

Information sheet No.5

Rehabilitation Technology Unit RPH Shenton Park Campus



Pressure Management & the Prevention of Decubitus Ulcers.

WHAT IS A PRESSURE SORE ?

When load occurs between the body and a surface such as a seat, a seat back or a mattress, **pressure** is developed and this in turn develops **stresses in the tissue**. The pressure increases with the load sustained (eg. due to body weight) and as the area required to carry the load decreases. Where pressure is sustained by tissue over a **bony prominence** the stress in the tissue tends to be concentrated deep in the tissue near the bone. This concentrated stress can **restrict blood supply to the tissue** causing cell damage and can prevent the normal drainage of toxic products from the tissue. This combination of tissue destruction and toxicity can form a focus of **ulceration deep in the tissue** which, if not recognised early and treated, can rapidly progress to break through to the skin as the pressure sore.

Where the tissues must also sustain the relative movement between the bone and a seating surface that occurs during pushing a wheelchair for example, the tissues must also sustain **shear stresses** which further increase the risk of trauma.

THE REAL COST OF PRESSURE SORES.

The costs associated with the treatment of pressure sores each year runs to hundreds of thousands of dollars. A single day in hospital can cost more than \$600, plus the cost of the specialised medical, surgical, nursing and laboratory facilities needed. Individuals requiring hospital treatment for a pressure sore are often in hospital for weeks, even months.

Effects on the quality of an individual's life, social costs (isolation, lack of participation in normal family activities) and economic costs (loss of or reduced income) to the individual are also significant factors that should not be discounted.



WHO IS AT RISK ?

When a person has normal sensation, pressure is recognised as discomfort and pain. The natural reaction is to relieve the load causing the pressure. Where a person has a sensory deficit, the normal warning signals are absent or reduced and the problem may be further complicated if ability to relieve the pressure is limited by physical disability. These are the primary risk factors, prevalent in a number of disabling conditions, but notably those resulting from spinal injury.

Other factors such as diabetes, cardio-vascular health, nutrition, muscle tone, prior injury to the tissue (for example, from a previous pressure sore), sweating, body weight, etc. affect overall risk. All these factors must be taken into account when determining a method to assist the patient to prevent tissue trauma.

HOW ARE PRESSURE SORES PREVENTED ?

Where possible, the person at risk should develop routines for pressure relief and for regular skin inspection and hygiene. Early recognition of the problem is essential for prevention. The technology provided by the Rehabilitation Engineering Clinic can assist to reduce the primary risk factors.

THE AIMS AND OBJECTIVES OF THE PRESSURE MANAGEMENT PROGRAMME

The Pressure Management program provides the wheelchair user access to a range of options for managing the pressures exerted on the skin of the buttocks when seated, whilst taking into account factors of health, friction, shear, and moisture.

Solutions to reduce the risk of the development of pressure problems resulting from a disability will vary according to the sitting pressures, skin condition, medical and surgical history, activity level and motivation of the individual client.

The goal of the Pressure Management program at the Rehabilitation Engineering Clinic is to provide an effective seating cushion which redistributes pressure away from areas of susceptibility.

The Pressure Management program offered by the Rehabilitation Engineering Clinic (REC) at Shenton Park comprises :

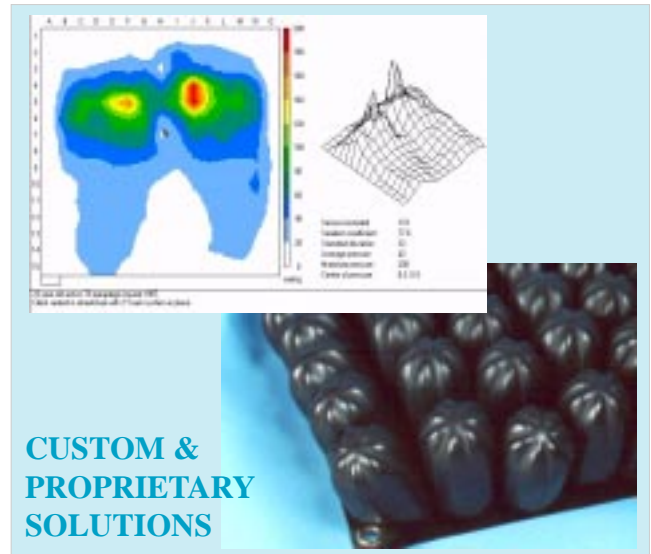
- .. *assessment - by nursing, technical and therapist staff*
- .. *manufacture - by experienced technical staff*
- .. *measurement and testing - to ensure supplied item meets proscribed pressure limits*
- .. *trial - by the client and carers and*
- .. *review - at least yearly recall of the client to the Clinic for checking of the pressures and competency of the item supplied and to demonstrate to the client and carers the positive effect, ie: reduced pressure readings*

A range of commercially available and custom made seating cushions are used to achieve this. Some seating cushions can also be useful in providing postural control where this is influencing the pressure distribution (see also Information Sheet 3).

Adjustment of the wheelchair may also be made to achieve a satisfactory pressure distribution.

Assessment for and provision of **mattress overlays and seating for other chairs** or seats can be provided to ensure that seating pressures are managed in all situations of pressure sore risk.

Education of the client in skin care and methods of relieving their weight when sitting are used to complement the cushion provided. Care and effective use of the cushion is also discussed and demonstrated with each client and their carers.



Consultation between the Rehabilitation Engineering Clinic; medical, nursing and allied health staff; community nurses; carers and clients is utilised in providing the service.

The Pressure Management program is provided to all patients referred to the Clinic for provision of wheelchairs and postural seating, as well as those referred for pressure management. Once referred to the Rehabilitation Engineering Clinic for pressure management, the assessment and review process can continue while the client remains resident in Western Australia.

Clients are encouraged to contact the Rehabilitation Engineering Clinic whenever skin redness first occurs so that cushions can be modified as needed and as soon as possible. The aim of the education process is to motivate the clients to take responsibility for their own skin care.

A Pressure Management program that effectively reduces the risk of pressure sore development reduces economic and social burdens on the client and hospital system. The comprehensive pressure history that is developed and regular review of the client become invaluable tools for those involved in the client's long term management.

for further information, you are welcome to contact;

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