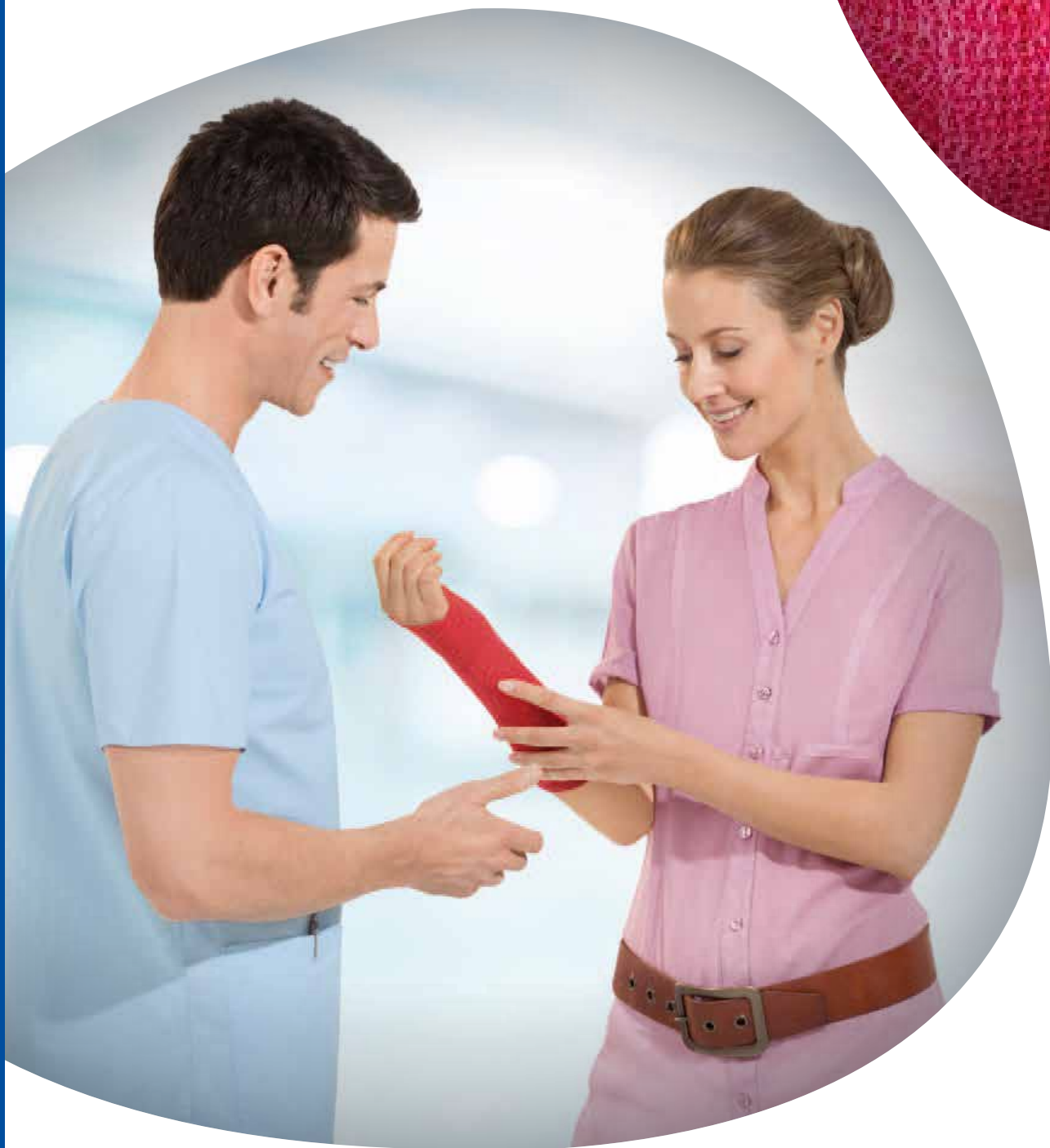


Complications of casting

factsheet



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factsheet



A good casting technique is the best way of ensuring that complications do not occur. Remember that prevention is always better than cure. All of the following complications can be prevented by:

- Good casting techniques
- Ensuring that the patient knows to return or seek help immediately with any problems

Complications after casting generally fall into the following categories:

	Circulatory and nerve impairment		Allergic reactions
	Pressure sores		Pulmonary embolism
	Stiffness		Deep vein thrombosis

	Circulatory and nerve impairment
➔ Causes:	<ul style="list-style-type: none"> • Unexpected excessive swelling • Cast being applied too tightly • Insufficient padding to allow for expected swelling • Local pressure on areas where the blood vessels or nerves are close to the skin
➔ Signs and symptoms – arterial compression:	<ul style="list-style-type: none"> • Extremities of the limb appear white, then blue and finally black. • Toe or finger nails remain white when pressed • Mobility of the digits is impaired
➔ Signs and symptoms – venous compression:	<ul style="list-style-type: none"> • Extremities of the limb appear excessively red • Pain, sometimes swelling
➔ Signs and symptoms – nerve compression:	<ul style="list-style-type: none"> • “Pins and needles” sensation • Numbness, limitation of movement, pain
➔ Treatment:	<ul style="list-style-type: none"> • Inform medical staff immediately – any delay in treatment could have dire results • Elevate the limb unless compartment syndrome is suspected • Encourage movement of the extremities and keep them warm • Split or bivalve the cast right down to show the skin (even one thread left uncut could impair the circulation) • Window the cast if there is local pressure on a nerve

	Compartment syndrome
➔ Causes:	<ul style="list-style-type: none"> • A complication of fracture and/or soft tissue injuries or surgery • Caused by an increase of pressure in the compartments created by fascial sheaths surrounding groups of muscles • This rise in pressure can reduce the blood flow to the muscles and ultimately lead to death of tissue and possibly loss of limb • Easy diagnosis is essential as a fasciotomy may need to be undertaken immediately
➔ Signs and symptoms:	<ul style="list-style-type: none"> • Increasing pain • Pain out of proportion to the injury • Pain on passive movement of the extremities • Pain that does not respond to analgesia • Pins and needles or numbness • Muscle weakness • Initially the distal pulses may be normal, but increasing weakness of the pulse is often observed and finally lack of pulse
➔ Treatment:	<ul style="list-style-type: none"> • Inform medical staff immediately – any delay in treatment could have dire results • Bivalve the cast and split to the skin • Remove the limb from the cast and examine • Elevate the limb but not above heart height • If symptoms persist a fasciotomy would be required

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Deep Vein Thrombosis (DVT)

Plaster Room staff should be aware of the symptoms of deep vein thrombosis (DVT) and pulmonary embolism, and check patients have been assessed for venous thromboembolism risk before application of a lower limb cast, as per NICE Guidelines.

→ Signs and symptoms:

- Pain in calf
- Oedema
- Sometimes redness
- Pain on palpation
- Homan's sign- pain in the calf on dorsiflexion of the foot

If DVT is suspected, Doppler ultra sound tests should be undertaken.

→ Treatment:

- Anti-coagulant therapy



Pulmonary embolism - Blood clots in the lungs

→ Signs and symptoms:

- Unexplained breathlessness / cough
- Tachycardia
- Later: chest pain and coughing up blood

→ Treatment:

- Anti-coagulant therapy
- Oxygen therapy



Stiffness of the joints

This can occur not only in the joints held in the cast, but also in those above and below the cast.

→ Prevention:

- Make sure the cast is trimmed correctly to allow full movement of the joints not held in the cast
- Make sure the patient understands to move the joints which are free from the cast
- Functional bracing can help prevent stiffness in joints within the cast

→ Treatment:

- Physiotherapy may be required both for joints within and outside of the cast



Pressure / cast sores

→ Causes:

- Uneven bandaging techniques
- Insufficient padding over bony areas
- The cast is too tight or too loose
- Foreign objects inside the cast

→ Prevention:

- Good casting techniques
- Advise the patient to change the position of the limb in order to avoid constant pressure on one area inside the cast

→ Signs and symptoms:

- Burning or blister-like pain
- Local heat
- Offensive smell
- Staining of cast
- Pyrexia in a child

→ Treatment:

- Cut a window in the cast for inspection
- Inform medical staff if skin is broken
- Prevent local oedema by replacing the window:
 - » Temporarily strap in place or replaster
 - » If neither is possible, make a new lid
- X-rays can be used to determine the site of a foreign object or the cast may be replaced
- Early treatment is essential: as the skin 'dies' from prolonged pressure, the pain may disappear and the pressure ulcer can reach down to the bone, taking months to heal and potentially requiring plastic surgery.



Allergic reactions

Occasionally allergic reactions may be caused by certain types of paddings or cast materials. If the patient has a history of skin allergies or an allergic reaction is anticipated, the patient should be warned to look out for:

- Wetness
- Discharge
- Excessive irritation under the cast

→ Treatment:

- Report the problem to the medical officer
- Remove the cast
- Cleanse the skin thoroughly
- Re-apply other materials