

# Physiotherapy

## Concise Guide

### for **Stroke**

The second edition of the *National clinical guidelines for stroke (NCGS)*<sup>1</sup> developed by the Intercollegiate Stroke Working Party (ISWP) was published in June 2004. These revised and expanded guidelines have new sections, including the management of transient ischaemic attack (TIA), subarachnoid haemorrhage, cognitive impairments, and concordance with medication. There is also a separate set of guidelines for the management of stroke in childhood. Both these guidelines can be accessed on [www.rcplondon.ac.uk](http://www.rcplondon.ac.uk).

The NCGS cover the management of patients with TIA and acute stroke from onset, through rehabilitation and secondary prevention to the longer term. Their aim is to help the clinicians make the best decisions for each patient, using the evidence currently available.

This concise guide (2nd edition) contains the recommendations from the NCGS that have particular implications for physiotherapy. They were produced by the national physiotherapy representatives on the ISWP: Sheila Lennon (Chartered Society of Physiotherapy (CSP)), Christine Fitzpatrick (Association of Chartered Physiotherapists Interested in Older People (AGILE)), and Nicola Hancock (Association of Chartered Physiotherapists Interested in Neurology (ACPIN)). It is recommended that all physiotherapists consult the full guidelines, which contain supporting evidence and more detailed guidance. A patient and carer booklet has also been produced, and should be made widely available.<sup>2</sup> In this concise guide, capital letters in parentheses indicate the grade of recommendation. Guidelines considered to be essential by the ISWP have been identified by an asterisk.

Level of evidence	Type of evidence	Grade of recommendation
Ia	Meta-analysis of randomised controlled trials (RCTs)	A
Ib	At least one RCT	A
IIa	At least one well designed, controlled study but without randomisation	B
IIb	At least one well designed, quasi-experimental study	B
III	At least one well designed, non-experimental descriptive study	C
IV	Expert committee reports, opinions and/or experience of respected authorities	D



## Guidelines with direct implications for physiotherapy practice

### Staffing structure

Staffing levels for physiotherapy will vary according to factors such as the setting, the type of unit, the level of treatment required, and skillmix (adapted from AGILE, 2004).<sup>3</sup> To date, the ISWP has not made any recommendation regarding staffing levels in stroke care. SIGN (2002)<sup>4</sup> has identified a typical staffing structure for physiotherapy within stroke unit trials for a 10-bed stroke unit as one to two full-time equivalent staff, divided between therapists and assistants.<sup>5</sup>

### Service organisation

- a Stroke services should be organised so that patients are admitted under the care of a specialist team for their acute care and rehabilitation (A\*).
- b Stroke services should have:
  - i a coordinated multidisciplinary team that meets at least once a week for the interchange of information about individual patients (B\*)
  - ii staff with specialist expertise in stroke and rehabilitation (B\*)
  - iii educational programmes for staff, patients and carers (B\*)
  - iv agreed protocols for common problems (B\*).
- c Each service should conduct a needs assessment exercise to determine the level of service so that all stroke patients in the area have access to the same standards of care (C\*).
- d Specialist stroke services should be available in the community as part of an integrated system of care to facilitate early supported discharge (A).
- e Specialist day hospital rehabilitation or specialist domiciliary rehabilitation can be offered to outpatients and are equally effective (A).
- f A specialist stroke team should include a physiotherapist with specialist knowledge (C).
- g Patients should be admitted to hospital for initial care and treatment (A\*).
- h Patients should only be managed at home if:
  - i care services are able to provide adequate and flexible support within 24 hours (D)
  - ii the services delivered at home are part of a specialist stroke service (A).

- i Specialist medical and rehabilitation services must:
  - i recognise the particular physical, psychological and social needs of younger patients with stroke
  - ii be provided in an environment suited to their personal needs (C\*).
- j All clinicians should be involved in audit of stroke care and use the results to plan service improvements (B). (A physiotherapy-specific audit is available in the *Multidisciplinary stroke audit package*<sup>6</sup> published by the Royal College of Physicians in 2002, and is currently under review.)

## Core principles of care

### Use of assessments/measures

- a All patients should be referred to a specialist rehabilitation team as soon as possible after admission (A\*).
- b Where possible and available, clinicians should use assessments or measures that have been studied in terms of validity (appropriateness for the purpose) and reliability (extent of variability) (D).
- c Patients should be reassessed at appropriate intervals (D).

### Goal setting

- a Goals should be meaningful, challenging but achievable (B), and there should be both short- and long-term goals (D).
- b Goal setting should involve the patient (B), and the family if appropriate (D).
- c Goals should be set at the team level as well as at the level of an individual clinician (D).
- d Judging progress against goals set (goal attainment scaling) may be helpful (B).

### Underlying approach to therapy and teamwork

- a All members of the healthcare team should work together with the patient, carer and family, using a shared philosophy and common goals (B\*).
- b One of the current therapeutic approaches to movement re-education should be used to improve function (A).
- c Patients should be given the opportunity to repeatedly practise functional skills and activities (A\*).

- d Patients should undergo as much therapy appropriate to their needs as they are willing and able to tolerate (A).
- e The team should promote the practice of skills gained in therapy into the patient's daily routine in a consistent manner (A\*).
- f All team members handling patients should be taught safe and appropriate ways of moving and handling (C).

## Carers and families

- a Information provision should take into account the needs of each individual (D).
- b Information should be freely available to patients and their families in a variety of languages and in formats specific to patient impairments (A\*).
- c Patients and carers should be offered education programmes to assist them in adapting to their new role (B).
- d The needs of the carers should be considered from the outset in the following domains: information provision; planning and decision making; and professional support (eg psychosocial, health) (A\*).
- e Stroke services must be alert to the likely stress on carers, specifically recognising the stress associated with 'hidden' impairments such as cognitive loss, urinary incontinence, and irritability (B\*).
- f Information should be given to carers on the nature of stroke and its manifestations, and on relevant local and national services (A).

## Acute management

### Assessment

- a A multidisciplinary assessment using a formal procedure or protocol should be undertaken and documented in the notes within five working days of admission (D).
- b On admission, the patient should be assessed for their needs in relation to moving and handling (C).
- c Patients should be assessed by a physiotherapist within 72 hours of admission (C).

### Prevention of complications

- a Staff should position patients, whether lying or sitting, to minimise the risk of complications such as aspiration, respiratory complications, shoulder pain, contractures and pressure sores (B).
- b Patients should be mobilised as soon as possible (B).
- c Intermittent compression should not be used routinely for a swollen hand (A).
- d The following interventions to prevent shoulder pain should be considered:
  - i avoiding the use of overhead arm slings, which encourage uncontrolled abduction (A)
  - ii use of foam supports (A)
  - iii education of staff and carers about correct handling of the hemiplegic arm (B)
  - iv positioning (B).

## Rehabilitation

### Psychological impairment

- a Patients should be given information, advice and the opportunity to talk about the impact of illness upon their lives (B).

### Cognitive impairment

- a All members of the multidisciplinary team should take into consideration the patient's cognitive status when planning and delivering treatment (D).
- b For every patient with impaired spatial awareness, nursing and therapy sessions (eg for shoulder pain, postural control, feeding) will need to be modified to cue attention to the impaired side (D).
- c For people with memory difficulties, nursing and therapy sessions should use techniques which capitalise on preserved abilities, eg visualisation versus verbalisation (D).
- d People who appear easily distracted or unable to concentrate require careful planning of nursing and therapy sessions to minimise the attentional demands placed on them (D).

## Motor control and function

### Therapy

- a A physiotherapist with expertise in neurodisability should coordinate therapy to improve movement performance of patients with stroke (C).
- b Intensive therapy for the upper limb should be considered to improve arm function in patients with mild impairment (A).
- c Bilateral arm training may improve motor performance of the upper limb (C).
- d Walking sticks should be considered to increase standing stability in patients with severe disability (B).
- e Gait re-education techniques to improve walking ability that are based on recognised therapy approaches should be offered to improve walking ability (B).
- f For the specific objectives of (i) improving reaching for objects, (ii) increasing walking speed, a task-specific approach should be used rather than an impairment-focused approach (B).
- g Resisted exercise should be considered to improve muscle strength in targeted muscles (A).
- h Patients should participate in cardiovascular training (aerobic activity) (A).
- i All patients must be given opportunities to practise personal activities of daily living and, as appropriate, relevant domestic and community activities (C).

### Adjunct/novel therapy

- a Biofeedback systems should not be used on a routine basis (A).
- b Functional electrical stimulation (FES) should not be used on a routine basis (A).
- c Individual patients should be considered for FES as an orthosis in certain circumstances, such as improving arm movement, ankle dorsiflexion and gait performance (A).
- d Treadmill training (with partial body weight support) should not be used on a routine basis (A).
- e For patients who can walk independently, treadmill training with partial body weight support (<40%) between 30 days to three months post stroke could be considered as an adjunct to conventional therapy (B).

- f Robot-assisted movement therapy should be considered as an adjunct to conventional therapy in patients with deficits in arm function, who are at least six months post stroke (A).
- g Constraint-induced therapy to increase the use of the affected arm should be considered in patients with at least 10 degrees of active wrist and finger extension, who are more than a year post stroke and who can walk independently without an aid (B).
- h Acupuncture should only be used in the context of ongoing trials (D).
- i Routine transcutaneous electrical nerve stimulation (TENS) for improving muscle control should only be used in the context of ongoing trials (A).

## Orthotics/serial casting

- a Ankle foot orthoses (AFOs) should be:
  - i considered for people with foot drop to improve their walking ability (A)
  - ii individually fitted (B).
- b Serial casting should be considered to prevent or reverse contractures (B).
- c Serial casting (splinting) should be considered to reduce spasticity (B).
- d Inflatable air splints should not be used on a routine basis to maintain range (B).

## Spasticity

- a Spasticity should be treated if causing problems, using physical treatments and possibly drugs, though the functional benefit is uncertain (B).
- b Spasticity should not limit the use of strength training (B).
- c In patients with disabling or symptomatically distressing spasticity, injection of botulinum toxin should be considered in conjunction with physiotherapy for reducing tone and/or increasing the range of joint motion (A).
- d Additional electro-stimulation should be considered for increasing the effectiveness of botulinum toxin (A).



## Pain

- a All patients with stroke should be asked on regular visits whether pain is a significant problem or a contributory factor to their current clinical state (D).
- b People with stroke who have musculoskeletal pain should be assessed by specialist therapists to assess the potential for alleviation through exercise, passive movement, better seating or other procedures (D).
- c For established shoulder pain:
  - i treatment should start with simple interventions, eg non-steroidal anti-inflammatory analgesia (C)
  - ii If this does not work, treatment should include high-intensity transcutaneous electrical nerve stimulation (A).

## Equipment

- a The need for special equipment should be assessed on an individual basis; once provided, the value of and need for equipment should be evaluated on a regular basis (B).
- b Patients should be supplied as soon as possible with all the aids, adaptations and equipment they need (A).

## Secondary prevention

- a All patients should be given appropriate advice on lifestyle factors:
  - i stopping smoking (B\*)
  - ii regular exercise (D\*)
  - iii diet and achieving a satisfactory weight (B\*)
  - iv reducing the intake of salt (B\*), and
  - v avoiding excess alcohol (D\*).

## Transfer of care to the community

- a Hospital services should have a protocol and local guidelines (A) to ensure that, before discharge occurs:
  - i patients and families are prepared and fully involved in plans for transfer (D)

- ii all necessary equipment and support services are in place (D)
  - iii any continuing treatment required should be provided without delay by a specialist service in the community, day hospital or outpatients (A)
  - iv patients are given information about, and offered contact with appropriate local statutory and voluntary agencies (D).
- b Any continuing treatment required should be provided without delay by a specialist service in the community, day hospital or outpatients (A).
- c Early hospital discharge (before the end of acute rehabilitation) should only be undertaken if there is a specialist stroke rehabilitation team in the community and if the patient is able to transfer safely from bed to chair (A).
- d Early hospital discharge to generic (non-specialist) community services should not be undertaken (A).
- e Carers should receive all necessary equipment and training in moving and handling, in order to position and transfer the patient safely in the home environment (B).
- f Patients should continue to have access to specialist stroke care and rehabilitation after leaving hospital (A).

## Long-term management

- a Any patient with reduced activity at six months or later after stroke should be assessed for a period of further targeted rehabilitation (A).
- b Independence should be encouraged. As patients become more active, consideration should be given to withdrawal of physical and psychological support, enteral tubes, cessation of therapy, and withdrawal of personal care support (D).
- c Patients and their carers should have their individual psychosocial and support needs reviewed on a regular basis (A).
- d Health and social services professionals should ensure that patients and their families have information about the statutory and voluntary organisations offering services specific to their psychosocial and support needs (D).

## Research

Many important areas of clinical practice do not have evidence to construct guidelines; therefore a high quality stroke service will need to implement many guidelines that have only been graded level D. Stroke teams should be encouraged to participate in well-conducted multi-centre trials.

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## References

- 1 Royal College of Physicians Clinical Effectiveness and Evaluation Unit. *National clinical guidelines for stroke*, 2nd edition. London: Royal College of Physicians, 2004.
- 2 Royal College of Physicians. *Care after stroke and transient ischaemic attack: information for patients and their carers*. London: RCP, 2004.
- 3 AGILE. *Standards of physiotherapy practice and service standards of physiotherapy practice: supplementary paper*. 2004. Accessed at [www.agile-uk.org](http://www.agile-uk.org)
- 4 Scottish Intercollegiate Guidelines Network (SIGN). *Management of patients with stroke: rehabilitation, prevention and management of complications and discharge planning. A national clinical guideline*, 2002. Accessed at [www.sign.ac.uk](http://www.sign.ac.uk).
- 5 Langhorne P, Pollack A, in conjunction with the Stroke Unit Trialists' Collaboration. What are the components of effective stroke unit care? *Age Ageing* 2002;**31**:365–71.
- 6 Royal College of Physicians. *A multidisciplinary stroke audit package*. London: RCP, 2002.

## Useful web links

[www.acpin.net](http://www.acpin.net)  
[www.agile-uk.org](http://www.agile-uk.org)  
[www.csp.org.uk](http://www.csp.org.uk)  
[www.rcplondon.ac.uk](http://www.rcplondon.ac.uk)

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