

## PAIN - REFERENCE GUIDE 4

### *The problem*

Pain and discomfort are more common than often appreciated after a stroke. There are a variety of pain syndromes that can affect stroke patients. Many patients will have a pre-existing cause for pain such as arthritis that can be exaggerated by reduced movement and/or poor posture after a stroke. Two types of pain specific to stroke are hemiplegic shoulder pain (affecting approximately a third of patients at 6 months after hospital discharge), and post-stroke central pain (affecting around 2% of patients). Pain may be underdiagnosed in patients with cognitive impairment and communication difficulties. However, even in the presence of severe cognitive and communication impairment, many individuals may have their pain assessed using appropriate observational scales (**Note 1** below). Headache type pain is also common although this may be more closely related to anxiety than the stroke *per se*.

**Hemiplegic Shoulder Pain** is a complex, incompletely understood pain syndrome and usually requires multi-disciplinary management to optimise outcome. Patients at higher risk for developing hemiplegic shoulder pain appear to be those with more severe upper limb paralysis. Inappropriate handling techniques by formal and informal carers may increase the likelihood of traction injury, especially when there is a flaccid shoulder. Every patient with arm weakness should be asked about shoulder pain.

*The flaccid shoulder* This is characterised by a “floppy” arm (low tone) in which the shoulder joint becomes subluxed (downward displacement of the top of the humerus relative to the scapular joint), and the subluxation causes traction damage to surrounding shoulder soft tissues and nerves.

*The spastic shoulder* This is characterised by increased tone around the shoulder with associated reduction in range of movement.

**Central Post-Stroke Pain (CPSP)** - This is characterised by an unpleasant, burning or stabbing type of pain affecting the shoulder, usually in conjunction with the arm and sometimes the whole stroke affected side. It may be associated with allodynia (pain from stimuli which are not normally painful) and / or sensory disturbance. Evidence suggests that cold temperatures often aggravate CPSP. Static magnet for

the relief of neuropathic pain have been tested in other conditions and *may* have a place in stroke (Eccles, 2005), although as yet no trials have been reported.

#### *The evidence and addressing the problem*

**The flaccid shoulder** requires particular care and handling, even in the absence of pain. The arm should be appropriately supported at all times for example with a wheelchair arm support and pillows at night. The preferred position of the arm to minimise shoulder damage is where the shoulder blade is protracted (drawn forward) and the shoulder joint in slight abduction (in front of the body) and neutral rotation (approximately level with the breast area). Further, the arm should be positioned forward, the wrist neutral or slight supination (palm up) and the fingers extended. A physiotherapist will advise on appropriate positioning of the limb and passive range of motion exercises.

**Spastic shoulder** The use of analgesics (paracetamol, dihydrocodeine, non-steroidal anti-inflammatory drugs) is of uncertain value but a carefully monitored therapeutic trial is worthwhile providing there are no contra-indications (for NSAIDs: peptic ulceration, anticoagulation therapy: renal impairment). Physiotherapy input should aim to teach accurate arm positioning and provide carer training in gentle passive elevation of the shoulder. For patients with persisting shoulder pain, techniques such as high intensity transcutaneous nerve stimulation (TENS) may be useful. There is conflicting evidence for effectiveness of functional electrical stimulation (Teasell, 2008). Injection of Botulinum toxin into spastic muscles may also be considered.

**CPSP** Analgesics are not effective. Anticonvulsants (Gabapentin or carbamazepine) or low dose tricyclic antidepressants are the preferred agents.

**Local Services** Find out contact details and referral process for local pain clinic (if available).

**Evidence:** Comprehensively reviewed in Teasell R, *et. al.*, Evidenced based review of the management of post stroke pain, July 2008

[www.ebrsr.com/uploads/Appendix - Pain.pdf](http://www.ebrsr.com/uploads/Appendix_-_Pain.pdf).

**Note 1:** Observational changes associated with pain (taken from the RCP, BGS and BPS guidelines on assessment of pain (2007))

Type	Description
Autonomic	Pallor, sweating, tachypnoea, altered breathing patterns, tachycardia, hypertension
Facial expressions	Grimacing, wincing, frowning, rapid blinking, brow raising, brow lowering, cheek raising, eyelid tightening, nose wrinkling, lip corner pulling, chin raising, lip puckering.
Body movement	Alter gait, pacing, rocking, hand wringing, repetitive movements, increased tone, guarding, bracing
Verbalisations/vocalisations	Sighing, grunting, groaning, moaning, screaming, calling out, aggressive/offensive speech
Interpersonal interactions	Aggression, withdrawal, resisting
Changes in activity patterns	Wandering, altered sleep, altered rest patterns
Mental status changes	Confusion, crying, distress, irritability

\* Individual behaviours differ so check behaviour pattern with main carer

**Note 2:** some patients may have altered sensation, which impairs normal pain sensation. They therefore may not be able to tell if, for example, a fire is too hot or their fingers are catching in the spokes of the wheelchair.

#### **Assessments**

Checklist of non-verbal pain indicators: [http://prc.coh.org/PainNOA/CNPI\\_Tool.pdf](http://prc.coh.org/PainNOA/CNPI_Tool.pdf)

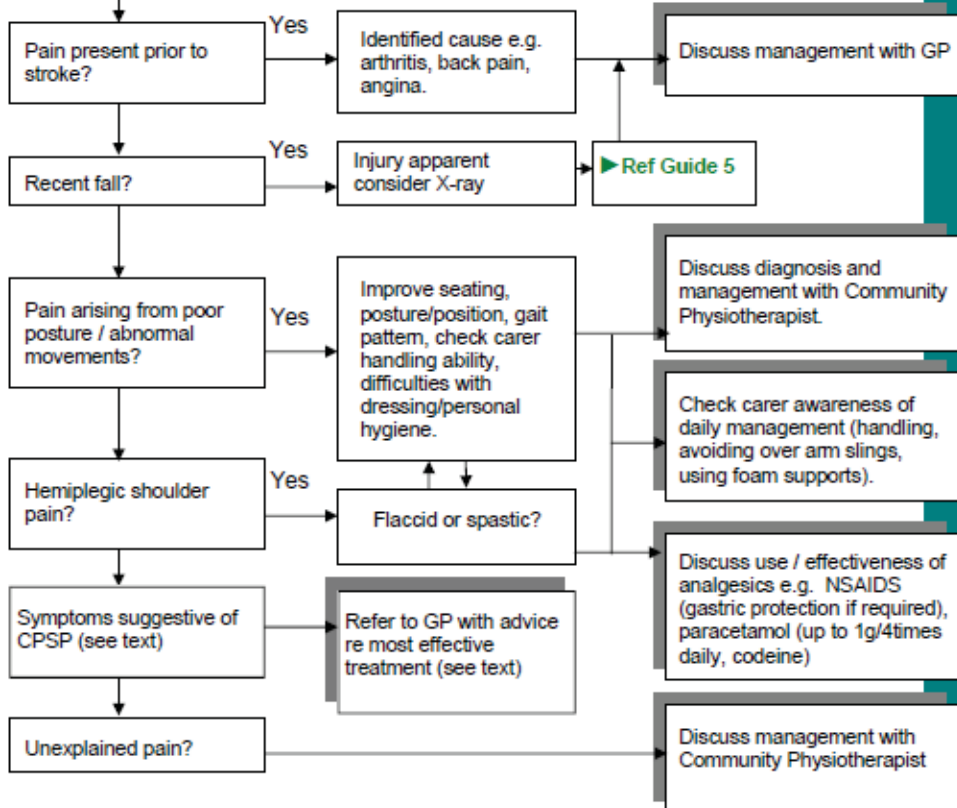
McGill pain questionnaire: [www.cebp.nl/vault\\_public/filesystem/?ID=1400](http://www.cebp.nl/vault_public/filesystem/?ID=1400)

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Carry out pain assessment covering description, measurement, cause (see below) and significance of the pain. If cognitive / communication impairment use specialist assessment tools ([Assessment Scales in References](#)) or use checklist of behavioural signs <sup>(Note 1)</sup>.

*If unsure about pain type, discuss with Physiotherapist with stroke expertise or Stroke Consultant.*

Consider depression as an aggravating factor that modulates pain perception (the reverse is also true) (► [Ref Guide 14](#))



## At review:

- Ask about presence of pain as a consequence of stroke (even if pain was not present at first assessment - repeat at each contact);
- Ensure consistency when monitoring pain by using the same scale at each assessment (advise other health professionals of scale used and provide as necessary);
- If interventions prove ineffective, refer to GP for appropriate analgesics;
- Consider referral (within one month of treatment onset) to specialist pain service for unmanageable pain syndromes.