

CAROTID ENDARTERECTOMY

SYMPTOMATIC CAROTID ARTERY DISEASE

- A** All patients with carotid artery territory stroke (*without severe disability, mRS ≤ 2*) or transient ischaemic attack should be considered for carotid endarterectomy as soon as possible after the index event.
- A** Carotid endarterectomy (*on the internal carotid artery ipsilateral to the cerebrovascular event*) should be considered in all:
- male patients with a carotid artery stenosis of 50-99% (*by NASCET method*)
 - female patients with a carotid artery stenosis of 70-99%.
- B** For all patients, carotid endarterectomy should be performed as soon as the patient is stable and fit for surgery, ideally within two weeks of event.

ASYMPTOMATIC CAROTID ARTERY DISEASE

- A** CEA should be considered for asymptomatic patients with high grade carotid stenosis and no ipsilateral event for at least six months.
- CEA may be of more benefit for patients who:
- are < 70 years of age
 - are male
 - have bilateral disease.
- A** Standard antiplatelet treatment should be given after CEA.

PROMOTING LIFESTYLE CHANGES

- Patients should be encouraged to take responsibility for their own health and be supported to identify, prioritise, and manage their risk factors.
- A** Diets low in total and saturated fats should be recommended to all for the reduction of cardiovascular risk.
- All individuals should eat at least two portions of fish per week, one of which should be a fatty fish.
- A** People with hypertension should be advised to reduce their salt intake as much as possible to lower blood pressure.
- C** Increasing fruit and vegetable consumption is recommended to reduce risk of stroke or TIA.
- B** Patients and individuals at risk of cardiovascular disease, who are overweight, should be targeted with interventions designed to reduce weight, and to maintain this reduction.
- B** All people who smoke should be advised to stop and offered support to help facilitate this in order to minimise cardiovascular and general health risks.
- B** Lifelong participation in programmes of exercise after stroke should be encouraged.
- When giving advice to patients with stroke, the current general advice of no more than two to three units of alcohol per day for women and no more than three to four units of alcohol per day for men, with at least two drink-free days per week for both men and women, should be recommended.

PROVISION OF INFORMATION

INFORMATION NEEDS OF PATIENTS AND CARERS IN THE ACUTE PHASE OF STROKE

- D** Each patient should be individually assessed on his or her readiness to receive information.
- D** Healthcare professionals should take a patient's age, gender, educational status and communication support needs into account when assessing their need for information.
- A** Information should be offered to patients and carers in a variety of formats, including easy access.
- D** Information should be tailored to the phase of the patient's journey.
- D** Information should be repeated and re-offered at appropriate intervals.
- Information giving should be documented to allow consistency.

SUPPORT NEEDS OF CARERS IN THE ACUTE PHASE OF STROKE

- Healthcare professionals should discuss the caring role and its implications with relatives.
- D** Healthcare professionals should actively involve carers and find out what support they need.
- A** Caregivers should be offered ongoing practical information and training individualised for the needs of the person for whom they are caring.
- Carers should be given advice about where to seek support (*for example, GP, voluntary organisations, etc*).
- D** Carers' support needs should be addressed prior to patient discharge.
- A named healthcare professional should be responsible for coordinating discharge.

This Quick Reference Guide provides a summary of the main recommendations in SIGN Guideline 108, Management of patients with stroke or TIA: assessment, investigation, immediate management and secondary prevention.

Recommendations are graded **A B C D** to indicate the strength of the supporting evidence. Good practice points are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: www.sign.ac.uk

MANAGEMENT OF SUSPECTED STROKE OR TIA

B	Emergency medical services should be redesigned to facilitate rapid access to specialist stroke services.
<input checked="" type="checkbox"/>	Patients with suspected stroke should have: <ul style="list-style-type: none">▪ ambulance priority (<i>blue light</i>) in appropriate cases▪ rapid triage on arrival at hospital▪ immediate access to specialist stroke services▪ rapid brain imaging▪ rapid specialist assessment.

PRE-HOSPITAL ASSESSMENT

C	Standard assessment scales such as FAST or MASS are recommended for pre-hospital assessment to: <ul style="list-style-type: none">▪ increase the accuracy of the initial stroke diagnosis▪ assist with more rapid diagnosis▪ speed up consideration for treatment▪ assist with more rapid referral to specialist services.
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IN-HOSPITAL CARE

A	Stroke patients requiring admission to hospital should be admitted to a stroke unit staffed by a coordinated multidisciplinary team with a special interest in stroke care.
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ASSESSMENT, DIAGNOSIS AND INVESTIGATION

BRAIN IMAGING FOR SUSPECTED ACUTE STROKE OR TIA

A	All patients with suspected stroke should have brain imaging immediately on presentation.
B	CT scanning is recommended for most patients in the acute phase of stroke.
B	MRI with diffusion weighted and gradient echo sequences is recommended (<i>where available and practical</i>) for the diagnosis of acute stroke syndromes in patients who: <ul style="list-style-type: none">▪ are not severely ill, especially where either neurological deficit is mild and the clinical likelihood is that the lesion is small or lies in the posterior fossa or▪ present late (<i>after one week</i>).

CAROTID IMAGING IN PATIENTS WITH CAROTID TERRITORY TIA OR STROKE AND/OR RETINAL EVENT

A	All patients with non-disabling acute stroke syndrome/TIA in the carotid territory who are potential candidates for carotid surgery should have carotid imaging.
C	Initial carotid imaging with duplex ultrasound or alternative should be performed rapidly once a diagnosis of ischaemic stroke or TIA in the carotid territory is made.
<input checked="" type="checkbox"/>	Initial carotid imaging should be performed within 48 hours of presentation.
C	Corroborative imaging is recommended to confirm and more accurately grade carotid disease if duplex carotid ultrasound is abnormal.

TREATMENT OF ISCHAEMIC STROKE

INTRAVENOUS THROMBOLYSIS

A	Patients admitted with stroke within four and a half hours of definite onset of symptoms, who are considered suitable, should be treated with 0.9 mg/kg (<i>up to maximum 90 mg</i>) intravenous rt-PA.
A	<ul style="list-style-type: none">▪ Onset to treatment time should be minimised.▪ Systems should be optimised to allow the earliest possible delivery of intravenous rt-PA within the defined time window.

ASPIRIN

A	Aspirin 300 mg daily should be commenced within 48 hours of ischaemic stroke and continued for at least 14 days.
<input checked="" type="checkbox"/>	Aspirin should be avoided within 24 hours of IV or IA thrombolytic therapy.

DECOMPRESSIVE SURGERY

A	For individuals aged up to 60 years who suffer an acute MCA territory ischaemic stroke complicated by massive cerebral oedema, surgical decompression by hemicraniectomy should be offered within 48 hours of stroke onset.
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PRIOR STATIN THERAPY

<input checked="" type="checkbox"/>	Patients with ischaemic stroke on prior statin therapy should continue treatment, via a nasogastric tube, if necessary.
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PHYSIOLOGICAL INTERVENTION

A	Blood pressure should not be actively managed as a routine in patients in the acute phase of ischaemic stroke.
B	Routine use of insulin regimens to lower blood glucose in patients with moderate hyperglycaemia after acute stroke is not recommended.
A	Early placement of a nasogastric feeding tube should be considered in patients identified as unable to take adequate oral intake.
C	Increased body temperature should be investigated and antipyretic medications may be administered to assist in lowering the body temperature.
A	Early mobilisation, including positioning in bed, sitting on the edge of the bed, or standing up should be considered for patients within the first three days after a stroke.
D	<ul style="list-style-type: none">▪ Patients' suitability for early, active rehabilitation should be considered.▪ Healthcare professionals managing patients in the acute phase of stroke should consider how to actively engage patients throughout the day.
C	<ul style="list-style-type: none">▪ Patients should be placed in an upright sitting position, if their medical condition allows.▪ Hypoxia inducing positions (<i>on left side or slumped in a chair</i>) should be avoided.

PREVENTING RECURRENT STROKE AFTER ISCHAEMIC STROKE OR TIA

ANTIPLATELET AGENTS

A	Low-dose aspirin (<i>75 mg daily</i>) and dipyridamole (<i>200 mg modified release twice daily</i>) should be prescribed after ischaemic stroke or TIA for secondary prevention of vascular events.
B	Dose titration of dipyridamole may help to reduce the incidence of headache.
A	Clopidogrel (<i>75mg daily</i>) monotherapy should be considered as an alternative to combination aspirin and dipyridamole after ischaemic stroke or TIA for secondary prevention of vascular events.
<input checked="" type="checkbox"/>	Patients with a documented aspirin hypersensitivity should receive treatment with clopidogrel monotherapy.
<input checked="" type="checkbox"/>	Patients unable to tolerate aspirin and dipyridamole combination therapy or clopidogrel monotherapy should receive treatment with aspirin or dipyridamole monotherapy.

STATINS

A	A statin should be prescribed to patients who have had an ischaemic stroke, irrespective of cholesterol level.
A	Atorvastatin (<i>80 mg</i>) should be considered for patients with TIA or ischaemic stroke.
A	Other statins (<i>such as simvastatin 40 mg</i>) may also be considered as they reduce the risk of major vascular events.

ANTICOAGULANTS

A	Patients with ischaemic stroke or TIA who are in atrial fibrillation should be offered warfarin with target INR 2.0-3.0.
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ANTIHYPERTENSIVES

A	All patients with a previous stroke or TIA should be considered for treatment with an ACE inhibitor and thiazide regardless of blood pressure, unless contraindicated.
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PREVENTING RECURRENT STROKE AFTER PICH

BLOOD PRESSURE REDUCTION

A	Lowering blood pressure (<i>non-acutely</i>) following ICH using a combination therapy of ACE inhibitor and thiazide diuretic should be considered to prevent further vascular events.
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ANTIPLATELET AGENTS

	The use of aspirin following ICH:
B	<ul style="list-style-type: none">▪ is not recommended to prevent further vascular events when the risk of recurrence is low.
C	<ul style="list-style-type: none">▪ the use of aspirin following ICH may be considered when there is a high risk of cardiac ischaemic events.

STATINS

A	Statin therapy after haemorrhagic stroke is not routinely recommended unless the risk of further vascular events outweighs the risk of further haemorrhage.
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