Make sure that you have the cushion the correct way on the seat.

Lying

Turn regularly: every two hours, if possible. If there are problems with managing to do this, ask about possible alternatives. Remember to check your heels regularly.
• **Do not** lie on your pressure injury.

• For pressure care, when you lie down, your headrest and foot section of the bed should be level. Your body should be supported with pillows. This will remove pressure from your tailbone and your hips and put the pressure on a more fleshy part of your bottom.

• Keep the pressure off your lower leg by putting a pillow in between your knees and ankles. This can be better achieved if you bend your knees a little.

• It is important to sit up while eating to prevent choking. However, only sit up in this position for half an hour.

• Raising the head of the bed more than 30° causes you to slide down in bed, which can damage your skin (friction and shear).

• If you have been told to raise the head of your bed for medical reasons, see your OT for alternatives.

• Sheepskin does not reduce or remove pressure. It can help reduce the effect of shear, but you need to be certain that shear is the cause of the skin breakdown before using it as an alternative.
Pressure care cushions

Your OT may be able to give you a special cushion to relieve or reduce the pressure on certain bony areas. This cushion is only an aid to reduce the risk of getting a pressure injury and does NOT prevent pressure injuries. It is important to use your cushion together with other preventative measures. Although a ring or donut cushion off-loads the pressure directly over the sore area, it creates higher pressure in the areas where the cushion actually contacts the skin. Therefore, we do not recommend these cushions. If you have other specific equipment needs you can discuss this with your OT and nurse.
Care for Your cushion

Cushions supplied by the OT department must be used correctly to reduce or off-load pressure from at risk areas. In addition to the handout given to you by your OT, some suggestions for caring for your cushion include:

- Protect the cushion from moisture and direct sunlight.
- These cushions come with a suitable cover. It is recommended that plastic, sheepskins, sheets, pillowslips, or other cushion covers are not placed on top of the cushion cover, as these do not help reduce pressure.

Contact the OT department if you have any further questions about your cushion.

Do not delay in seeking help if you think you have a problem. If problems are dealt with in their early stages, more serious conditions can be prevented from developing.
Should you have any queries, please contact any of the following staff members

Wound Management team
Tel: 9346 3266

Continence Clinical Nurse Practitioner
Tel: 9346 3333 page 4723

Occupational Therapy Department
Tel: 9346 2855

Podiatry Department
Tel: 9346 3373

Nutrition and Diet Therapy
Tel: 9346 2850

Physiotherapy Department
Tel: 9346 2337

This information brochure has been collated from various resources. A full reference list of these resources can be obtained from the Occupational Therapy Department at Sir Charles Gairdner Hospital.

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