

### 1.1 STATEMENT OF PURPOSE

The purpose of this guideline is to assist physiotherapists when applying and removing plasters/casts.

### 1.2 SCOPE

This guideline applies to any person practising physiotherapy in NSW.

### 1.3 INTRODUCTION

The material contained herein is to serve as a guide to physiotherapists. All physiotherapists should recognise that a duty of care is owed to patients regarding the application, modification and removal of plasters/casts. There are associated risks and it is important that a risk minimisation approach is used. Therefore it is important that the overall principles of informing the patient, outlining risks and obtaining informed consent are adhered to.

## 2. PROCEDURE

### 2.1 Application of casts

Physiotherapists should have appropriate training in the application of a cast before doing so. The type of cast and the material used must be suitable for the patient's condition and appropriate padding used (i.e. type and amount). Padding is an important consideration for patient comfort and cast stability.

All due care should be taken and an explanation of the cast application should be given to the patient to facilitate his/her consent.

Instructions must be given to the patient regarding care of the cast and their limb. These instructions include advice on appropriate action should the patient experience problems such as an increase in swelling; or a change in temperature or sensation. Patients should be instructed to seek help if they feel there is a problem with the cast, and appropriate contact details need to be provided to the patient. It is good practice to provide the patient with a leaflet or card outlining this information.

### 2.2 Modification of casts

During the time the cast is being used by the patient the physiotherapist may modify the cast. These modifications may be to add strength or function to the cast, to change the function of the cast, or to improve the safety of the cast. When making modifications, consideration should be made regarding:

- The safety of making the changes
- Whether there are alternatives to making the modification, such as complete removal and reapplication
- That there has been informed consent regarding the modification
- That there be documentation regarding the modification
- That the patient has been educated regarding the changed function/use.

### 2.3 Removal of casts

There are several tools which may be used in cast removal including bandage scissors, plaster shears, spreaders and cast saws. All have potential hazards, which include discomfort for the patient, pinching or damaging the skin. Cast saws are now the main implements used in cast removal for their speed and patient comfort. The saw blade vibrates and does not spin like a conventional saw, however it is serrated on its edge and for this reason can damage the skin even when all due care is taken. Preparation for cast removal must include risk assessment.

## **GUIDELINES FOR THE APPLICATION, MODIFICATION AND REMOVAL OF PLASTERS/CASTS**

There should be appropriate preparation prior to the removal of the cast. The risks should be assessed before the cast is removed, and after removal, the part should be appropriately inspected and findings documented.

### **2.3.1 Preparation**

Equipment:

- ❑ Understand how the equipment works and when to use each piece of equipment ie scissors, shears, spreaders and cast saw.
- ❑ Know of the correct care of the equipment. In particular: the cast saw blades or other instruments must not be contaminated from a soiled cast; the serrations can wear down with use, or can be dulled by fibreglass resin causing the blade to heat more than usual.
- ❑ When cleaning equipment be aware of and comply with local Occupational Health & Safety requirements and Infection Control Guidelines, the Physiotherapists Amendment (Infection Control) Regulation 2004 under the Physiotherapists Act 2001.
- ❑ Ensure regular servicing of the equipment for example, scissors should be sharp. Considerations with cast saws also include vacuum maintenance, cord condition, noise level of saw, blade type and condition.

Technique:

- ❑ Seek and understand correct instruction in equipment use.
- ❑ Keep the handle of scissors and shears parallel to the limb when possible to prevent the point of the tools digging in to the patient's skin.
- ❑ Rotate the saw blade as often as possible to avoid excessive heating of the blade.
- ❑ Do not run the saw blade along the cast, a down and up action should be employed.
- ❑ Have a secure hold on the tools to maximise control.

Practise:

- ❑ Use tools and the cast saw on already removed casts or on practice casts with colleagues before removing a cast on a patient.
- ❑ Slip rulers or plastic zip sticks can be used between the cast and the patient to prevent the saw touching the patient. However, these can be uncomfortable for the patient and can abrade the skin when inserted. Therapists should not be using "zip sticks" or bulky/dense padding under casts to compensate for poor techniques when using the cast saw.

Advice:

- ❑ Give specific advice to the patient in the event of any complications.
- ❑ Advise patient of what to expect whilst the cast is being removed.
- ❑ Explain use of equipment to the patient, e.g. heat, noise, vibration or generally disconcerting.
- ❑ Demonstrate equipment to the patient.
- ❑ Warn the patient the saw blade may get hot; that the saw/plaster shears can damage the skin, and the scissors and shears can press into the skin.
- ❑ Reassure the patient.
- ❑ Ask the patient to let you know if the saw blade gets hot or they feel discomfort with any of the equipment used.
- ❑ Advise the patient to keep still, as jumping into the saw cast may cause skin damage. Seek appropriate assistance to ensure the cast can be removed safely.
- ❑ Gain the patient's co-operation where possible.

### **2.3.2 Assessment of cast risks**

- ❑ The cast should be examined before removal and extra care taken if you have not applied the cast yourself
- ❑ Establish the type of cast material
  - plaster
  - fibreglass
  - polypropylene
  - polyester
  - a combination of the above

# GUIDELINES FOR THE APPLICATION, MODIFICATION AND REMOVAL OF PLASTERS/CASTS

- Assess the nature and extent of cast padding
- Note thickness of the cast
- Check condition of the cast: is it delaminated, wet, contaminated?
- Assess size of the cast – removal of a large or thicker cast will cause the blade to heat more especially when made of synthetic material
- Plan where to univalve or bivalve the cast to avoid bony prominences and minimise the number of passes required with the saw

## 2.3.3 Assessment of patient risks

- Age and cognition of patient
- Cooperation level
- Level of consciousness e.g. in operating theatre circumstances
- Understanding of explanation/instructions
- Consent/implied consent
- Skin condition, skin type and any wounds, sutures beneath cast
- Location of cast
- Positioning of patient

## 2.3.4 Removal of the cast

- Position patient in consideration of patient and physiotherapist comfort and safety
- Use gloves
- Use saw with vacuum for synthetic cast removal or a mask if vacuum not available (mask for patient optional)
- The use of earmuffs or earplugs for therapist and patient should comply with local occupational health and safety requirements. The noise of the individual saw and personal preference should be considered

## 2.3.5 After cast is removed

- Inspect the skin
- Give advice re washing the skin, skin care, and the minimisation of the risk of sunburn following removal.
- If the skin is grazed or cut, clean and dress the affected part as required
- Examine the joints for range of motion and instruct the patient in appropriate exercises to restore their strength and range of motion
- Give advice regarding bone healing

## 2.4 Documentation

Documentation should include:

- Consent.
- A Doctor's referral and follow-up management plan
- Skin condition
- Any incident such as a cut, graze or abrasion. It is recommended that appropriate incident reporting be completed if there is a cut in the skin
- Any other abnormal/relevant finding

*Developed by the NSW Physiotherapists Registration Board and the Australian Physiotherapy Association (NSW Branch). The NSW Physiotherapists Registration Board and the Australian Physiotherapy Association (NSW Branch) gratefully acknowledges the generosity of Ms Trish Evans in the preparation of these guidelines.*