ASSESSMENT OF A LIMB IN A CAST

WHY ARE CASTS USED?
- To support/control movement of bone fragments following fracture.
- To stabilise and rest joints following ligament injury.
- To support and immobilise joints and limbs postoperatively.
- To correct deformities by the use of serial casts.

TYPES OF COMPLICATION
- Circulatory/nerve impairment.
- Pressure/cast sores.
- Skin laceration from rough plaster edges.
- Allergic reaction, usually caused by the inner padding of cast.

SIGNS AND SYMPTOMS
- Circulatory and nerve impairment.
- Arterial compression: pallor or cyanosis of limb extremities. Limited and painful movement of digits.
- Venous compression: excessive redness, pain and/or swelling.
- Nerve compression: ‘pins and needles’ sensation leading to numbness, limited movement and pain in limb.
- Deep vein thrombosis (DVT): calf pain, heat, swelling.

SORES/LACERATION/ALLERGY
- Laceration: broken skin, redness and pain around edges of plaster cast.
- Allergy: itching, localised burning, rash, skin blistering.

TYPES OF ASSESSMENT REQUIRED
- Colour.
- Movement.
- Sensation.
- Pain scoring.
- Swelling.
- Radial/ pedal pulse.
- Temperature: raised temperature may indicate a wound infection.
- Blood pressure and pulse: hypotension and tachycardia (plus blood staining through plaster) may indicate haemorrhage from wound.
- Wound staining/oozing through plaster postsurgery/open trauma.

MANAGEMENT CONSIDERATIONS
- Circulatory and nerve impairment.
- Elevate limb. If symptoms persist splitting the cast throughout its length bivalve (into an anterior and a posterior half) will relieve pressure by 50–85 per cent (Phillips, 1992). Prophylactic antithrombotic agent to prevent DVT. If DVT is suspected then enzyme-linked immunosorbent assay (ELISA) D-dimer test (Michiels et al, 2000).
- Pressure/cast sores: inspection window cut in plaster, caution is required as this may result in tissue herniation through the hole (Charnley, 1999). Plaster removal may be indicated.
- Laceration: trimming of plaster edges.
- Allergy: previous history of allergies should be noted; plaster removal is indicated (Davies, 2000).

FURTHER INFORMATION
- Loose cast: once swelling subsides, cast may no longer hold fracture securely and may need replacing.
- Patient empowerment: involve the patient to participate actively in his or her own care and alert staff to potential problems (Davies, 2000).

REFERENCES

WEBSITE
Great Ormond Street Hospital for Children NHS – looking after your child’s plaster cast: www.ich.ucl.ac.uk/factsheets/misc/plaster_cast

The information given serves as a general reference. Nurses should consult their individual trust policies on clinical procedures.