



# Greater Manchester Assessment of Stroke Rehabilitation (G-MASTER) Toolkit Users' Manual

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# G-MASTER

**Greater Manchester Assessment of Stroke Rehabilitation**

*The assessment toolkit for stroke rehabilitation professionals*

**Greater Manchester & Cheshire  
Cardiovascular Network**

Cardiac - Stroke - Renal - Vascular - Diabetes

Knowledge  
Transfer  
Partnerships

University of  
**Salford**  
MANCHESTER

**MANCHESTER**  
1824  
The University of Manchester

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## Introduction

### Background

Assessment is a crucial part of stroke rehabilitation, providing a means of identifying and measuring patients' needs.

Although national guidance recommends the use of standardised assessment tools and outcome measures, clinicians have reported pragmatic difficulties in selecting the best tools to use in their practice. Research evidence has demonstrated that using standardised measures can be beneficial to rehabilitation team communication, allowing information about patients' problems and functional abilities to be shared in an efficient way (Tyson et al., 2010). Measures can also be used to monitor patients' progress, to inform clinical decision-making and to demonstrate service effectiveness.

### What did we aim to achieve?

The G-MASTER project aimed to:

- Provide meaningful ways to measure patient progress through rehabilitation
- Provide clinicians with information about valid and reliable tools that are feasible to use in the clinical setting

*"I think we all struggled to find standardised assessments that we can use and it was really nice to have something that's been assessed as being a suitable tool" OT*

Use of standardised measurements tools in practice can:

- Promote use of a common language to enhance team communication
- Facilitate transfer of information between services, allowing them to provide the best care for the patient
- Help to ensure that multidisciplinary discussions are patient-centred
- Use of same tools across services can prevent repetition of similar assessments for patients

### How did we decide what to measure?

Practicing stroke rehabilitation professionals were asked about the domains of functioning, which:

- Are necessary to measure during rehabilitation
- All members of the rehabilitation team need to know about to treat their patient effectively

Focus groups of patients were also asked about their most important problems after they had a stroke and the ways these were measured. Finally national guidelines were explored to identify the areas requiring measurement using standardised tools.



## *What process did we use to identify tools?*

The literature was searched to identify appropriate validated tools to measure each domain and the psychometric properties of tools were assessed. In addition, tools were assessed for clinical feasibility, including:

- Time taken to administer and score the tool
- Need for specialist training for staff
- Cost for purchase of the tool, specialist equipment or record forms
- Portability

In collaboration with practicing clinical staff, the most robust tools were selected, and are presented here with their instruction manuals and guidelines for use. Where suitable tools were not available, new measures were developed and tested through collaborations of clinical specialists.

## *How can the toolkit be used in practice?*

The aim of the toolkit is for information to be shared among the multidisciplinary team, therefore the tools should be scored (if appropriate; or the scores discussed) within MDT meetings. As a result, a structured approach to running MDT meetings incorporating use of the tools into standardised documentation has been developed and is available at the end of this document.

## *For further information...*

For further information on how the tools were selected and other tools which were considered, please contact:

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## Swallow Screening

### *What do the guidelines say?*

Difficulties in swallowing are common after stroke, affecting around 40% of patients. These difficulties are associated with an increased risk of aspiration and pneumonia and increased mortality rates. Clinical guidelines therefore recommend that every patient who has had a stroke should have their ability to swallow screened by an appropriately trained person using a recognised, standard screening assessment before being given oral food, fluids or oral medication (RCP). Patients with swallowing difficulties should be referred to and assessed by a Speech and Language Therapist (RCP).

### *Could a validated tool be identified from the existing research literature?*

In 2011, a systematic literature search was performed to identify whether a swallow screening tool had been developed that met the following criteria:

- Psychometric criteria: sensitivity >80% and specificity >60%
- Clinical utility criteria: freely available, manageable training requirements, portable, administered in <10 minutes
- Identified tools were also assessed to ascertain whether the necessary detail to enable use of the tool in practice was provided

No tool could be identified that met the criteria outlined above. However, much work and training has been undertaken within local stroke services to develop swallow screening tools and protocols. The development of the Greater Manchester Water Swallow Screening Tool aimed to utilise the expertise of Speech & Language

Therapists and dysphagia-trained nurses across Greater Manchester to develop a series of standardised core indicators to be included in all swallow screening tools across the conurbation.

### *How was the screening tool developed?*

A content analysis of seven screening tools developed by services across Greater Manchester was performed. Commonalities between the screens were identified in three categories: pre-screening checks (to determine whether a swallow screen could be safely completed), administration of the screening instrument (in all cases this incorporated a water swallow test) and clinical indicators of disordered swallowing.

Speech and Language Therapists from across the conurbation then took part in discussions to agree common clinical indicators to be included in all swallow screens. The aim was to provide a core set of indicators to be included in all screens, which teams could add to, to include any other indicators or steps they felt were appropriate and necessary according to local policy. As a result of these discussions, a draft screening tool was formed and this was sent to the group for feedback and comments. A second series of discussions was then held to discuss the feedback, make resulting changes to the tool and agree a final screening tool.

As dysphagia screening is completed in practice by nursing staff, an instruction manual was developed in collaboration with nurses working in stroke services, to ensure the tool was easy to use. Members of the Network's Specialist Nurses group were invited to comment on the tool and revisions were made in line with their feedback. Further validation work is now needed to ensure sensitivity and specificity.





## Greater Manchester Stroke Water Swallow Screening Tool: Instruction Manual

### *General guidelines*

This screen is intended to be carried out **ONLY** by professionals with water swallow screening training

**DO NOT administer the water swallow test unless you have first worked through the pre-screening checks.** If you are unsure at any point, discontinue the screen and refer to Speech and Language Therapy.

*Discontinuing* – if you discontinue the screen at any point:

- Keep the patient nil by mouth
- Ensure that it is clear at what point the screen was discontinued, and sign and date the sheet.
- File the screening form in the patient's medical records and make an entry into the notes stating that the screen was attempted and the reasons why it was discontinued.
- Refer to Speech and Language Therapy if indicated and consider nutrition and hydration in line with local protocol
- Ensure that medication is administered through an alternative route (refer to pharmacy guidelines on liquid/dispersible medications)

### *Procedure*

- 1.) Record the patient's name, date of birth and NHS/hospital number on the form.
- 2.) Record the date and time you are carrying out the screen.
- 3.) Monitor vital signs, including BP, pulse and sats.
- 4.) Observe whether the patient can remain awake and alert for long enough to complete the swallow screen – indicate on the form whether this is the case. As a guide, the screen may take up to 15 minutes to complete. If the patient is drowsy and therefore inappropriate for assessment, monitor alertness and repeat the screen as appropriate.
- 5.) Check that the patient can remain in an upright position, with supports if necessary, for long enough to complete the swallow screen. If supports are necessary, ensure they are in place before continuing. If the patient is unable to remain upright for long enough, mark the form accordingly, discontinue the screen and refer to Speech and Language Therapy.





- 6.) Check whether there is oxygen in situ. If only nasal specs are in situ, mark 'no' on the form and continue with the screen. If an oxygen mask is being used, check sats and consider whether nasal specs can be used as an alternative. If not, mark 'yes' on the form and discontinue the screening tool. Refer to Speech and Language Therapy if indicated in local protocol.
- 7.) Determine whether the patient has a chest infection, e.g. is temperature elevated? Ask the medical team if you are unsure and indicate on the screening form. If the patient has a chest infection, discontinue the swallow screening tool, manage medically and consider nutrition and hydration in line with local protocol (consult nutrition nurse/dietitian as necessary). Repeat the screen when the patient is free of infection.
- 8.) Ask the patient's permission to check whether their mouth is clean. If necessary, e.g. if there are excess secretions, thrush present or the patient's mouth is dry, administer oral hygiene according to local protocol.
- 9.) Find out whether the patient was on thickened fluids or modified diet prior to admission. This may involve asking the patient directly, asking carers or family members or looking at the patient's medical records. If the patient was previously on thickened fluids or modified diet, indicate the grade/consistency on the form, discontinue the screen and refer to Speech and Language Therapy.
- 10.) Gain patient consent to swallow screen, e.g. say to the patient "swallowing can sometimes be affected when someone has had a stroke, please could I check your swallow?" If the patient asks for more information, use knowledge from your training to explain how and why swallowing may be affected as a result of stroke.
- 11.) If the patient refuses to be screened, indicate this on the form, discontinue the screen and refer to Speech and Language Therapy. Ensure that refusal is documented in the medical notes. If the patient is unable to give verbal consent, e.g. due to aphasia or confusion, consider whether screening is in the patient's best interests and continue to water swallow test if appropriate. If the patient is not cooperative with screening, discontinue, document as appropriate and refer to Speech and Language Therapy.
- 12.) Proceed to water swallow test (overleaf). Ensure that you have a teaspoon, a glass and a jug of drinking water ready.
- 13.) Give the patient 1 teaspoon of water and observe for two minutes for signs of difficulties. Indicate on the form whether the following signs are present: coughing or choking upon swallow or up to two minutes after swallow, no swallow triggered, wet or gurgly voice quality, change in breathing pattern (may be either fast or laboured) or loss of water from mouth. Other signs to look out for are drooling, poor lip closure, oral residue and an abnormal number



of swallows (too many or too few). Record these signs under any other difficulties if observed and note them on the bottom of the sheet. If you observe difficulties at any time, discontinue the screen and refer to Speech and Language Therapy. Consider nutrition and hydration in line with local protocol (consult nutrition nurse or dietitian as appropriate).

- 14.) Give the patient a second teaspoon of water and observe for two minutes, discontinuing immediately if any signs are present.
- 15.) Give the patient a third teaspoon of water and observe for two minutes, discontinuing immediately if any signs are present.
- 16.) If you do not observe difficulties, give the patient a sip of water from a glass and observe for two minutes for difficulties. **DO NOT** allow the patient to take the glass themselves at this stage so you can control the amount of water given.
- 17.) Give the patient a second sip of water and observe for two minutes, discontinuing immediately if any signs are present.
- 18.) Give the patient a third sip of water and observe for two minutes, discontinuing immediately if any signs are present.
- 19.) If you do not observe any difficulties, give the patient 50ml of water in a glass. If appropriate, give the cup to the patient and tell them to drink slowly. Monitor whether any of the signs of swallowing difficulty are present, as well as monitoring the patient's ability to self-feed and noting signs of ataxia or coordination difficulties. If any signs **of swallowing difficulty** are present, discontinue immediately, document and refer to Speech and Language Therapy. If the patient has difficulties in self-feeding, ensure that this is documented in the notes and consider local protocol.
- 20.) If none of the signs are present, the patient has passed the water swallow screen and can be monitored on normal fluids. Mark the form as appropriate and write your name and signature on the bottom of the form and your designation.

The Greater Manchester Stroke Water Swallow Screening Tool is a test of whether a patient can swallow **water only**. Therefore if a patient passes the screen, this does not necessarily mean they can be given solid foods – further assessment may be required in line with local protocol.



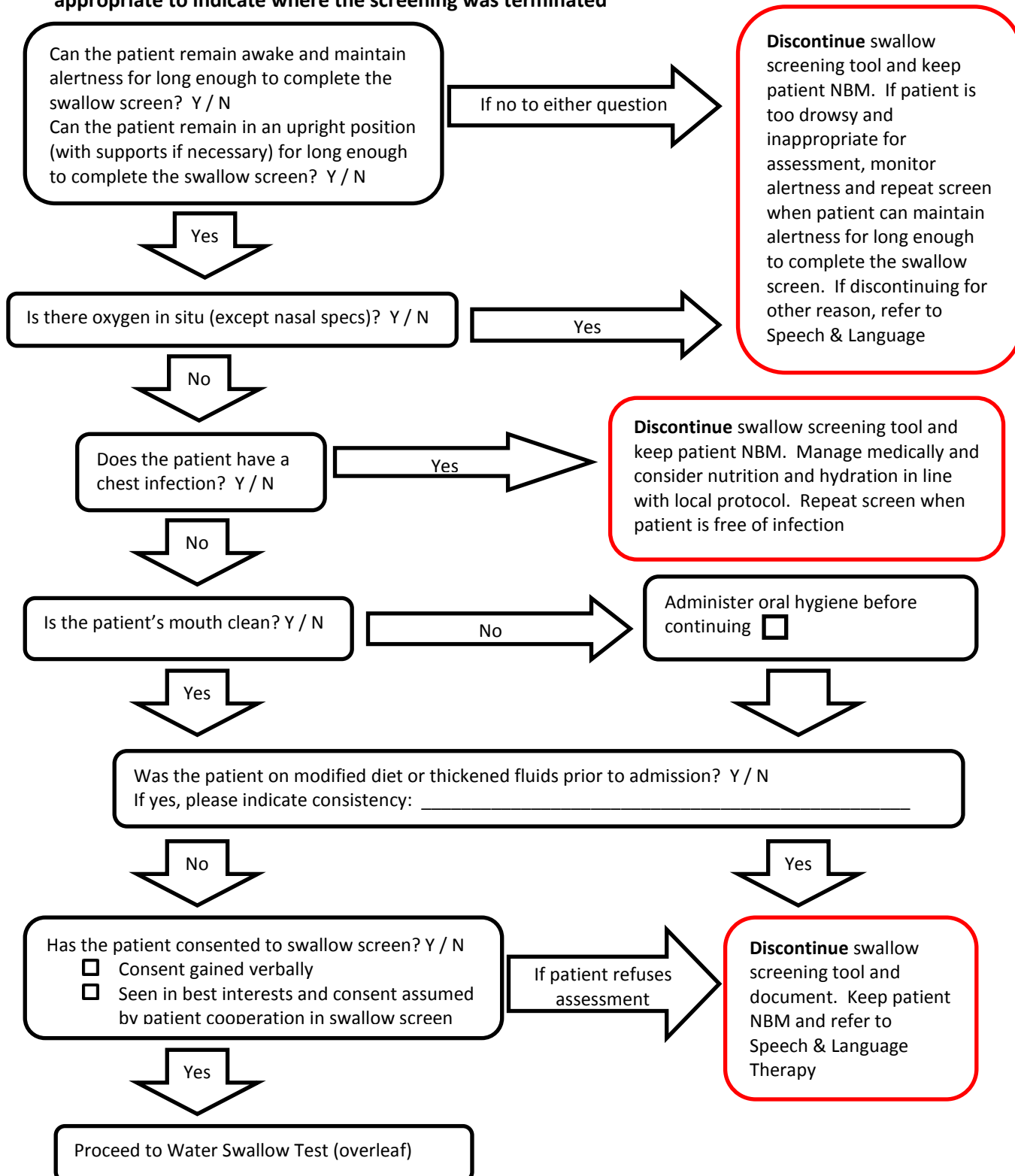
## Greater Manchester Stroke Water Swallow Screening Tool

TO BE CARRIED OUT BY DYSPHAGIA TRAINED NURSES ONLY

Patient's name: \_\_\_\_\_ DOB: \_\_\_\_\_ NHS No. \_\_\_\_\_

Time and date screening carried out: \_\_\_\_\_

Before performing a water swallow test, work through the pre-screening checks below and **delete as appropriate to indicate where the screening was terminated**

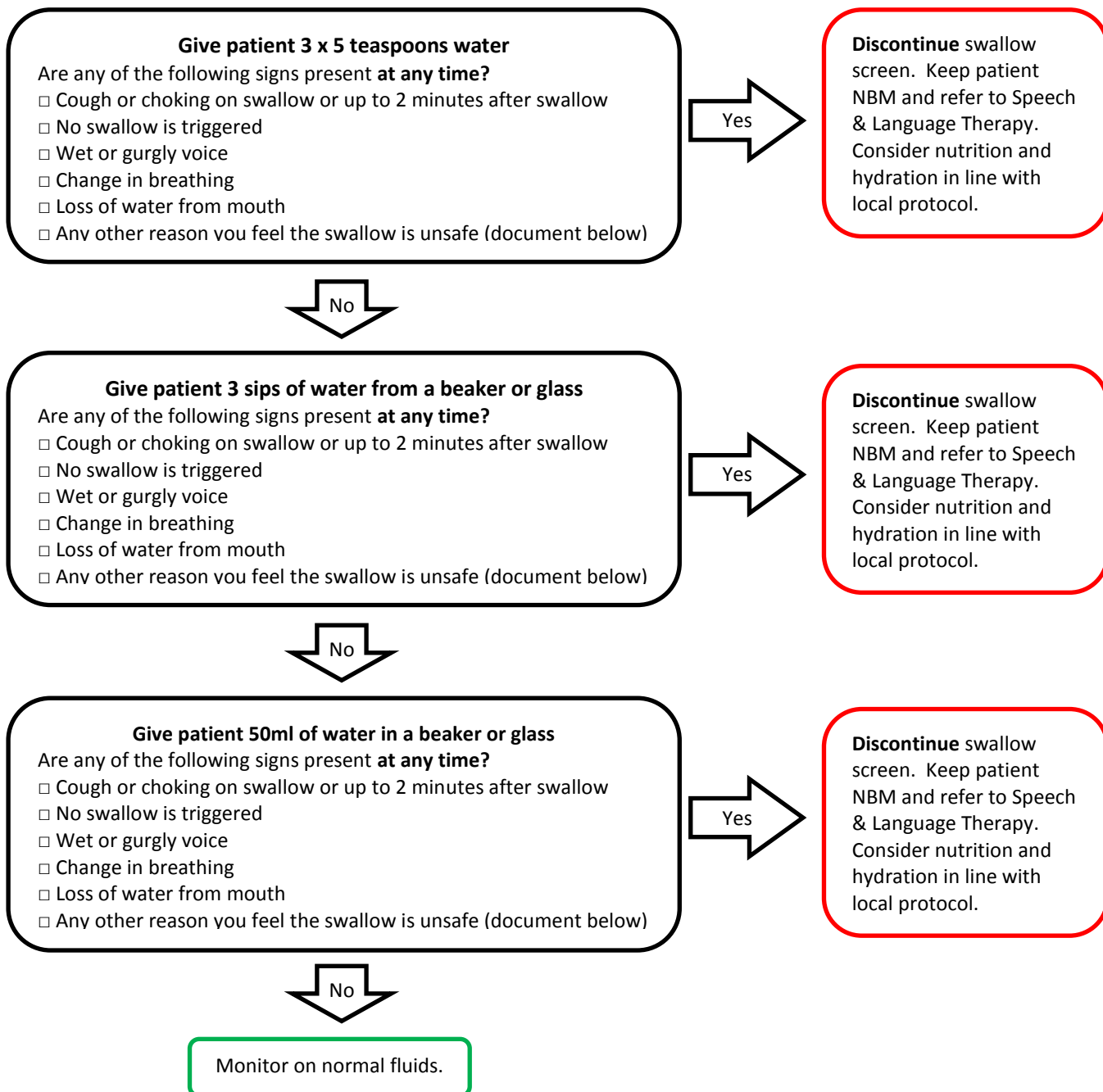




## Greater Manchester Stroke Water Swallow Screening Tool

TO BE CARRIED OUT BY DYSPHAGIA TRAINED NURSES ONLY

Ensure pre-screening checks overleaf have been carried out before administering the Water Swallow Test. If the patient displays any of the listed signs at any point during the Water Swallow Test, discontinue immediately and indicate which signs were observed below



Any other reason you feel the swallow is unsafe:

---

---

Name and signature of person administering screen: \_\_\_\_\_



## Nutritional Screening

### *What do the guidelines say?*

National guidelines state that all patients should be screened for malnutrition and the risk of malnutrition when first assessed (RCP). This should be completed by a trained person using a validated procedure, for example, clinical judgement or the Malnutrition Universal Screening Tool (MUST; RCP). Screening should be repeated weekly for all hospital in-patients (NICE). Detailed nutritional assessment should be undertaken by an appropriately trained health care professional if a person with acute stroke is unable to take adequate nutrition and fluids orally (RCP).

### *How was a tool selected?*

As the guidelines recommend a tool, which is well-validated and used across most of the Trusts involved in the project, this tool was selected as part of the G-MASTER toolkit.



## Malnutrition Universal Screening Tool (BAPEN)



BAPEN  
Advancing Clinical Nutrition

### 'Malnutrition Universal Screening Tool'



MAG  
Malnutrition Advisory Group  
A Standing Committee of BAPEN

BAPEN is registered charity number 1023927 www.bapen.org.uk

### 'MUST'

'MUST' is a five-step screening tool to identify **adults**, who are malnourished, at risk of malnutrition (undernutrition), or obese. It also includes management guidelines which can be used to develop a care plan.

It is for use in hospitals, community and other care settings and can be used by all care workers.

#### This guide contains:

- A flow chart showing the 5 steps to use for screening and management
- BMI chart
- Weight loss tables
- Alternative measurements when BMI cannot be obtained by measuring weight and height.

### The 5 'MUST' Steps

#### Step 1

Measure height and weight to get a BMI score using chart provided. *If unable to obtain height and weight, use the alternative procedures shown in this guide.*

#### Step 2

Note percentage unplanned weight loss and score using tables provided.

#### Step 3

Establish acute disease effect and score.

#### Step 4

Add scores from steps 1, 2 and 3 together to obtain overall risk of malnutrition.

#### Step 5

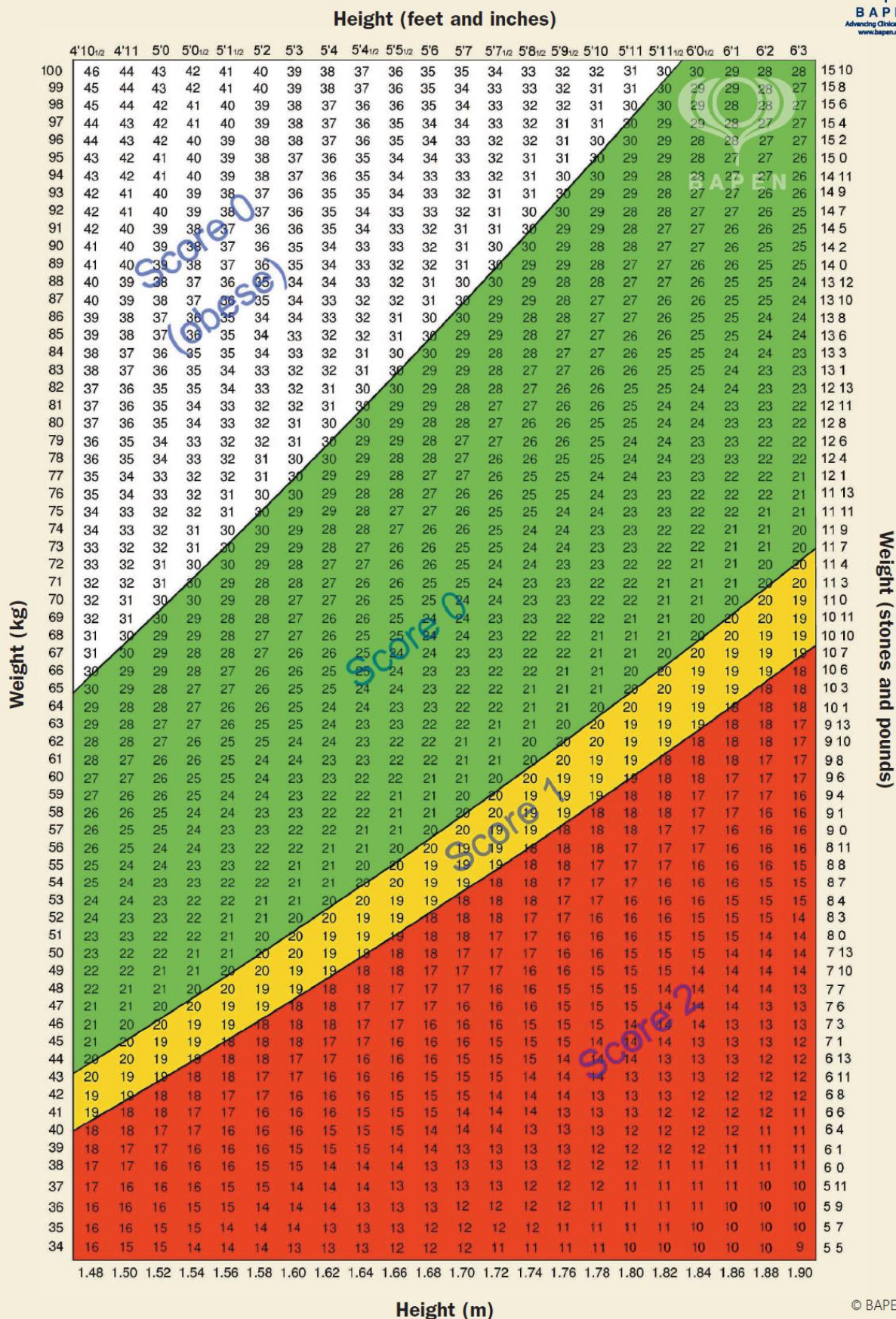
Use management guidelines and/or local policy to develop care plan.

Please refer to *The 'MUST' Explanatory Booklet* for more information when weight and height cannot be measured, and when screening patient groups in which extra care in interpretation is needed (e.g. those with fluid disturbances, plaster casts, amputations, critical illness and pregnant or lactating women). The booklet can also be used for training. See *The 'MUST' Report* for supporting evidence. Please note that 'MUST' has not been designed to detect deficiencies or excessive intakes of vitamins and minerals and is of **use only in adults**.





### Step 1 – BMI score (& BMI)







## Step 1

**BMI score**

BMI kg/m <sup>2</sup>	Score
>20 (>30 Obese)	= 0
18.5-20	= 1
<18.5	= 2

+

## Step 2

**Weight loss score**

Unplanned weight loss in past 3-6 months	
%	Score
<5	= 0
5-10	= 1
>10	= 2

+

## Step 3

**Acute disease effect score**

If patient is acutely ill **and** there has been or is likely to be no nutritional intake for >5 days  
**Score 2**

*If unable to obtain height and weight, see reverse for alternative measurements and use of subjective criteria*

*Acute disease effect is unlikely to apply outside hospital. See 'MUST' Explanatory Booklet for further information*

## Step 4

**Overall risk of malnutrition**

Add Scores together to calculate overall risk of malnutrition  
Score 0 Low Risk    Score 1 Medium Risk    Score 2 or more High Risk

## Step 5

**Management guidelines**

**0**

### Low Risk

**Routine clinical care**

- Repeat screening  
Hospital – weekly  
Care Homes – monthly  
Community – annually for special groups e.g. those >75 yrs

**1**

### Medium Risk

**Observe**

- Document dietary intake for 3 days
- If adequate – little concern and repeat screening
  - Hospital – weekly
  - Care Home – at least monthly
  - Community – at least every 2-3 months
- If inadequate – clinical concern – follow local policy, set goals, improve and increase overall nutritional intake, monitor and review care plan regularly

**2 or more**

### High Risk

**Treat\***

- Refer to dietician, Nutritional Support Team or implement local policy
- Set goals, improve and increase overall nutritional intake
- Monitor and review care plan  
Hospital – weekly  
Care Home – monthly  
Community – monthly

\* Unless detrimental or no benefit is expected from nutritional support e.g. imminent death.

#### All risk categories:

- Treat underlying condition and provide help and advice on food choices, eating and drinking when necessary.
- Record malnutrition risk category.
- Record need for special diets and follow local policy.

#### Obesity:

- Record presence of obesity. For those with underlying conditions, these are generally controlled before the treatment of obesity.

**Re-assess subjects identified at risk as they move through care settings**

See The 'MUST' Explanatory Booklet for further details and The 'MUST' Report for supporting evidence.



## Step 2 – Weight loss score



BAPEN  
Advancing Clinical Nutrition  
www.bapen.org.uk

Weight before weight loss (kg)

	SCORE 0 Wt Loss <5%	SCORE 1 Wt Loss 5-10%	SCORE 2 Wt Loss >10%
34 kg	<1.70	1.70 – 3.40	>3.40
36 kg	<1.80	1.80 – 3.60	>3.60
38 kg	<1.90	1.90 – 3.80	>3.80
40 kg	<2.00	2.00 – 4.00	>4.00
42 kg	<2.10	2.10 – 4.20	>4.20
44 kg	<2.20	2.20 – 4.40	>4.40
46 kg	<2.30	2.30 – 4.60	>4.60
48 kg	<2.40	2.40 – 4.80	>4.80
50 kg	<2.50	2.50 – 5.00	>5.00
52 kg	<2.60	2.60 – 5.20	>5.20
54 kg	<2.70	2.70 – 5.40	>5.40
56 kg	<2.80	2.80 – 5.60	>5.60
58 kg	<2.90	2.90 – 5.80	>5.80
60 kg	<3.00	3.00 – 6.00	>6.00
62 kg	<3.10	3.10 – 6.20	>6.20
64 kg	<3.20	3.20 – 6.40	>6.40
66 kg	<3.30	3.30 – 6.60	>6.60
68 kg	<3.40	3.40 – 6.80	>6.80
70 kg	<3.50	3.50 – 7.00	>7.00
72 kg	<3.60	3.60 – 7.20	>7.20
74 kg	<3.70	3.70 – 7.40	>7.40
76 kg	<3.80	3.80 – 7.60	>7.60
78 kg	<3.90	3.90 – 7.80	>7.80
80 kg	<4.00	4.00 – 8.00	>8.00
82 kg	<4.10	4.10 – 8.20	>8.20
84 kg	<4.20	4.20 – 8.40	>8.40
86 kg	<4.30	4.30 – 8.60	>8.60
88 kg	<4.40	4.40 – 8.80	>8.80
90 kg	<4.50	4.50 – 9.00	>9.00
92 kg	<4.60	4.60 – 9.20	>9.20
94 kg	<4.70	4.70 – 9.40	>9.40
96 kg	<4.80	4.80 – 9.60	>9.60
98 kg	<4.90	4.90 – 9.80	>9.80
100 kg	<5.00	5.00 – 10.00	>10.00
102 kg	<5.10	5.10 – 10.20	>10.20
104 kg	<5.20	5.20 – 10.40	>10.40
106 kg	<5.30	5.30 – 10.60	>10.60
108 kg	<5.40	5.40 – 10.80	>10.80
110 kg	<5.50	5.50 – 11.00	>11.00
112 kg	<5.60	5.60 – 11.20	>11.20
114 kg	<5.70	5.70 – 11.40	>11.40
116 kg	<5.80	5.80 – 11.60	>11.60
118 kg	<5.90	5.90 – 11.80	>11.80
120 kg	<6.00	6.00 – 12.00	>12.00
122 kg	<6.10	6.10 – 12.20	>12.20
124 kg	<6.20	6.20 – 12.40	>12.40
126 kg	<6.30	6.30 – 12.60	>12.60

Weight before weight loss (st lb)

	SCORE 0 Wt Loss <5%	SCORE 1 Wt Loss 5-10%	SCORE 2 Wt Loss >10%
5st 4lb	<4lb	4lb – 7lb	>7lb
5st 7lb	<4lb	4lb – 8lb	>8lb
5st 11lb	<4lb	4lb – 8lb	>8lb
6st	<4lb	4lb – 8lb	>8lb
6st 4lb	<4lb	4lb – 9lb	>9lb
6st 7lb	<5lb	5lb – 9lb	>9lb
6st 11lb	<5lb	5lb – 10lb	>10lb
7st	<5lb	5lb – 10lb	>10lb
7st 4lb	<5lb	5lb – 10lb	>10lb
7st 7lb	<5lb	5lb – 11lb	>11lb
7st 11lb	<5lb	5lb – 11lb	>11lb
8st	<6lb	6lb – 11lb	>11lb
8st 4lb	<6lb	6lb – 12lb	>12lb
8st 7lb	<6lb	6lb – 12lb	>12lb
8st 11lb	<6lb	6lb – 12lb	>12lb
9st	<6lb	6lb – 13lb	>13lb
9st 4lb	<7lb	7lb – 13lb	>13lb
9st 7lb	<7lb	7lb – 13lb	>13lb
9st 11lb	<7lb	7lb – 1st 0lb	>1st 0lb
10st	<7lb	7lb – 1st 0lb	>1st 0lb
10st 4lb	<7lb	7lb – 1st 0lb	>1st 0lb
10st 7lb	<7lb	7lb – 1st 1lb	>1st 1lb
10st 11lb	<8lb	8lb – 1st 1lb	>1st 1lb
11st	<8lb	8lb – 1st 1lb	>1st 1lb
11st 4lb	<8lb	8lb – 1st 2lb	>1st 2lb
11st 7lb	<8lb	8lb – 1st 2lb	>1st 2lb
11st 11lb	<8lb	8lb – 1st 3lb	>1st 3lb
12st	<8lb	8lb – 1st 3lb	>1st 3lb
12st 4lb	<9lb	9lb – 1st 3lb	>1st 3lb
12st 7lb	<9lb	9lb – 1st 4lb	>1st 4lb
12st 11lb	<9lb	9lb – 1st 4lb	>1st 4lb
13st	<9lb	9lb – 1st 4lb	>1st 4lb
13st 4lb	<9lb	9lb – 1st 5lb	>1st 5lb
13st 7lb	<9lb	9lb – 1st 5lb	>1st 5lb
13st 11lb	<10lb	10lb – 1st 5lb	>1st 5lb
14st	<10lb	10lb – 1st 6lb	>1st 6lb
14st 4lb	<10lb	10lb – 1st 6lb	>1st 6lb
14st 7lb	<10lb	10lb – 1st 6lb	>1st 6lb
14st 11lb	<10lb	10lb – 1st 7lb	>1st 7lb
15st	<11lb	11lb – 1st 7lb	>1st 7lb
15st 4lb	<11lb	11lb – 1st 7lb	>1st 7lb
15st 7lb	<11lb	11lb – 1st 8lb	>1st 8lb
15st 11lb	<11lb	11lb – 1st 8lb	>1st 8lb
16st	<11lb	11lb – 1st 8lb	>1st 8lb
16st 4lb	<11lb	11lb – 1st 9lb	>1st 9lb
16st 7lb	<12lb	12lb – 1st 9lb	>1st 9lb



## Alternative measurements and considerations

### Step 1: BMI (body mass index)

#### If height cannot be measured

- Use recently documented or self-reported height (if reliable and realistic).
- If the subject does not know or is unable to report their height, use one of the alternative measurements to estimate height (ulna, knee height or demispan).

### Step 2: Recent unplanned weight loss

If recent weight loss cannot be calculated, use self-reported weight loss (if reliable and realistic).

### Subjective criteria

If height, weight or BMI cannot be obtained, the following criteria which relate to them can assist your professional judgement of the subject's nutritional risk category. Please note, these criteria should be used collectively not separately as alternatives to steps 1 and 2 of 'MUST' and are not designed to assign a score. Mid upper arm circumference (MUAC) may be used to estimate BMI category in order to support your overall impression of the subject's nutritional risk.

#### 1. BMI

- Clinical impression – thin, acceptable weight, overweight. Obvious wasting (very thin) and obesity (very overweight) can also be noted.

#### 2. Unplanned weight loss

- Clothes and/or jewellery have become loose fitting (weight loss).
- History of decreased food intake, reduced appetite or swallowing problems over 3-6 months and underlying disease or psycho-social/physical disabilities likely to cause weight loss.

#### 3. Acute disease effect

- Acutely ill and no nutritional intake or likelihood of no intake for more than 5 days.

Further details on taking alternative measurements, special circumstances and subjective criteria can be found in *The 'MUST' Explanatory Booklet*. A copy can be downloaded at [www.bapen.org.uk](http://www.bapen.org.uk) or purchased from the BAPEN office. The full evidence-base for 'MUST' is contained in *The 'MUST' Report* and is also available for purchase from the BAPEN office.

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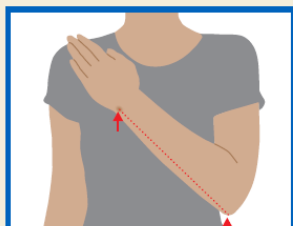


## Alternative measurements: instructions and tables

If height cannot be obtained, use length of forearm (ulna) to calculate height using tables below.

(See The 'MUST' Explanatory Booklet for details of other alternative measurements (knee height and demispan) that can also be used to estimate height).

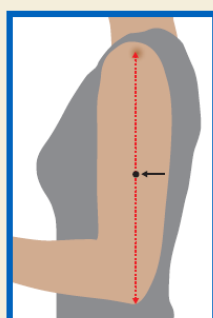
### Estimating height from ulna length



Measure between the point of the elbow (olecranon process) and the midpoint of the prominent bone of the wrist (styloid process) (left side if possible).

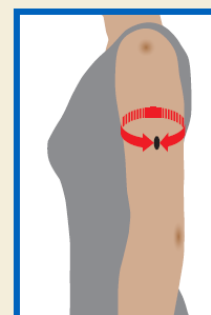
HEIGHT (m)	Men (<65 years)	1.94	1.93	1.91	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	1.75	1.73	1.71
	Men (≥65 years)	1.87	1.86	1.84	1.82	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.67
Ulna length (cm)		32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
HEIGHT (m)	Women (<65 years)	1.84	1.83	1.81	1.80	1.79	1.77	1.76	1.75	1.73	1.72	1.70	1.69	1.68	1.66
	Women (≥65 years)	1.84	1.83	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.66	1.65	1.63
HEIGHT (m)	Men (<65 years)	1.69	1.67	1.66	1.64	1.62	1.60	1.58	1.57	1.55	1.53	1.51	1.49	1.48	1.46
	Men (≥65 years)	1.65	1.63	1.62	1.60	1.59	1.57	1.56	1.54	1.52	1.51	1.49	1.48	1.46	1.45
Ulna length (cm)		25.0	24.5	24.0	23.5	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.5	19.0	18.5
HEIGHT (m)	Women (<65 years)	1.65	1.63	1.62	1.61	1.59	1.58	1.56	1.55	1.54	1.52	1.51	1.50	1.48	1.47
	Women (≥65 years)	1.61	1.60	1.58	1.56	1.55	1.53	1.52	1.50	1.48	1.47	1.45	1.44	1.42	1.40

### Estimating BMI category from mid upper arm circumference (MUAC)



The subject's left arm should be bent at the elbow at a 90 degree angle, with the upper arm held parallel to the side of the body. Measure the distance between the bony protrusion on the shoulder (acromion) and the point of the elbow (olecranon process). Mark the mid-point.

Ask the subject to let arm hang loose and measure around the upper arm at the mid-point, making sure that the tape measure is snug but not tight.



If MUAC is <23.5 cm, BMI is likely to be <20 kg/m<sup>2</sup>.

If MUAC is >32.0 cm, BMI is likely to be >30 kg/m<sup>2</sup>.

The use of MUAC provides a general indication of BMI and is not designed to generate an actual score for use with 'MUST'. For further information on use of MUAC please refer to *The 'MUST' Explanatory Booklet*.





## Communication Screening

### *What do the guidelines say?*

Every patient who has had a stroke should be assessed for communication disability (RCSLT). The RCP Clinical Guideline for Stroke (3<sup>rd</sup> Ed.) recommends that patients entering rehabilitation with damage to the left cerebral hemisphere should be screened for aphasia using a formal measure, e.g. the Frenchay Aphasia Screening Test or the Sheffield Aphasia Screening Test.

### *Could a tool be identified from the existing research literature?*

A recent review of aphasia screening tools that have been validated for use with stroke patients was used as a starting point to identify potential tools (Salter, Jutai et al., 2006). Further tools were then identified from the research literature through systematic searches. These tools were then considered in terms of the feasibility and practicality of adopting them into clinical practice.

When this information had been gathered, the most feasible tools were considered in terms of their psychometric properties, with sensitivity >80% and specificity >60% needed before a tool could be recommended.

These results were presented to a consensus group of speech and language therapists working in stroke services across the conurbation and it was agreed that all stroke patients should be screened for communication problems.

The group agreed that it was not practical for a Speech and Language Therapist to assess all patients, therefore it was suggested that a brief communication screen be carried out as part of the initial assessment process. The criteria for selecting a tool set by the consensus group were:

- Easy to administer
- Can be administered by any member of the MDT
- Takes less than 5 minutes to administer

Following review of the available tools, the group undertook a pilot of a translation of the Language Screening Test (Flamand-Roze et al., 2011). Work is currently ongoing to develop an English-language version of this screen, which will be available in 2013.

It was also suggested that where the NIHSS screen was being used, the communication sections could be utilised as a communication screen. This represents a practical alternative, although further work is necessary to determine sensitivity and specificity of use of this tool as a communication screen. An online training programme for this tool is freely available, and can be accessed at:

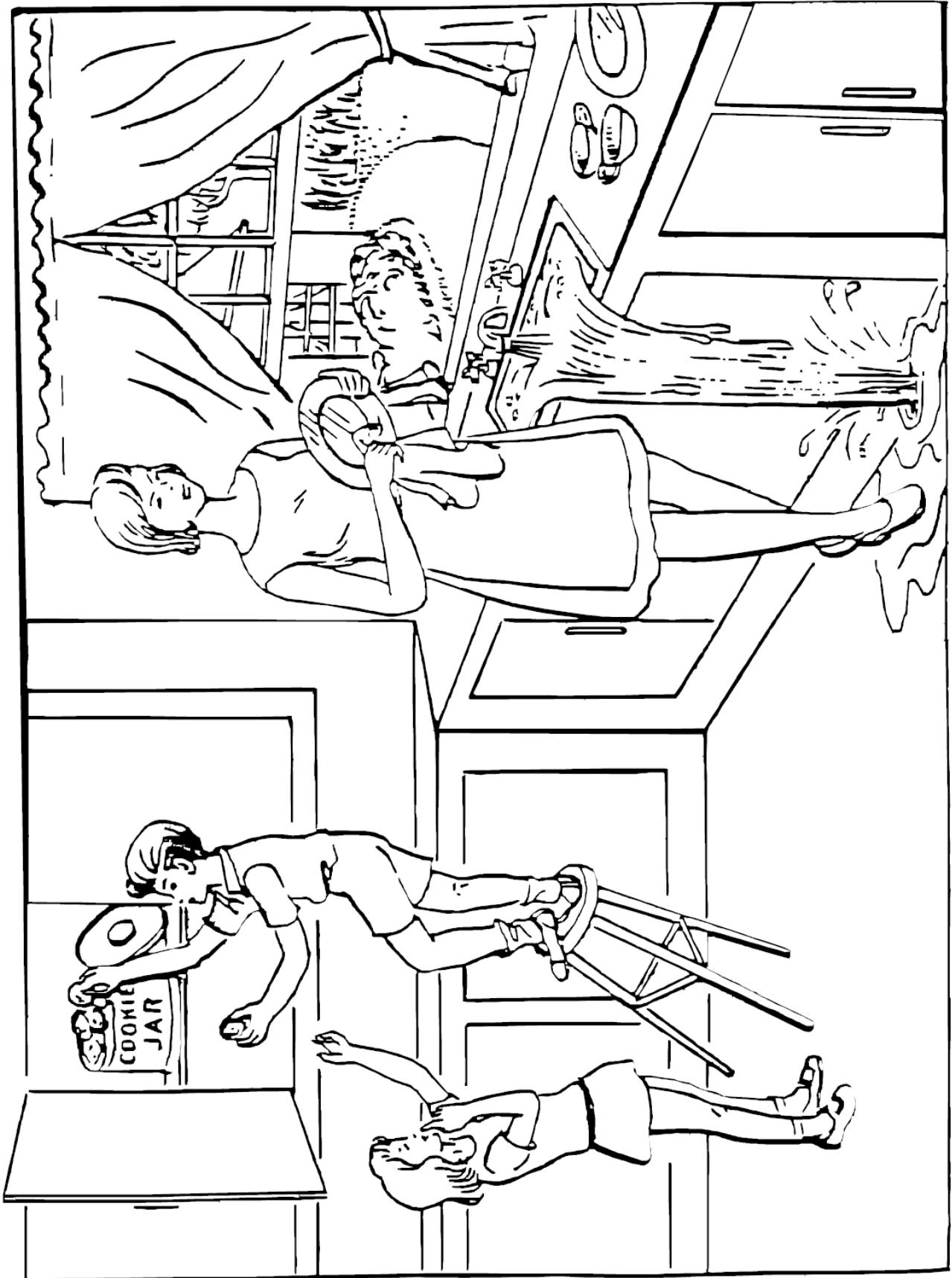
<http://nihss-english.trainingcampus.net/uas/modules/trees/windex.aspx>

## National Institutes of Health Stroke Scale (NIHSS) Communication sections (recommended for use as part of the NIHSS)

Record performance in each category after each subscale exam. Do not go back and change scores. Follow directions provided for each exam technique. Scores should reflect what the patient does, not what the clinician thinks the patient can do. The clinician should record answers while administering the exam and work quickly. Except where indicated, the patient should not be coached (i.e., repeated requests to patient to make a special effort).

<p><b>9. Best Language:</b> A great deal of information about comprehension will be obtained during the preceding sections of the examination. For this scale item, the patient is asked to describe what is happening in the attached picture, to name the items on the attached naming sheet and to read from the attached list of sentences. Comprehension is judged from responses here, as well as to all of the commands in the preceding general neurological exam. If visual loss interferes with the tests, ask the patient to identify objects placed in the hand, repeat, and produce speech. The intubated patient should be asked to write. The patient in a coma (item 1a=3) will automatically score 3 on this item. The examiner must choose a score for the patient with stupor or limited cooperation, but a score of 3 should be used only if the patient is mute and follows no one-step commands.</p>	<p>0 = <b>No aphasia</b>; normal.</p> <p>1 = <b>Mild-to-moderate aphasia</b>; some obvious loss of fluency or facility of comprehension, without significant limitation on ideas expressed or form of expression. Reduction of speech and/or comprehension, however, makes conversation about provided materials difficult or impossible. For example, in conversation about provided materials, examiner can identify picture or naming card content from patient's response.</p> <p>2 = <b>Severe aphasia</b>; all communication is through fragmentary expression; great need for inference, questioning and guessing by the listener. Range of information that can be exchanged is limited; listener carries burden of communication. Examiner cannot identify materials provided from patient response.</p> <p>3 = <b>Mute, global aphasia</b>; no usable speech or auditory comprehension.</p>
<p><b>10. Dysarthria:</b> If patient is thought to be normal, an adequate sample of speech must be obtained by asking patient to read or repeat words from the attached list. If the patient has severe aphasia, the clarity of articulation of spontaneous speech can be rated. Only if the patient is intubated or has other physical barriers to producing speech, the examiner should record the score as untestable (UN), and clearly write an explanation for this choice. Do not tell the patient why he or she is being tested.</p>	<p>0 = <b>Normal</b>.</p> <p>1 = <b>Mild-to-moderate dysarthria</b>; patient slurs at least some words and, at worst, can be understood with some difficulty.</p> <p>2 = <b>Severe dysarthria</b>; patient's speech is so slurred as to be unintelligible in the absence of or out of proportion to any dysphasia, or is mute/anarthric.</p> <p>UN = <b>Intubated or other physical barrier</b>, explain: _____</p>
<p><b>1c. LOC commands:</b> The patient is asked to open and close the eyes and then to grip and release the non-paretic hand. Substitute another one step command if the hands cannot be used. Credit is given if an unequivocal attempt is made but not completed due to weakness. If the patient does not respond to command, the task should be demonstrated to him or her (pantomime), and the result scored (i.e., follows none, one or two commands). Patients with trauma, amputation, or other physical impediments should be given suitable one-step commands. Only the first attempt is scored.</p>	<p>0 = Performs both tasks correctly.</p> <p>1 = Performs one task correctly.</p> <p>2 = Performs neither task correctly.</p>

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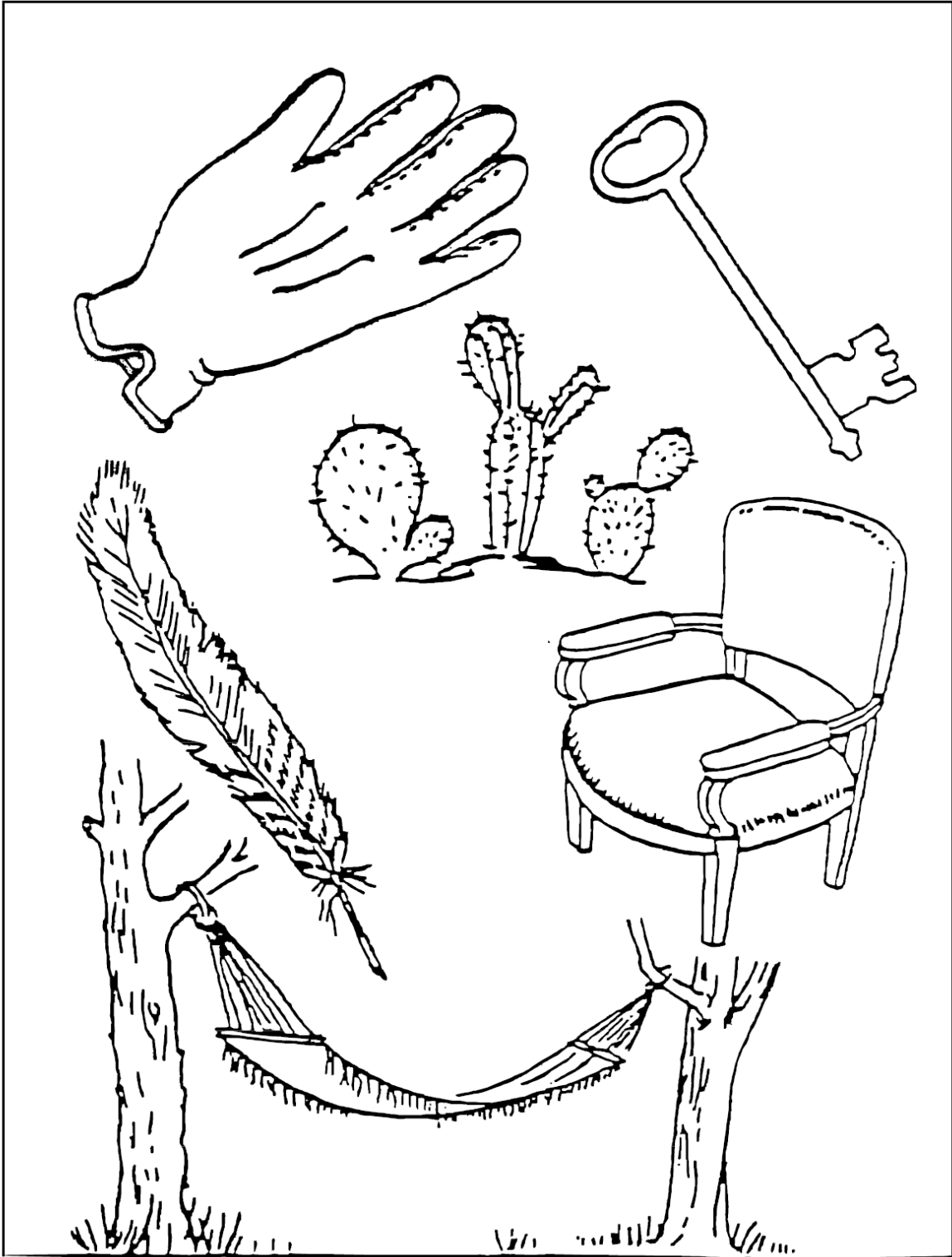
**You know how.**

**Down to earth.**

**I got home from work.**

**Near the table in the dining  
room.**

**They heard him speak on the  
radio last night.**





**MAMA**

**TIP – TOP**

**FIFTY – FIFTY**

**THANKS**

**HUCKLEBERRY**

**BASEBALL PLAYER**



## Mood Screening

### *What do the guidelines say?*

Government guidelines recommend that every patient entering stroke rehabilitation services should be screened for depression using a validated screening test (RCP, NICE, NAO). This should be completed within six weeks of diagnosis (NICE), with specified measures for individuals with cognitive and communication problems. It is best practice that patients are asked to self-report on their mood and this may be done by simplifying questionnaires to a yes/no format or using pictorial measures where communication difficulties complicate assessment, although pictorial measures or observational criteria alone should not be relied upon as the only means of diagnosis (RCP).

### *How were the tools selected?*

A systematic review of the literature was completed to identify tools validated for use with stroke patients. The psychometric properties of these tools were extracted and tool were selected if they had sensitivity >0.8 and specificity >0.6. The selected tools were then scored on feasibility to use in clinical practice, including cost to purchase the measure and additional record forms, time and training to administer. Considerations were also made for patients with communication and cognitive problems, which may complicate mood screening, leading to the development of the Greater Manchester Mood Tool Selection Algorithm, which was developed to help clinicians select appropriate tools for each patient.

### *How are the tools scored?*

The algorithm should be used to select the most appropriate mood screening tools from those available. Scores on any of the mood screens should be discussed within the MDT to decide if any action is needed in accordance with the local mood pathway.

### **SADQ-H10**

The Stroke Aphasic Depression Questionnaire (SADQ-H10; Lincoln et al., 2000) can be completed by any healthcare professional, but it may be best scored as a team within a multidisciplinary team meeting. The tool asks the rater to score the patient on ten behaviours, based on how many days in the past week the patient has exhibited that behaviour (every day, on 4-6 days, on 1-4 days, not at all). The scale should be completed weekly and scored out of 30 with a score of **6 or more points for two consecutive weeks** indicating mood problems.

### **GAD-7**

The GAD-7 (Spitzer et al., 1999) is marked on the same scale as the PHQ-9 and contains 7 further items. It should also be used as the basis for an interview. Points are added to give a score out of 21, with a score of **10 or more** indicating possible anxiety.



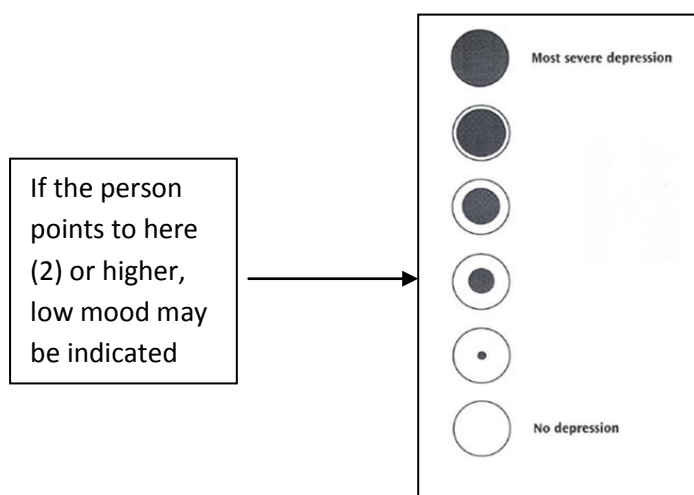
## PHQ-9

The PHQ-9 (Spitzer et al., 1999) involves asking the patient to rate how often they have experienced nine symptoms over the last two weeks. The PHQ-9 is best used as the basis for an interview with the patient to introduce the topic of mood problems after stroke; this allows further discussion of symptoms and clarification to be gained as to whether symptoms are reflective of low mood or if this is not the case (e.g. if the patient is experiencing difficulties in sleeping due to the noise in hospital). Items are scored based on the patient's responses as "not at all" (score 0), "several days" (score 1), "more than half the days" (score 2) and "nearly every day" (score 3). The points are then added together to give a score out of 27 by any healthcare professional, with a score of **11 or more** points indicating mood problems. As a rough guide, scores of 0-4 points indicate few or no symptoms, 5-14 indicate mild to moderate symptoms and scores of 15 or above indicate severe symptoms (House & Knapp, 2011).

*"I think if you're looking at somebody's mood, that isn't something that I think any of us would want to just make an assumption about, or treat somebody or not treat somebody on gut feeling, so to have a bit of an objective marker helps the team focus a little better."*

## DISCs

The DISCs (Turner-Stokes et al., 2005) can be administered by any healthcare professional. It consists of 6 circles to be shown to the patient representing different severities of depressed mood (see below left). There are standardised instructions to be read to the patient and to check understanding of the scale. The patient is asked "Which of these circles shows how depressed you feel today?" The bottom circle (no depression) is scored as 0, with the highest score being 5 (most severe depression). If the person scores **2 or more**, this may indicate mood problems.





## *What factors should be considered when using the tools in practice?*

The NICE Quality Standard for stroke recommends that screening for mood problems should occur within 6 weeks of diagnosis, however there is no consensus on the best time to screen for mood problems post-stroke. Although research has demonstrated that early identification and treatment of mood problems can improve outcomes, it is accepted that mood problems may increase as the patient's insight increases during the recovery process.

Although there is no consensus on the best time to screen, it has been recommended that first assessment may best be timed between 3 and 6 weeks post-stroke (House & Knapp, 2011) and this may be completed by the community stroke or early supported discharge team if available. However, it is important to ensure that responsibility is allocated for completion of the assessment, to ensure that patients experiencing difficulties are not missed.

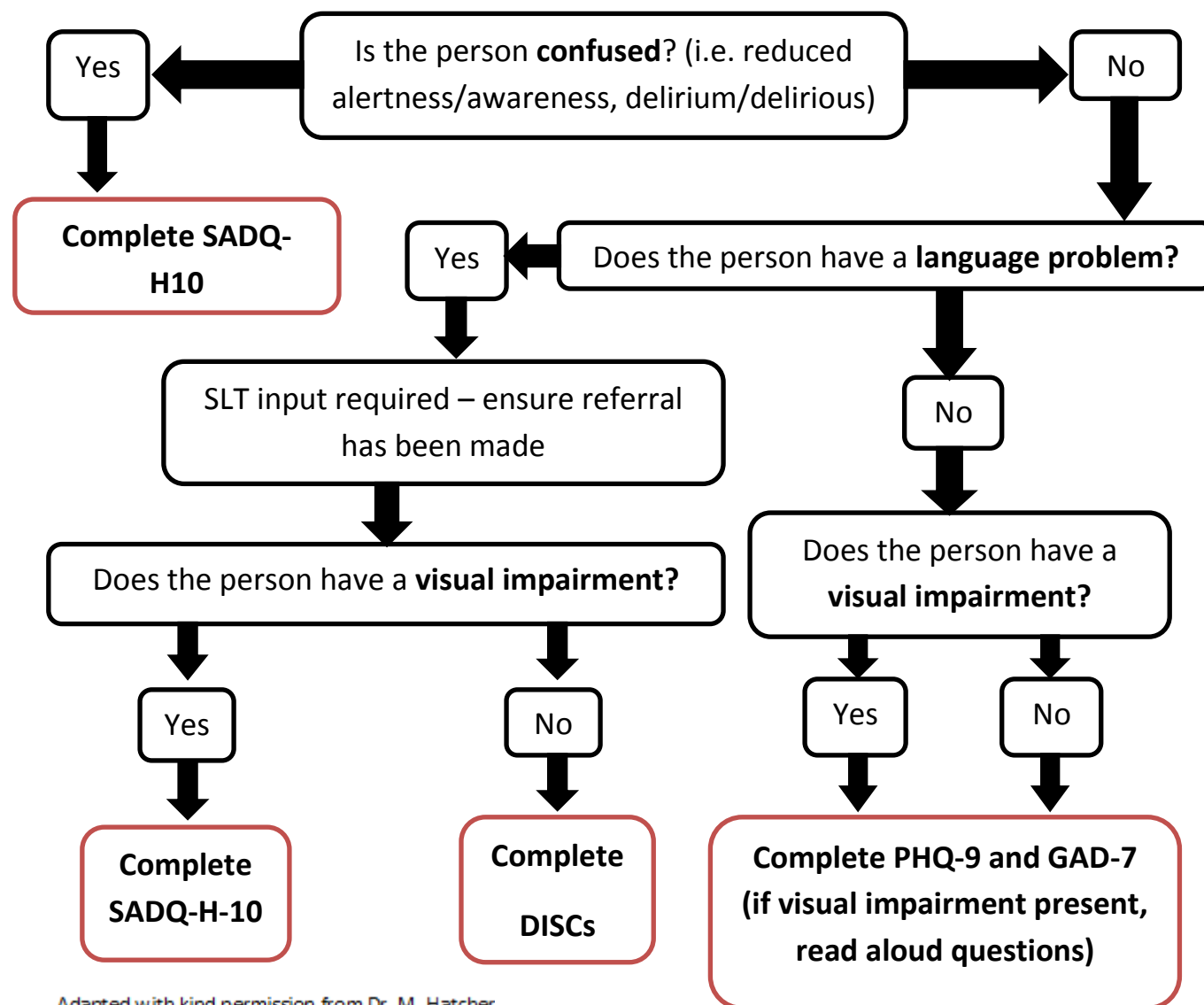
Where English is not the person's first language, a decision should be made as to whether difficulties with English language may interfere with the person's ability to reliably comprehend and respond to the mood screening questions.

The person administering the tool should decide as to whether it would be more appropriate to use a tool that is less dependent on language ability, however all attempts should be made to encourage self-report either through PHQ-9 or DISCs, and the observational tool (SADQ-H10) should be used only as a last resort.

The recommended tools can be completed by any member of the healthcare team, however it is important to ensure that the member of staff administering the measure is comfortable with talking with the patient about distress and can give a clear explanation to the patient about the reasons for the assessment. Following administration of the standardised tool, the member of staff should discuss with the patient their view of their current mood state and check for distress not asked for within the tool (House & Knapp, 2011). It is recommended that scores are discussed within the multi-disciplinary team and recommendations for treatment made as a result of these discussions, rather than on the basis of a score or individual opinion. The score on any tool should be used to inform treatment, however should not be considered as the sole basis for diagnosis of mood problems.

The mood screening tools should be repeated as and when appropriate to monitor changes. If used, the SADQ-H10 should be scored in two consecutive weeks.

## Greater Manchester Algorithm for Selecting Appropriate Mood Screening Measures for Patients with Stroke



Adapted with kind permission from Dr. M. Hatcher of Winchester and Eastleigh Healthcare Trust

Assessment Date:	Use algorithm to select appropriate mood screening tool				
	i.e. 24/03/11				
Mood measure used	DISCs				
Score/response	5				
Classification of score	High				
Ensure record of assessment is documented in the medical notes and discussed within MDT					





## The Stroke Aphasic Depression Questionnaire (SADQ-H10)

Please indicate on how many days of the last seven the person has shown the following behaviours

**1. Did he/she have weeping spells this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**2. Did he/she have restless disturbed sleep this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**3. Did he/she avoid eye contact when you spoke to him/her?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**4. Did he/she burst into tears this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**5. Did he/she complain of aches and pains this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**6. Did he/she get angry this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**7. Did he/she refuse to participate in social activities this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**8. Was he/she restless and fidgety this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**9. Did he/she sit without doing anything this week?**

Every day	On 4-6 days	On 1-4 days	Not at all
3	2	1	0

**10. Did he/she keep him/herself occupied during the day?**

Every day	On 4-6 days	On 1-4 days	Not at all
0	1	2	3

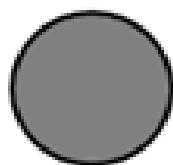
© University of Nottingham 2007

Lincoln, N. B., Sutcliffe, L. M., & Unsworth, G. (2000). Validation of the Stroke Aphasic Depression Questionnaire (SADQ) for use with patients in hospital. *Clinical Neuropsychological Assessment, 1*, 88–96.  
<http://www.nottingham.ac.uk/iwho/research/publishedassessments.aspx>

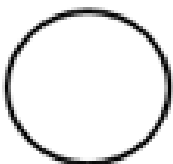
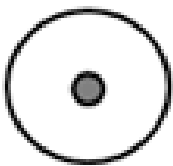
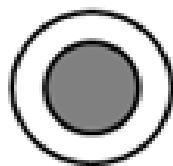


## Depression Intensity Scale Circles (DISCs)

### The Depression Intensity Scale Circles (DISCs)



**Most severe  
depression**



**No Depression**

Turner-Stokes, L., Kalmus, M., Hirani, D. & Clegg, F. (2005). The Depression Intensity Scale Circles (DISCs): a first evaluation of a simple assessment tool for depression in the context of brain injury. *J Neurol Neurosurg Psychiatry*, 76, 1273-1278



## Depression Intensity Scale Circles (DISCs) – Instructions for administration

The DISCs is displayed on a laminated card.

- Each circle is 2cm in diameter.
- The scale measures 15 cms from the centre of the bottom circle to the centre of the top circle.
- A pictorial version also available

### Instructions for administration:

Say to the patient:

- This is a scale to measure depression  
Please point to each of the circles in turn to make sure you can see them all.

**[Continue only if satisfactorily accomplished]**

- The grey circles show how depressed you feel.

**[Indicate the clear circle at the bottom]**

- The bottom circle shows no depression.

**[Indicate the fully shaded circle at the top]**

- The top circle shows depression as bad as it can be.

**[Point at each circle in ascending order]**

- As you go from the bottom circle to the top, you can see that depression is becoming more and more severe.
- Which of these circles shows how depressed you feel today?

### To the administrator:

In your opinion was the person able to understand this scale?

Yes                  No

Comment:

Turner-Stokes, L., Kalmus, M., Hirani, D. & Clegg, F. (2005). The Depression Intensity Scale Circles (DISCs): a first evaluation of a simple assessment tool for depression in the context of brain injury. *J Neurol Neurosurg Psychiatry*, 76, 1273-1278



## Patient Health Questionnaire (PHQ-9)

	Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3
3	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4	Feeling tired or having little energy	0	1	2	3
5	Poor appetite or overeating	0	1	2	3
6	Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8	Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9	Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
	Total scores				

Add columns \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

Total score \_\_\_\_\_

PHQ-9 is adapted from PRIME MD TODAY, developed by Drs Robert L. Spitzer, Janet B. W. Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer Inc. For research information, contact Dr Spitzer at [ris8@columbia.edu](mailto:ris8@columbia.edu). Use of the PHQ-9 may only be made in accordance with the Terms of Use available at <http://www.pfizer.com>. Copyright © 1999 Pfizer Inc. All rights reserved. PRIME MD TODAY is a trademark of Pfizer Inc.



## GAD-7

Over the last 2 weeks, how often have you been bothered by any of the following problems?		Not at all	Several days	More than half the days	Nearly every day
1	Feeling nervous, anxious or on edge	0	1	2	3
2	Not being able to stop or control worrying	0	1	2	3
3	Worrying too much about different things	0	1	2	3
4	Trouble relaxing	0	1	2	3
5	Being so restless that it is hard to sit still	0	1	2	3
6	Becoming easily annoyed or irritable	0	1	2	3
7	Feeling afraid as if something awful might happen	0	1	2	3

Add columns \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

Total score \_\_\_\_\_

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.



## Cognitive Screening

### *What do the guidelines say?*

Government guidelines recommend that every patient entering stroke rehabilitation services should be screened for cognitive problems using a validated standardised measure (RCP, NICE, NAO). This should be done within six weeks of diagnosis (NICE).

### *How was the tool selected?*

A systematic review of the literature was completed to identify tools validated for use with stroke patients. The psychometric properties of these tools were extracted and tool were selected if they had sensitivity >0.8 and specificity >0.6. The selected tools were then scored on feasibility to use in clinical practice, including cost to purchase the measure and additional record forms, time and training to administer.

The Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2005) was identified as a potential tool and Occupational Therapists from across Greater Manchester trialled the measure in their clinical practice.

Feedback from this pilot was mainly positive, with the MoCA taking an average of 21 minutes to administer and score, a time considered acceptable to the therapists involved.

### *How can the tool be used in practice?*

Two alternative versions of the MoCA are available via the website, which may help to reduce practice effects if the test is repeated to assess effects of an intervention. A version for patients with visual impairment is also available.

*“Using the MoCA has helped us to identify patients who might not show any cognitive impairment through functional activities so they might be able to, say get themselves washed and dressed or make a hot drink, and they look as though it’s absolutely fine, but if you do the MoCA you might find that they might have memory or executive problems that you haven’t initially picked up on.” OT*









## Montreal Cognitive Assessment (MoCA): Administration and Scoring Instructions

The Montreal Cognitive Assessment (MoCA) was designed as a rapid screening instrument for mild cognitive dysfunction. It assesses different cognitive domains: attention and concentration, executive functions, memory, language, visuoconstructional skills, conceptual thinking, calculations, and orientation. Time to administer the MoCA is approximately 10 minutes. The total possible score is 30 points; a score of 26 or above is considered normal.

### 1. Alternating Trail Making:

Administration: The examiner instructs the subject: *“Please draw a line, going from a number to a letter in ascending order. Begin here [point to (1)] and draw a line from 1 then to A then to 2 and so on. End here [point to (E)].”*

Scoring: Allocate one point if the subject successfully draws the following pattern: 1 – A – 2 – B – 3 – C – 4 – D – 5 – E, without drawing any lines that cross. Any error that is not immediately self-corrected earns a score of 0.

### 2. Visuoconstructional Skills (Cube):

Administration: The examiner gives the following instructions, pointing to the **cube**: *“Copy this drawing as accurately as you can, in the space below.”*

Scoring: One point is allocated for a correctly executed drawing.

- Drawing must be three-dimensional
- All lines are drawn
- No line is added
- Lines are relatively parallel and their length is similar (rectangular prisms are accepted)

A point is not assigned if any of the above-criteria are not met.

### 3. Visuoconstructional Skills (Clock):

Administration: Indicate the right third of the space and give the following instructions: *“Draw a **clock**. Put in all the numbers and set the time to 10 past 11.”*

Scoring: One point is allocated for each of the following three criteria:

- Contour (1 pt.): the clock face must be a circle with only minor distortion acceptable (e.g., slight imperfection on closing the circle);
- Numbers (1 pt.): all clock numbers must be present with no additional numbers; numbers must be in the correct order and placed in the approximate quadrants on the clock face; Roman numerals are acceptable; numbers can be placed outside the circle contour;
- Hands (1 pt.); there must be two hands jointly indicating the correct time; the hour hand must be clearly shorter than the minute hand; hands must be centred within the clock face with their junction close to the clock centre.

A point is not assigned for a given element if any of the above-criteria are not met.



## 4. **Naming:**

**Administration:** Beginning on the left, point to each figure and say: *“Tell me the name of this animal.”*

**Scoring:** One point each is given for the following responses: (a) lion (2) rhinoceros or rhino (3) camel or dromedary.

## 5. **Memory**

**Administration:** The examiner reads a list of 5 words at a rate of one per second, giving the following instructions: *“This is a memory test. I am going to read a list of words that you will have to remember now and later on. Listen carefully. When I am through, tell me as many words as you can remember. It doesn’t matter in what order you say them.”* Mark a check in the allocated space for each word the subject produces on this first trial. When the subject indicates that (s)he has finished (has recalled all words), or can recall no more words, read the list a second time with the following instructions: *“I am going to read the same list for a second time. Try to remember and tell me as many words as you can, including words you said the first time.”* Put a check in the allocated space for each word the subject recalls after the second trial.

At the end of the second trial, inform the subject that (s)he will be asked to recall these words again by saying, *“I will ask you to recall those words again at the end of the test.”*

## 6. **Attention:**

**Forward Digit Span: Administration:** Give the following instruction: *“I am going to say some numbers and when I am through, repeat them to me exactly as I said them.”* Read the five number sequence at a rate of one digit per second.

**Backward Digit Span: Administration:** Give the following instruction: *“Now I am going to say some more numbers, but when I am through you must repeat them to me in the backwards order.”* Read the three number sequence at a rate of one digit per second.

**Scoring:** Allocate one point for each sequence correctly repeated, (*N.B.:* the correct response for the backwards trial is 2-4-7).

**Vigilance: Administration:** The examiner reads the list of letters at a rate of one per second, after giving the following instruction: *“I am going to read a sequence of letters. Every time I say the letter A, tap your hand once. If I say a different letter, do not tap your hand.”*

**Scoring:** Give one point if there is zero to one errors (an error is a tap on a wrong letter or a failure to tap on letter A).



**Serial 7s: Administration:** The examiner gives the following instruction: *“Now, I will ask you to count by subtracting seven from 100, and then, keep subtracting seven from your answer until I tell you to stop.”* Give this instruction twice if necessary.

**Scoring:** This item is scored out of 3 points. Give no (0) points for no correct subtractions, 1 point for one correct subtraction, 2 points for two-to-three correct subtractions, and 3 points if the participant successfully makes four or five correct subtractions. Count each correct subtraction of 7 beginning at 100. Each subtraction is evaluated independently; that is, if the participant responds with an incorrect number but continues to correctly subtract 7 from it, give a point for each correct subtraction. For example, a participant may respond “92 – 85 – 78 – 71 – 64” where the “92” is incorrect, but all subsequent numbers are subtracted correctly. This is one error and the item would be given a score of 3.

## 7. **Sentence repetition:**

**Administration:** The examiner gives the following instructions: *“I am going to read you a sentence. Repeat it after me, exactly as I say it [pause]: **I only know that John is the one to help today.**”* Following the response, say: *“Now I am going to read you another sentence. Repeat it after me, exactly as I say it [pause]: **The cat always hid under the couch when dogs were in the room.**”*

**Scoring:** Allocate 1 point for each sentence correctly repeated. Repetition must be exact. Be alert for errors that are omissions (e.g., omitting “only,” “always”) and substitutions/additions (e.g., John is the one who helped today”; substituting “hides” for “hid,” altering plurals, etc.).

## 8. **Verbal fluency:**

**Administration:** The examiner gives the following instruction: *“Tell me as many words as you can think of that begin with a certain letter of the alphabet that I will tell you in a moment. You can say any kind of word you want, except for proper nouns (like Bob or Boston), numbers, or words that begin with the same sound but have a different suffix, for example, love, lover, loving. I will tell you to stop after one minute. Are you ready? [Pause] Now, tell me as many words as you can think of that begin with the letter F. [time for 60 sec]. Stop.”*

**Scoring:** Allocate one point if the subject generates 11 words or more in 60 sec. Record the subject’s response in the bottom or side margins.

## 9. **Abstraction:**

**Administration:** The examiner asks the subject to explain what each pair of words has in common, starting with the example: *“Tell me how an orange and a banana are alike.”* If the subject answers in a concrete manner, then say only one additional time: *“Tell me another way in which those items are alike.”* If the subject does not give the appropriate response (*fruit*), say, *“Yes, and they are also both fruit.”* Do not give any additional instructions or clarification. After the practice trial, say: *“Now, tell me how a train and a bicycle are alike.”* Following the response, administer the second trial, saying: *“Now tell me how a ruler and a watch are alike.”* Do not give any additional instructions or prompts.



**Scoring:** Only the last two item pairs are scored. Give 1 point to each item pair correctly answered. The following responses are acceptable:

Train-bicycle = means of transportation, means of travelling, you take trips in both:

Ruler-watch = measuring instruments, used to measure.

The following responses are **not** acceptable: Train-bicycle = they have wheels; Ruler-watch = they have numbers.

## 10. Delayed recall:

**Administration:** The examiner gives the following instruction: *“I read some words to you earlier, which I asked you to remember. Tell me as many of those words as you can remember.”* Make a check mark ( ✓ ) for each of the words correctly recalled spontaneously without any cues, in the allocated space.

**Scoring:** Allocate 1 point for each word recalled freely without any cues.

### **Optional:**

Following the delayed free recall trial, prompt the subject with the semantic category cue provided below for any word not recalled. Make a check mark ( ✓ ) in the allocated space if the subject remembered the word with the help of a category or multiple-choice cue. Prompt all non-recalled words in this manner. If the subject does not recall the word after the category cue, give him/her a multiple choice trial, using the following example instruction, *“Which of the following words do you think it was, NOSE, FACE, or HAND?”*

Use the following category and/or multiple-choice cues for each word, when appropriate:

FACE:	<u>category cue:</u> part of the body	<u>multiple choice:</u> nose, face, hand
VELVET:	<u>category cue:</u> type of fabric	<u>multiple choice:</u> denim, cotton, velvet
CHURCH:	<u>category cue:</u> type of building	<u>multiple choice:</u> church, school, hospital
DAISY:	<u>category cue:</u> type of flower	<u>multiple choice:</u> rose, daisy, tulip
RED:	<u>category cue:</u> a colour	<u>multiple choice:</u> red, blue, green

**Scoring:** **No points are allocated for words recalled with a cue.** A cue is used for clinical information purposes only and can give the test interpreter additional information about the type of memory disorder. For memory deficits due to retrieval failures, performance can be improved with a cue. For memory deficits due to encoding failures, performance does not improve with a cue.

## 11. Orientation:

**Administration:** The examiner gives the following instructions: *“Tell me the date today.”* If the subject does not give a complete answer, then prompt accordingly by saying: *“Tell me the [year, month, exact date, and day of the week].”* Then say: *“Now, tell me the name of this place, and which city it is in.”*

**Scoring:** Give one point for each item correctly answered. The subject must tell the exact date and the exact place (name of hospital, clinic, office). No points are allocated if subject makes an error of one day for the day and date.

**TOTAL SCORE:** Sum all subscores listed on the right-hand side. Add one point for an individual who has 12 years or fewer of formal education, for a possible maximum of 30 points. A final total score of 26 and above is considered normal.



## Measuring functional outcomes

### Independence in Activities of Daily Living – Barthel Index

#### *What do the guidelines say?*

National guidelines recommend that patients who have had a stroke should be formally assessed for their safety and independence in activities of daily living (ADL), using a standardised tool, preferably the Barthel Activities of Daily Living Index (RCP).

#### *How can the tool be used in practice?*

The Barthel Index is the most widely known and used test of independence in ADL (Wade & Collin 1988; Collin et al 1988) and the preferred measure of ADL according to RCP. The Barthel Index should be completed in relation to what the patient does day-to-day on the ward, **not** what they can achieve in therapy sessions. The main aim is to establish the degree of independence from help, physical or verbal however minor or for whatever reason. If a patient's performance of an activity is variable, they should be scored at the lower level, in order that subsequent discharge planning reflects this variability. The use of aids to be independent is allowed. Supervision for any reason means the patient is not independent. Observation is useful but direct testing is unnecessary. Usually performance over the last 1-2 days is considered. The middle categories imply that the patient supplies at least 50% of the effort. There is a maximum score of 20.



It is recommended that the Barthel Index is scored within 72 hours of admission to stroke rehabilitation, as well as weekly as part of the multidisciplinary team meeting to monitor patient progress, and upon discharge, with scores transferred to the community team involved in patient follow-up. A premorbid score can be obtained by asking the patient and/or their carers and family what they were able to do before the stroke.

*"I think the Barthel certainly gives you guidance really, because you can see maybe they've been 7 for the past three weeks, so even though in therapy they might be improving in certain things, their overall dependency isn't improving. Or it is improving, and so you have bench-marking from the weeks before." Ward Manager*



## The Barthel Index

Name: \_\_\_\_\_ NHS No: \_\_\_\_\_

D.O.B: \_\_\_\_\_

Date					
<b>Bowels</b>					
0 = incontinent (or needs to be given enemas): 1 = occasional accident (once a week): 2 = continent	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
<b>Bladder</b>					
0 = incontinent or catheterised and unable to manage alone: 1 = occasional accident (maximum once per 24 hours): 2 = continent	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
<b>Grooming</b>					
0 = needs help with personal care: 1 = independent (face, hair, teeth, shaving – implements provided)	0	0	0	0	0
	1	1	1	1	1
<b>Toilet Use</b>					
0 = dependent: 1 = needs some help but can do something alone: 2 = independent (on and off, dressing, wiping)	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
<b>Feeding</b>					
0 = unable: 1 = needs help cutting, spreading butter etc: 2 = independent	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
<b>Transfers (bed to chair and back)</b>					
0 = unable, no sitting balance: 1 = major help (1 or 2 people, physical), can sit: 2 = minor help (verbal or physical): 3 = independent	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
<b>Mobility</b>					
0 = immobile: 1 = wheelchair independent, including corners: 2 = Walks with the help of 1 person (verbal or physical): 3 = independent (but may use aid; for example stick)	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
<b>Dressing</b>					
0 = dependent: 1 = needs help but can do about half unaided: 2 = independent (including buttons/zips/laces, etc.)	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
<b>Stairs</b>					
0 = unable: 1 = needs help (verbal, physical or carrying aid): 2 = independent	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
<b>Bathing</b>					
0 = dependent: 1 = independent	0	0	0	0	0
	1	1	1	1	1
<b>Total Score (out of 20)</b>					





## Barthel Index Scoring Criteria

### Scoring Criteria

#### **Bowels** (in the last week)

- 0 = incontinent or needs enema
- 1 = occasional accident (once per week)
- 2 = continent

#### **Bladder** (in the last week)

- 0 = incontinent, or catheterised or unable to manage alone
- 1 = occasional accident (within last 24hrs)
- 2 = continent, including complete self-management of catheterisation

**Grooming** (within last 24hrs) This refers to personal hygiene: cleaning teeth, fitting false teeth, combing hair, shaving, washing face. Implements can be supplied by a helper.

- 0 = Needs help with personal care
- 1 = Independent

**Toilet Use** includes reaching the toilet/commode, undressing, cleaning self, dressing and leaving

- 0 = dependent
- 1 = Needs some help but can do some alone
- 2 = Independent

**Feeding** involves eating any normal food (not restricted to soft food). Food can be cooked and served by others but not cut up

- 0 = Unable
- 1 = Needs help cutting, spreading, etc, but can feed him/herself
- 2 = Independent

#### **Transfer (bed to chair and back)**

- 0 = Unable, no sitting balance, two people to help
- 1 = Major help – can sit but needs physical assistance of 1 strong/skilled helper, 2 'normal' people
- 2 = Minor help – can be assisted easily by one person (verbally or physically)
- 3 = Independent, may use an aid.

**Mobility** refers to indoor mobility around the house or ward. An aid may be used. If using a wheelchair, corners and doors must be negotiated unaided.

- 0 = Immobile
- 1 = Wheelchair independent, including steering and corners/ doors
- 2 = Walks with help of 1 (verbal or physical)
- 3 = Independent although may use an aid

#### **Dressing**

- 0 = Dependent
- 1 = Help with buttons, zips etc. but can put on some clothes unaided
- 2 = Independent - including buttons, zips, laces etc. Can select and put all clothes on/off although they may be adapted.

**Stairs** To be independent the patient must carry any walking aids.

- 0 = Unable
- 1 = Needs help (verbal, physical, with aid)
- 2 = Independent

#### **Bath/Shower**

- 0 = Dependent
- 1 = Independent – including getting in and out and washing self. If using a shower, the patient must be unsupervised and unaided.





## Monitoring communication and swallowing abilities over time – Therapy Outcome Measures

Whilst the Barthel Index provides a good measure of independence in activities of daily living after stroke, it does not take into account difficulties in communication, which are common post-stroke. The Therapy Outcome Measures (TOMs; Enderby et al., 2006) for communication difficulties allow for measurement of impairments and functional activities and can be scored on a weekly basis for appropriate patients to track progress. There are also measures for dysphagia, which help to monitor progress in swallowing.

Measures of participation and well-being/distress are also available (see Enderby, P., John, A. & Petheram, B. (2006). *Therapy Outcome Measures for Rehabilitation Professionals* (2<sup>nd</sup> Ed). Wiley: UK).



To use the TOMs, identify the descriptor which best fits the patient. It is not necessary for the patient to have each feature mentioned. 0.5 can be used to indicate if the patient is slightly better or worse than an indicator.

*“It can be a benefit as it’s an actual figure. Rather than saying they’ve improved, I think to discuss it as a figure helps to do it within the MDT, so for a speech therapist to discuss the level of aphasia between other speech therapists, it might be quite obvious how someone has improved, but actually to another MDT member that might not be so clear. Whereas if you discuss it in TOMs and they go up or they go down, I think it helps to make it a bit clearer how that patient is progressing.”* Speech & Language Therapist



## Therapy Outcome Measures (Dysphasia/Aphasia)

### *Impairment*

**0 Aphasia affecting all modalities:** Auditory and reading comprehension inconsistent even at one keyword. No meaningful expression

**1 Severe dysphasia/aphasia:** Auditory and/or reading comprehension is consistent at one keyword level. Occasionally understand and expresses limited amount

**2 Severe/Moderate dysphasia/aphasia:** Auditory and/or reading comprehension consistent at a minimum of two or three keyword level. Some limited verbal and/or written expression used appropriately and purposefully

**3 Moderate dysphasia/aphasia:** Constant auditory and/or reading comprehension for simple sentences or structures. Inconsistent with complex commands and structures. Consistently reduced verbal and/or written language structure and vocabulary. May have a specific more severe difficulty in one modality.

**4 Mild dysphasia/aphasia:** Occasional difficulties present in auditory and/or reading comprehension and in verbal and/or written expression

**5 No dysphasia/aphasia**

### *Activity*

**0** Unable to communicate in any way. No effective communication. No interaction.

**1** Occasionally able to make basic needs known with familiar persons or trained listeners in familiar contexts. Minimal communication with maximal assistance

**2** Limited functional communication. Consistently able to make basic needs/conversation understood but is heavily dependent on cues and context. Communicates better with trained listener or family members or in familiar settings. Frequent repetition required. Maintains meaningful interaction related to here and now

**3** Consistently able to make needs known but can sometimes convey more information than this. Some inconsistency in unfamiliar settings. Is less dependent for intelligibility on cues and context. Occasional repetition required. Communicates beyond here/now with familiar persons; needs cues and prompting

**4** Can be understood most of the time by any listener despite communication irregularities. Holds conversation; requires occasional prompts particularly with a wider range of people

**5** Communicates effectively in all situations

From Enderby, P., John, A. & Petheram, B. (2006). *Therapy Outcome Measures for Rehabilitation Professionals (2<sup>nd</sup> Ed)*. Wiley: UK

## Therapy Outcome Measures (Dysphagia)

### *Impairment*

**0 Aphagia:** Not safe to swallow due to cognitive status/no bolus control/aspiration/absence of oral/pharyngeal swallow. Clinical signs of aspiration. No cough reflex. May need regular suction.

**1 Severe dysphagia:** Weak oral movements/no bolus control/inadequate/inconsistent swallow reflex. High risk of aspiration.

**2 Severe/Moderate dysphagia:** Cough/swallow reflexes evident but abnormal or delayed. Uncoordinated oral movements. Risk of aspiration.

**3 Moderate dysphagia:** Swallow and cough reflex present. May have poor oral control. At risk of occasional aspiration.

**4 Mild oral/pharyngeal dysphagia:** Incoordination but no clinical evidence of aspiration

**5 No dysphagia/aphagia**

### *Activity*

**0** Non-oral feeding to meet all hydration and nutritional needs. Unsafe to take practice amounts of modified consistencies and unable to use compensatory strategies. Unable to manage secretions.

**1** Non-oral feeding to meet most hydration and nutritional needs. Variable ability to take practice amounts of modified consistencies using compensatory strategies. Some management of secretions. Needs experienced supervision.

**2** Non-oral feeding/supplements needed to meet hydration and nutritional needs. Consistently able to take practice amount of modified consistencies using compensatory strategies. Needs experienced supervision.

**3** Consistently able to take modified consistencies using compensatory strategies. Needs some supervision, may require feeding supplements, may eat extremely slowly.

**4** Although eating and drinking is abnormal, it is good enough to meet nutritional requirements. No supervision required. No alternative or supplement feeding. May avoid certain foods, drinks, or eating situations.

**5** Functionally eating and drinking a normal diet.



## Therapy Outcome Measures (Dysarthria)

### *Impairment*

**0 Severe dysarthria:** severe persistent articulatory/prosodic impairment. Inability to produce any distinguishable speech sounds. No oral motor control. No respiratory support for speech.

**1 Severe/moderate dysarthria:** with consistent articulatory/prosodic impairment. Mostly open vowel sounds with some consonant approximations/severe festination of speech. Extremely effortful or slow speech; only 1 or 2 words per breath. Severely limited motor control.

**2 Moderate dysarthria:** with frequent episodes of articulatory/prosodic impairment. Most consonants attempted but poorly represented acoustically/moderate festination. Very slow speech; manages up to 4 words per breath. Moderate limitation oral motor control.

**3 Moderate/mild dysarthria:** consistent omission/articulation of consonants. Variability of speed. Mild limitation of oral motor control or prosodic impairment.

**4 Mild dysarthria:** slight or occasional omission/mispronunciation of consonants. Slight or occasional difficulty with oral motor control/prosody or respiratory support.

**5 No impairment.**

### *Activity*

**0** Unable to communicate in any way. No effective communication. No interaction.

**1** Occasionally able to make basic needs known with familiar persons or trained listeners in familiar contexts. Minimal communication with maximal assistance.

**2** Limited functional communication. Consistently able to make basic needs/conversation understood but is heavily dependent on cues and context. Communicates better with trained listener or family members or in familiar settings. Frequent repetition required. Maintained meaningful interaction related to here and now.

**3** Consistently able to make needs known but can sometimes convey more information than this. Some inconsistency in unfamiliar settings. Is less dependent for intelligibility on cues and context. Occasional repetition required. Communicates beyond here/now with familiar persons, needs some cues and prompting.

**4** Can be understood most of the time by any listener despite communication irregularities. Holds conversation; requires special consideration, for example, patience, time, attention, especially with a wider range of people.

**5** Communicates effectively in all situations.

From Enderby, P., John, A. & Petheram, B. (2006). *Therapy Outcome Measures for Rehabilitation Professionals (2<sup>nd</sup> Ed)*. Wiley: UK



## How to run an effective Stroke Multi-Disciplinary Team meeting

### Guidelines

The RCP Clinical Guideline for Stroke (3<sup>rd</sup> Ed.) states that a stroke service should have a co-ordinated multi-disciplinary team that meets at least once a week for the interchange of information about patients. The following guidance for running an MDT meeting has been developed through the observation of meetings across Greater Manchester and through gaining feedback from staff about what works well in these meetings. National guidance documents and recommendations from the research literature have also been incorporated.

### Aims and purpose of the meeting

The multidisciplinary team should meet weekly to:

- Develop a shared understanding of the patient's problems
- Plan and review multi-disciplinary patient goals
- Monitor the progress of the patient throughout the rehabilitation process
- Make quick and effective joint decisions about patient care and discharge plans

The meeting should also give the team the opportunity to:

- Facilitate greater understanding of a patient's problems through discussion with other professionals with specialist expertise
- Facilitate 24 hour rehabilitation and maintain consistency of care among the team, e.g. for therapists to hand over to nursing staff information on strategies and therapeutic activity to carry on outside of therapy time
- Identify and set actions for team members to complete during the coming week
- Ensure identified actions have been completed, e.g. referrals, assessments, arranging meetings and medical investigations

### Goal-setting

Multidisciplinary goals should be planned and reviewed in conjunction with the patient and their family, and this may take place in informal goal-setting or family meetings outside of the main MDT meeting. Goals should take into account the patient's needs and aspirations, and progress towards both short- and long-term goals should be reviewed within the formal MDT meeting.

### Venue

The MDT meeting should be held in a room, which is large enough for the team to comfortably congregate in, with space for a notes trolley if this is required. All members of the team should have a seat and be able to see and hear each other. The room should be in a suitably quiet and cool environment and all attempts should be made to protect patient confidentiality, e.g. closing windows and doors to prevent others listening to the discussion.

Interruptions to MDT meetings are common and it should be ensured that other staff on the unit are aware that the meeting should be interrupted only in the event of an emergency. It may be helpful to put a sign on the meeting room door. It can also be useful to hold the MDT meeting in a room off the main ward where possible to prevent interruptions.







## Attendance

MDT meetings should be regarded as a vital aspect of patient care and prioritised as such by all members of the team involved in patient care. The start and finish times of the meeting should be well-publicised among the team and every effort should be made by members of the team to keep to these times, to avoid wasting the clinical time of other team members. If a member of the team does not attend on time, the meeting should go ahead without them. It may help to schedule the meeting at the beginning of the day or immediately after lunch, so that team members are not in the middle of other clinical tasks.

The MDT meeting should be attended by all those involved in patients' care. This should include:

- Doctor
- Nurse
- Occupational Therapist
- Physiotherapist
- Speech and Language Therapist
- Social Worker
- Anyone else who may be involved in patient care or discharge planning, e.g. clinical psychologist or counsellor, dietician, case manager, discharge facilitator, transfer of care nurse, Stroke Association Information, Advice and Support Service

Attendance should be monitored by recording the disciplines present at each meeting within the MDT documentation. If members of the same discipline fail to attend three consecutive MDT meetings, management should be alerted by the chair and steps should be taken to resolve any issues that are preventing attendance.

Team members attending the MDT meeting should ideally have knowledge of the patients to be discussed, however where this is not possible for all patients (due to sharing of workload), detailed notes from a colleague should be taken to the meeting. It is not suggested that all members of every discipline attend the whole MDT meeting and one clinician may attend to represent all members of their discipline. However, if one member of a discipline is attending the MDT meeting on behalf of their team, they should ensure that they receive detailed notes from other members of their team to feed back to the MDT and they will also be responsible for feeding back information about decisions made at the MDT meeting to those members of their team unable to attend.

If a member of the team is available only for part of the meeting, it may be advisable to alter the order of patients to be discussed, e.g. should a speech therapist be available only at the beginning of the meeting, patients with speech problems should be discussed first.

*"The MDT is more fluid and I think that it's a really good way to discuss those patients and everybody gets a platform as well, so I think it's really good that it's not 'what's the speech therapist got to say?' it's 'what's the patient's difficulties and what can we input from each profession.' I think that works really well with it."*  
**Speech & Language Therapist**





Alternatively, it may be useful to circulate an agenda prior to the meeting confirming the times at which each patient will be discussed to allow professionals to attend only for the patients whose care they are involved in. This may be done through the allocation of a 5 minute slot per patient and it is the responsibility of the chair to ensure the discussions run to time.

### **Preparation**

Team members should be aware of the information they are likely to need during the MDT meeting and should prepare this information beforehand to allow quick and effective feedback to the team. This is particularly important for actions set from the previous week and allocated to specific people, all attempts should be made to ascertain whether these actions have been completed before the meeting. This may be in the form of a detailed handover sheet or notebook. Should members of the team be unable to attend the meeting, they should provide a detailed handover and notes to a colleague to share with the team.

*"I think we all come to the meeting much better prepared and we're not scrabbling through the notes trying to find the information, but we come knowing their scores and progress." Physiotherapist*

Preparation should include:

- Knowledge of the patient's social and family circumstances
- Communication from the patient/their family
- Knowledge of the nursing and therapy needs of the patients
- Progress made since the last meeting, to include completion of allocated actions
- Results from patient assessments to review with the team where appropriate, e.g. mood scores

### **Leadership and chairing the MDT meeting**

Every MDT meeting should have a chair and a vice-chair, who should be prepared to take over when the chair is absent, due to illness or annual leave. These roles could be filled by any member of the multi-disciplinary team and developing the skills necessary to perform this role could form part of a member of staff's CPD. The chair should facilitate discussion between all members of the multi-disciplinary team and ensure that the discussion is not dominated by a single clinician or profession. Should conflict arise, the chair should negotiate agreement and encourage a climate of constructive criticism and open discussion.

The chairperson is responsible for keeping the discussion focussed on the agenda and ensuring the meeting runs to time, and to facilitate quick and effective decision-making about a patient's care or discharge. If a decision is clinically complex and requires further discussion, the chair should refer this point to another meeting to be discussed in a patient case conference or family meeting. This should be documented in the action plan for the week.

### **Documentation**

Notes of the discussion should be made using standardised MDT documentation. This documentation should include all aspects mentioned above (an example of MDT documentation can be on page 6). Action plans allocated to specific members of the team should be documented and these should be reviewed at the following meeting. Responsibility for making notes in patient files should be shared amongst the members of the team. A member of each discipline may also wish to record separate notes to allow them to quickly feed back information to members of their team who are unable to attend the meeting.



## Structure

The MDT meeting should follow a pre-defined structure to ensure that no aspect of patient care is missed (see sample agenda).

The chair should introduce each patient with a brief summary to include:

- Name and age of patient
- Diagnosis/summary of acute care and impairments upon initial assessment
- Date of admission to service
- Previous medical history
- Social/family situation
- Long-term MDT goals

The meeting should then follow a pre-defined agenda to encompass:

- Review of action points from the previous meeting
- Scoring and review of scores on standardised measures and assessments
- Discussion of progress towards goals and plans for management
- Planning towards discharge (expected date of discharge and destination to be discussed and recorded following initial assessment)
- Identification of actions to be completed with responsibility allocated to a member of the team and a date to complete by

## Team Climate

All members of the team should be encouraged to contribute to the discussions and openly seek clarification if they feel something is unclear. There should be a feeling of participative safety and trust amongst the team and members should feel able to express themselves freely. Members of the team should have an understanding of the objectives the team is aiming to achieve and team members should help and support each other towards achieving these objectives. There should be a pro-discussion environment, allowing members of the team to constructively challenge each other where necessary.

## Use of standardised measures

Standardised measures should be completed during the multi-disciplinary team meeting to document the patient's progress through the rehabilitation process, in order to focus the discussions on the patient's problems. All team members should have an understanding of the scores of the core measures being used and contribute to scoring the measures where appropriate. Progress should be assessed using these standardised measures and they should be used to inform clinical decision-making, e.g. whether a patient is continuing to make progress within rehabilitation.



## After the meeting

Following the MDT meeting, members of the stroke MDT should feed back actions and decisions from the meeting to members of their disciplinary team unable to attend the meeting. Decisions taken at the meeting should inform the plan of care and therapeutic activity over the following week and team members should ensure that they have completed all actions they have been allocated at the meeting prior to the date set for completion.



## Sample MDT Meeting Agenda

- **Brief introduction**

*State patient's name, diagnosis, brief summary of acute care, admission date/days since stroke, previous level of functioning and social situation, long-term MDT goals*

- **Review of previous actions**

- **Score the toolkit – compare with previous scores to monitor progress**

- *Score Barthel Index (even if you feel it will not have changed) – break down into sections and score as a team. Record item scores*
- *Has mood been scored? When was the screen completed (set date to complete screen if not currently applicable), what was the score and interpretation, plans to review?*
- *Has cognition been scored? When was the MoCA completed (set date to complete screen if not currently applicable), what was the score and interpretation, plans to review?*
- *What is the MUST score for this week?*
- *Has a language screen been completed?*
- *Score TOMs (aphasia/dysphagia/dysarthria)*

- **Progress towards goals and plans for management**

*What are the patient's goals and how do these relate to assessment scores? Give update on progress towards goals and plans to manage lack of goal attainment if appropriate*

- **Discharge planning**

*State provisional place and estimated date of discharge and note any issues arising*

- **Action Plans**

*What actions are needed to support goal achievement and achieve discharge plans? Who should complete each action and by when?*



## Initial MDT form

<b>Name:</b>	<b>DOB:</b>	<b>NHS No:</b>
<b>Date of admission:</b>	<b>Admission Barthel Index score:</b>	
<b>Diagnosis/Summary of acute care</b> (including date of thrombolysis if applicable):		
NIHSS score:		
<b>Impairments upon initial assessment</b> ( <i>tick all that apply</i> )		
<input type="checkbox"/> Motor	<input type="checkbox"/> Language/Communication	
<input type="checkbox"/> Balance	<input type="checkbox"/> Sensory	
<input type="checkbox"/> Visual/Perceptual	<input type="checkbox"/> Cognitive	
<input type="checkbox"/> Continence	<input type="checkbox"/> Mood	
<input type="checkbox"/> Swallowing		
<b>Previous medical history:</b>		
<b>Social/family situation:</b>		
<b>Long-term MDT goals:</b>		
<b>Social Worker name and contact telephone number:</b>		



## Weekly MDT form

Name:		DOB:	NHS No:
Disciplines present: Doctor <input type="checkbox"/> Nurse <input type="checkbox"/> Occupational Therapist <input type="checkbox"/> Physiotherapist <input type="checkbox"/> Speech therapist <input type="checkbox"/> Dietician <input type="checkbox"/> Social Worker <input type="checkbox"/> Other <input type="checkbox"/> _____			
<b>Review of actions from previous meeting</b> (note any actions not completed and reasons why – add to action plan overleaf if required)			
<b>Scoring of toolkit</b> (score toolkit and compare with previous scores)			
Barthel Index score: /20		Cognition – MoCA score: /30	
Mood screen completed:	Date of completion:	Score/Interpretation:	
TOMs (aphasia) scores: Impairment /5, Activity /5		MUST score: /6	
TOMs (dysphagia) scores: Impairment /5, Activity /5		Communication score:	
<b>Progress towards goals and plans for management</b> (relate assessment scores to goals, record progress towards goals, plan to manage lack of goal attainment if appropriate)			
<b>Discharge planning</b> (record provisional place and expected date of discharge below, and note any issues arising)			
Provisional discharge destination:			
Expected date of discharge:			







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# G-MASTER

Greater Manchester Assessment of Stroke Rehabilitation

*The assessment toolkit for stroke rehabilitation professionals*



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