strokefoundation

Clinical Guidelines for Stroke Management

A quick guide for speech pathology

This summary is an implementation tool designed to raise the awareness of the recommendations most relevant to speech pathologists from the full Clinical Guidelines for Stroke Management. While this summary focuses on speech pathology, stroke care is most effective when all members of the multidisciplinary team are involved. Important caveats to the recommendations are included in the preamble to each section in the main document. Readers are referred back to the main document for details regarding these caveats along with the specific research which underpins the recommendations and the designated NHMRC grades of evidence for each recommendation. In general, where the evidence is clear and trusted, or where there is consensus on the basis of clinical experience and expert opinion (Good practice point), the word 'should' has been used to indicate that the intervention should be routinely carried out. Where the evidence is less clear or where there was significant variation in opinion, the word 'can' has been used. Individual patient factors should always be taken into account when considering different intervention options. The numbers attached to each recommendation relate to the reference number used in the main document. The full guidelines can be downloaded from www.strokefoundation.com.au/clinical-guidelines.

Key points

- Speech pathologists are an important member of the multidisciplinary stroke care team.
- A minimum of one hour active practice per day for each therapy should be provided at least 5 days a week (refer Section 2.1).
- Early screening for swallowing deficits before administration of food, drink or oral medication is essential (refer Section 2.2).
- All stroke patients should be screened for communication deficits (refer Section 2.3).
- Stroke survivors with cognitive communication difficulties should be assessed for right hemisphere syndrome (RHS) (refer Section 2.3.4)

TABLE 1 Grading recommendations[3]

GRADE	DESCRIPTION
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution
Good practice point (GPP)	Recommended best practice based on clinical experience and expert opinion

TABLE 2

ABCD^2 TOOL[170]
A = Age: ≥60 years (1 point)
B = Blood pressure: ≥140 mmHg systolic and/or 90 mmHg diastolic (1 point)
C = Clinical features: unilateral weakness (2 points), speech impairment without weakness (1 point)
D = Duration: > 60 mins (2 points), 10–59 mins (1 point)
D = Diabetes (1 point)

SECTION 1 **Organisation of services**

1.1 Safe transfer of care from hospital to community		**Grade**
a)	Prior to hospital discharge, all patients should be assessed to determine the need for a home visit, which may be carried out to ensure safety and provision of appropriate aids, support and community services.	C [59]
b)	To ensure a safe discharge occurs, hospital services should ensure the following are completed prior to discharge:	
	• patients and families/carers have the opportunity to identify and discuss their post-discharge needs (e.g. physical, emotional, social, recreational, financial and community support) with relevant members of the multidisciplinary team	GPP
	• general practitioners, primary healthcare teams and community services are informed before or at the time of discharge	GPP
	• all medications, equipment and support services necessary for a safe discharge are organised	GPP
	• any continuing specialist treatment required is organised	GPP
	• a documented post-discharge care plan is developed in collaboration with the patient and family and a copy provided to them. This may include relevant community services, self-management strategies (e.g. information on medications and compliance advice, goals and therapy to continue at home), stroke support services, any further rehabilitation or outpatient appointments, and an appropriate contact number for any queries.	GPP
c)	A locally developed protocol may assist in implementation of a safe discharge process.	GPP
d)	A discharge planner may be used to coordinate a comprehensive discharge program for stroke survivors.	D [65]

1.2 Carer training		**Grade**
	Relevant members of the multidisciplinary team should provide specific and tailored training for carers/family before the stroke survivor is discharged home. This should include training, as necessary, in personal care techniques, communication strategies, physical handling techniques, ongoing prevention and other specific stroke-related problems, safe swallowing and appropriate dietary modifications, and management of behaviours and psychosocial issues.	B [67]

1.3 Community rehabilitation and follow up services		**Grade**
a)	Health services with a stroke unit should provide comprehensive, experienced multidisciplinary community rehabilitation and adequately resourced support services for stroke survivors and their families/carers. If services such as the multidisciplinary community rehabilitation services and carer support services are available, then early supported discharge should be offered for all stroke patients with mild to moderate disability.	A [68, 69]
b)	Rehabilitation delivered in the home setting should be offered to all stroke survivors as needed. Where home rehabilitation is unavailable, patients requiring rehabilitation should receive centre-based care.	B [72, 73]
c)	Contact with and education by trained staff should be offered to all stroke survivors and families/carers after discharge.	C [77, 81]
d)	Stroke survivors can be managed using a case management model after discharge. If used, case managers should be able to recognise and manage depression and help to coordinate appropriate interventions via a medical practitioner.	C [89, 92]
e)	Stroke survivors should have regular and ongoing review by a member of a stroke team, including at least one specialist medical review. The first review should occur within 3 months, then again at 6 and 12 months post discharge.	GPP
f)	Stroke survivors and their carers/families should be provided with the contact information for the specialist stroke service and a contact person (in the hospital or community) for any post-discharge queries for at least the first year following discharge.	GPP

1.4 Long term rehabilitation		Grade
a)	Stroke survivors who have residual impairment at the end of the formal rehabilitation phase of care should be reviewed annually usually by the general practitioner or rehabilitation provider to consider whether access to further interventions are needed. A referral for further assessment should be offered for relevant allied health professionals or general rehabilitation services if there are new problems not present when undertaking initial rehabilitation, or if the person's physical or social environment has changed.	GPP
b)	Stroke survivors with residual impairment identified as having further rehabilitation needs should receive therapy services to set new goals and improve task-orientated activity.	B [104, 105]
c)	Stroke survivors with confirmed difficulties in performance of personal tasks, instrumental activities, vocational activities or leisure activities should have a documented management plan updated and initiated to address these issues.	GPP
d)	Stroke survivors should be encouraged to participate long term in appropriate community exercise programs.	C [103]

1.5 Standardised assessment		Grade
	Clinicians should use validated and reliable assessment tools or measures that meet the needs of the patient to guide clinical decision-making.	GPP

1.6 Goal setting		Grade
a)	Stroke survivor and their families/carers who are involved in the recovery process should have their wishes and expectations established and acknowledged.	GPP
b)	Stroke survivor and their families/carers should be given the opportunity to participate in the process of setting goals unless they choose not to or are unable to participate.	B [5]
c)	Health professionals should collaboratively set goals for patient care. Goals should be prescribed, specific and challenging. They should be recorded, reviewed and updated regularly.	C [122]
d)	Stroke survivors should be offered training in self-management skills that include active problem-solving and individual goal setting.	GPP

1.7 Team meetings		Grade
	The multidisciplinary stroke team should meet regularly (at least weekly) to discuss assessment of new patients, review patient management and goals, and plan for discharge.	C [41]

1.8 Information and education		Grade
a)	All stroke survivors and their families/carers should be offered information tailored to meet their needs using relevant language and communication formats.	A [125]
b)	Information should be provided at different stages in the recovery process.	B [125]
c)	Stroke survivors and their families/carers should be provided with routine, follow-up opportunities for clarification or reinforcement of the information provided.	B [125]

1.9 Family meetings		Grade
	The stroke team should meet regularly with the patient and their family/carer to involve them in management, goal setting and planning for discharge.	C [41]

1.10 Stroke service Improvement		Grade
a)	All stroke services should be involved in quality improvement activities that include regular audit and feedback ('regular' is considered at least every two years).	B [141]
b)	Indicators based on nationally agreed standards of care should be used when undertaking any audit.	GPP

SECTION 2 **Rehabilitation**

2.1 Amount, intensity and timing of rehabilitation		**Grade**
2.1.1 Amount and intensity of rehabilitation		
a)	Rehabilitation should be structured to provide as much practice as possible within the first six months after stroke.	A [470]
b)	For patients undergoing active rehabilitation, as much therapy for dysphagia or communication difficulties should be provided as they can tolerate.	C [475, 477–79]
c)	Patients should be encouraged by staff members, with the help of their family and/or friends if appropriate to continue to practice skills they learn in therapy sessions throughout the remainder of the day.	GPP
2.1.2 Timing of rehabilitation		
	Treatment for aphasia should be offered as early as tolerated.	B [478]
2.2 Sensorimotor impairment		**Grade**
2.2.1 Dysphagia		
a)	Patients should be screened for swallowing deficits before being given food, drink or oral medications. Personnel specifically trained in swallowing screening using a validated tool should undertake screening.	B [494, 495]
b)	Swallowing should be screened for as soon as possible but at least within 24 hours of admission.	GPP
c)	The gag reflex is not a valid screen for dysphagia and should NOT be used as a screening tool.	B [496, 497]
d)	Patients who fail the swallowing screening should be referred to a speech pathologist for a comprehensive assessment. This may include instrumental examination e.g. VMBS &/or FEES. Special consideration should be given to assessing and managing appropriate hydration. These assessments can also be used for monitoring during rehabilitation.	GPP
e)	Compensatory strategies such as positioning, therapeutic manoeuvres or modification of food and fluids to facilitate safe swallowing should be provided for people with dysphagia based on specific impairments identified during comprehensive swallow assessment.	B [479]
f)	One or more of the following methods can be provided to facilitate resolution of dysphagia:	
	• therapy targeting specific muscle groups (e.g. ‘Shaker’ therapy)	C [516, 517]
	• thermo-tactile stimulation	C [511, 513, 515]
	• electrical stimulation if it is delivered by clinicians experienced with this intervention, applied according to published parameters and employing a research or quality framework.	C [512]
g)	Dysphagic patients on modified diets should have their intake and tolerance to diet monitored. The need for continued modified diet should be regularly reviewed.	GPP
h)	Patients with persistent weight loss and recurrent chest infections should be urgently reviewed.	GPP
i)	All staff and carers involved in feeding patients should receive appropriate training in feeding and swallowing techniques.	GPP
2.3 Communication		**Grade**
2.3.1 Aphasia		
a)	All patients should be screened for communication deficits using a screening tool that is valid and reliable.	C [608]
b)	Those patients with suspected communication difficulties should receive formal, comprehensive assessment by a specialist clinician.	GPP

c)	Where a patient is found to have aphasia, the clinician should:	
	• document the provisional diagnosis	GPP
	• explain and discuss the nature of the impairment with the patient, family/carers and treating team, and discuss and teach strategies or techniques which may enhance communication	GPP
	• in collaboration with the patient and family/carer, identify goals for therapy and develop and initiate a tailored intervention plan. The goals and plans should be reassessed at appropriate intervals over time.	GPP
d)	All written information on health, aphasia, social and community supports (such as that available from the Australian Aphasia Association or local agencies) should be available in an aphasia-friendly format.	D [615, 616]
e)	Alternative means of communication (such as gesture, drawing, writing, use of augmentative and alternative communication devices) should be used as appropriate.	GPP
f)	Interventions should be individually tailored but can include:	
	• treatment of aspects of language (including phonological and semantic deficits, sentence-level processing, reading and writing) following models derived from cognitive neuropsychology	C [320]
	• constraint-induced language therapy	B [476]
	• the use of gesture	D [321]
	• supported conversation techniques	C [617, 618]
	• delivery of therapy programs via computer.	C [612]
g)	The routine use of piracetam is NOT recommended.	B [621]
h)	Group therapy and conversation groups can be used for people with aphasia and should be available in the longer term for those with chronic and persisting aphasia.	C [619]
i)	People with chronic and persisting aphasia should have their mood monitored.	GPP
j)	Environmental barriers facing people with aphasia should be addressed through training communication partners, raising awareness of and educating about aphasia in order to reduce negative attitudes, and promoting access and inclusion by providing aphasia-friendly formats or other environmental adaptations. People with aphasia from culturally and linguistically diverse backgrounds may need special attention, for example, from trained healthcare interpreters.	GPP
k)	The impact of aphasia on functional activities, participation and quality of life, including the impact upon relationships, vocation and leisure, should be assessed and addressed as appropriate from early post-onset and over time for those chronically affected.	GPP
2.3.2 Dyspraxia of speech		
a)	Patients with suspected dyspraxia of speech should receive comprehensive assessment.	GPP
b)	Interventions for speech motor skills should be individually tailored and can target articulatory placement and transitioning, speech rate and rhythm, increasing length and complexity of words and sentences, and prosody including lexical, phrasal, and contrastive stress production. In addition, therapy can incorporate:	
	• integral stimulation approach with modelling, visual cueing, and articulatory placement cueing	D [623]
	• principles of motor learning to structure practice sessions (e.g. order in which motor skills are practised during a session, degree of variation and complexity of behaviours practised, intensity of practice sessions) and delivery of feedback on performance and accuracy	D [624–26]
	• PROMPT therapy.	D [623]
c)	The use of augmentative and alternative communication modalities such as gesture or speech-generating devices is recommended for functional activities.	D [623]

2.3.3 Dysarthria		
a)	Patients with unclear or unintelligible speech should be assessed to determine the nature and cause of the speech impairment.	GPP
b)	Interventions for the treatment of dysarthria can include:	
	• biofeedback or a voice amplifier to change intensity and increase loudness	D [628, 629]
	• intensive therapy aiming to increase loudness (e.g. Lee Silverman Voice Treatment)	D [630]
	• the use of strategies such as decreased rate, over-articulation or gesture	GPP
	• oral musculature exercises.	GPP
c)	People with severe dysarthria can benefit from using augmentative and alternative communication devices in everyday activities.	GPP
2.3.4 Cognitive-communication deficits		
	Stroke patients with cognitive involvement who have difficulties in communication should have a comprehensive assessment undertaken, a management plan developed and family education, support and counselling as required.	GPP
2.4 Cognition		**Grade**
2.4.1 Assessment of cognition		
a)	All patients should be screened for cognitive and perceptual deficits using validated and reliable screening tools.	GPP
b)	Patients identified during screening as having cognitive deficits should be referred for comprehensive clinical neuropsychological investigations.	GPP
2.4.2 Attention and concentration		
	Cognitive rehabilitation can be used in stroke survivors with attention and concentration deficits.	C [648, 650, 651]
2.4.3 Memory		
	Any patient found to have memory impairment causing difficulties in rehabilitation or adaptive functioning should:	
	• be referred for a more comprehensive assessment of their memory abilities	GPP
	• have their nursing and therapy sessions tailored to use techniques which capitalise on preserved memory abilities	GPP
	• be assessed to see if compensatory techniques to reduce their disabilities, such as notebooks, diaries, audiotapes, electronic organisers and audio alarms are useful	D [653]
	• be taught approaches aimed at directly improving their memory	GPP
	• have therapy delivered in an environment as like the patient's usual environment as possible to encourage generalisation.	GPP
2.4.4 Executive functions		
a)	Patients considered to have problems associated with executive functioning deficits should be formally assessed using reliable and valid tools that include measures of behavioural symptoms.	GPP
b)	External cues, such as a pager, can be used to initiate everyday activities in stroke survivors with impaired executive functioning.	C [653]
c)	In stroke survivors with impaired executive functioning, the way in which information is provided should be considered.	C [655]
2.4.5 Agnosia		
	The presence of agnosia should be assessed by appropriately trained personnel and communicated to the stroke team.	GPP

2.4.6 Neglect		
a)	Any patient with suspected or actual neglect or impairment of spatial awareness should have a full assessment using validated assessment tools.	C [660, 661]
b)	Patients with unilateral neglect can be trialled with one or more of the following interventions:	
	• simple cues to draw attention to the affected side	GPP
	• visual scanning training in addition to sensory stimulation	C [662, 663]
	• prism adaptation	C [665]
	• eye patching	C [662, 664]
	• mental imagery training or structured feedback.	D [662]
2.5 Fatigue		**Grade**
a)	Therapy for stroke survivors with fatigue should be organised for periods of the day when they are most alert.	GPP
b)	Stroke survivors and their families/carers should be provided with information and education about fatigue; including potential management strategies such as exercise, establishing good sleep patterns, avoid sedating drugs and too much alcohol.	GPP
2.6 Poor oral hygiene		**Grade**
a)	All patients, particularly those with swallowing difficulties, should have assistance and/or education to maintain good oral and dental (including dentures) hygiene.	GPP
b)	Staff or carers responsible for the care of patients disabled by stroke (in hospital, in residential care and in home care settings) can be trained in assessment and management of oral hygiene.	C [691]

This summary is based on the Clinical Guidelines for Stroke Management 2010 which have been approved by the NHMRC and endorsed by Speech Pathology Australia.

About the National Stroke Foundation

The National Stroke Foundation is a not-for-profit organisation that works with the public, government, health professionals, patients, carers, families and stroke survivors to reduce the impact of stroke on the Australian community.

Our challenge is to save 110 000 Australians from death and disability due to stroke over 10 years.

We will achieve this by:

- educating the public about the risk factors and signs of stroke and promoting healthy lifestyles
- working with all stakeholders to develop and implement policy on the prevention and management of stroke
- encouraging the development of comprehensive and coordinated services for all stroke survivors and their families
- encouraging and facilitating stroke research.

StrokeLine

The National Stroke Foundation's 1800 787 653 StrokeLine provides information about stroke prevention, recovery and support. Our qualified health professionals offer comprehensive information and help.

The toll free service is open business hours EST across Australia, a message service is available outside these hours.

References are available from: www.strokefoundation.com.au. This document is a general guide to appropriate practice, to be followed subject to the clinician's judgement and the patient's preference in each individual case. The guidelines are designed to provide information to assist decision-making and are based on the best evidence available at the time of development. Copies of the document can be downloaded through the National Stroke Foundation website: www.strokefoundation.com.au.