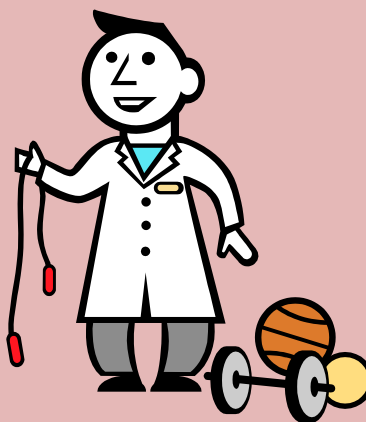


Robot Assisted Training for the Upper Limb after Stroke

RATULS

Enhanced upper limb
therapy 3:

**Warm-up stretches,
goal choices and activity
flowcharts**



Contents

1. Purpose of this document	3
2. Warm-up stretches	3
3. Upper limb rehabilitation goal choices	6
Washing (W)	6
Dressing (D)	6
Eating and Drinking (F)	6
Other	6
Optional goals.....	7
4. Activity Flowcharts	8
Washing (W).....	9
W1 – Using a sponge/ flannel	9
W2 – Washing hands/ face/ hair	11
W3 – Cleaning Teeth	13
W4 – Hand care.....	15
Dressing (D)	17
D1 – Closing a zip/ buttons	17
D2 – Putting on a cardigan/ coat/ shirt	19
D3 – Putting on a mitten/ glove	21
D4 – Putting on socks/ shoes.....	23
D5 – Putting on spectacles	25
Eating and Drinking (F).....	27
F1 – Drinking from mug/ glass	27
F2 – Pouring from bottle/ jug/ kettle	29
F3 – Removing lids/ open containers	31
Other	33
PC1 – Brushing hair.....	33
FM1 – Opening doors with affected hand	35
FM2 – Sit-to-stand using both hands	37
5. Enhanced upper limb therapy documents.....	40
6. RATULS co-ordinating centre	40

1. Purpose of this document

This document describes example warm-up stretches, lists goal choices and provides activity flowcharts for the RATULS enhanced upper limb therapy programme. It is intended to serve as a reference and resource guide for clinicians delivering the enhanced upper limb therapy programme.

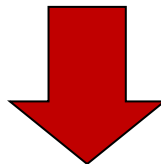
2. Warm-up stretches

Prior to practising activities in the RATULS enhanced upper limb therapy programme, gentle warm up stretching can be performed where necessary. A “warm-up” helps to focus attention on the affected arm, and stimulate sensation and proprioception by gently stretching soft tissues and mobilising the joints, before practising the rehabilitation activities. However, warm-up stretches should be kept to a minimum as the focus of the sessions should be on task specific activity practice.

The following stretches are given as a guide. Different stretches may be used if advised by a senior therapist. The therapy assistants must follow advice of the senior therapist.

Stretch 1 – this stretches down the full length of the participants arm.

1. Participant to place the affected hand flat on the table (palm down), with assistance from the therapist/ therapy assistant where necessary.
2. Therapist/ therapy assistant to take hold of the wrist of the affected arm.
3. Slowly slide the affected hand forwards on the table so that the elbow straightens out. The participant should not feel any pain.
4. Make sure the body remains still and the participant doesn't lean forward. Then relax.
5. Hold for approximately 20 – 30 seconds. Then relax.
6. Repeat as appropriate.



Stretch 2 - focuses on the participant's wrist and fingers

1. Participant to place the hand flat on the table in front with assistance from the therapist/ therapy assistant where necessary. Ensure the thumb is in abduction.
2. Therapist/ therapy assistant to slide the fingers of the unaffected hand under the fingers of the affected hand.
3. Make sure the participant's wrist stays on the table.
4. Slowly lift the participant's fingers up (keeping them straight). The aim is to bend the wrist backwards.
5. The participant should feel a gentle stretch down their fingers, palm and wrist. The participant should not feel any pain.
6. Hold for approximately 20 – 30 seconds. Then relax.
7. Repeat as appropriate.



3. Upper limb rehabilitation goal choices

The following rehabilitation goals are suggestions for use in the RATULS enhanced upper limb therapy programme.

Washing (W)

- W1.** Using a sponge/ flannel
- W2.** Washing hands/ face/ hair
- W3.** Cleaning teeth
- W4.** Hand care

Dressing (D)

- D1.** Closing a zip/ buttons
- D2.** Putting on a cardigan/ coat/ shirt
- D3.** Putting on a mitten/ glove
- D4.** Putting on socks/ shoes
- D5.** Putting on spectacles

Eating and Drinking (F)

- F1.** Drinking from mug/ glass
- F2.** Pouring from a bottle/ jug/ kettle
- F3.** Removing lids/ open containers

Other

Personal Care

- PC1.** Brushing hair

Functional Mobility

- FM1.** Opening doors with affected hand
- FM2.** Sit-to-stand using both hands

Optional goals

Whilst it is anticipated that the goal choices listed above will cover many participant choices, it is acceptable for alternative goals to be set at local discretion by the senior therapist.

If an alternative goal has been chosen ('optional goal'), this goal should be written out free text into the 'Enhanced upper limb therapy: participant goal and therapy record and labelled as 'OG 1' (optional goal 1). If more than one optional goal has been chosen these should also be written out and then labelled as OG 2, OG 3, etc.

For example: 'Using a knife and fork – OG1'.

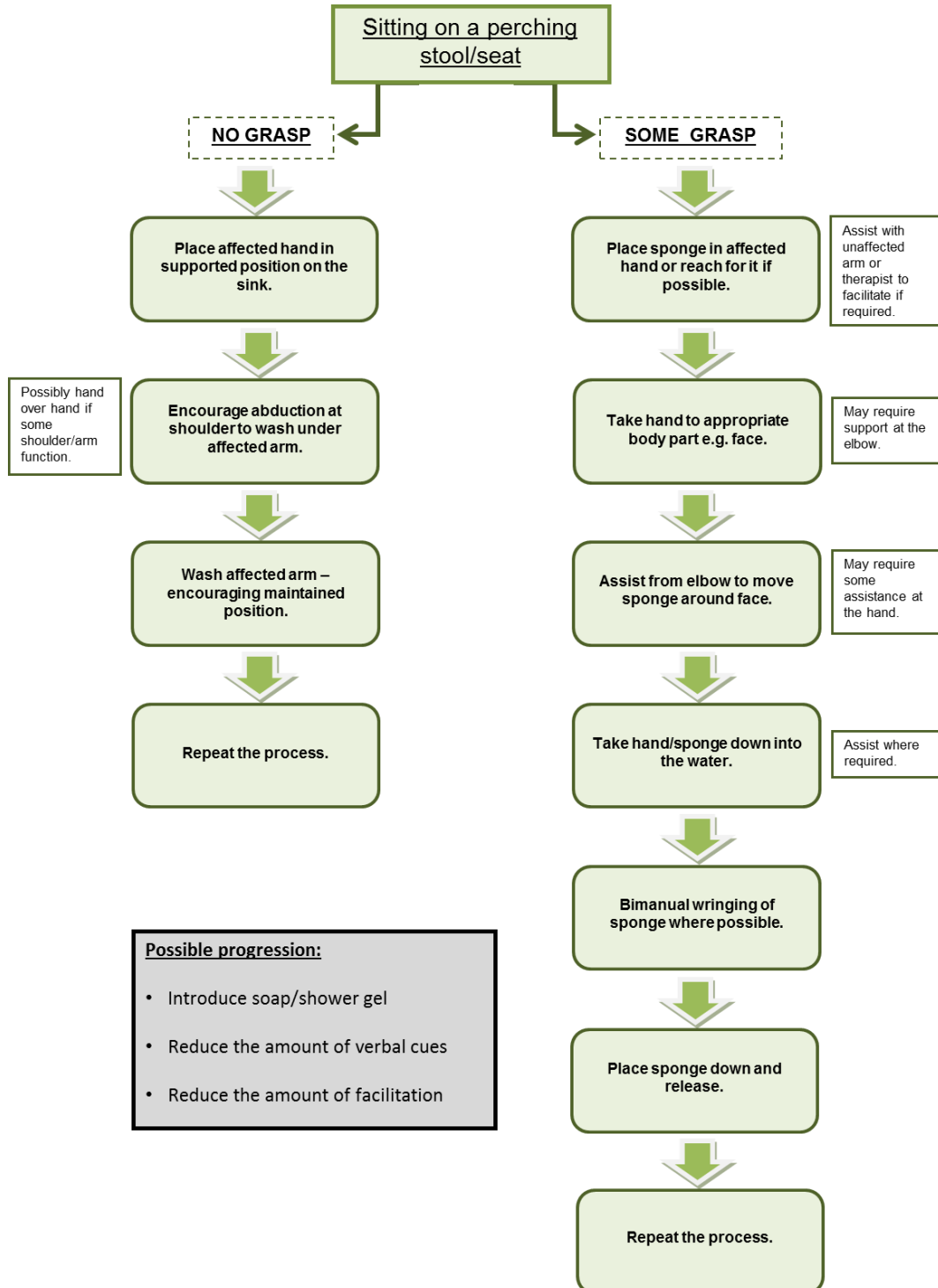
4. Activity Flowcharts

For each goal choice, two activity flowcharts are available. The first flowchart show a 'whole-task' activity. The second flowchart, 'part-task' activities.

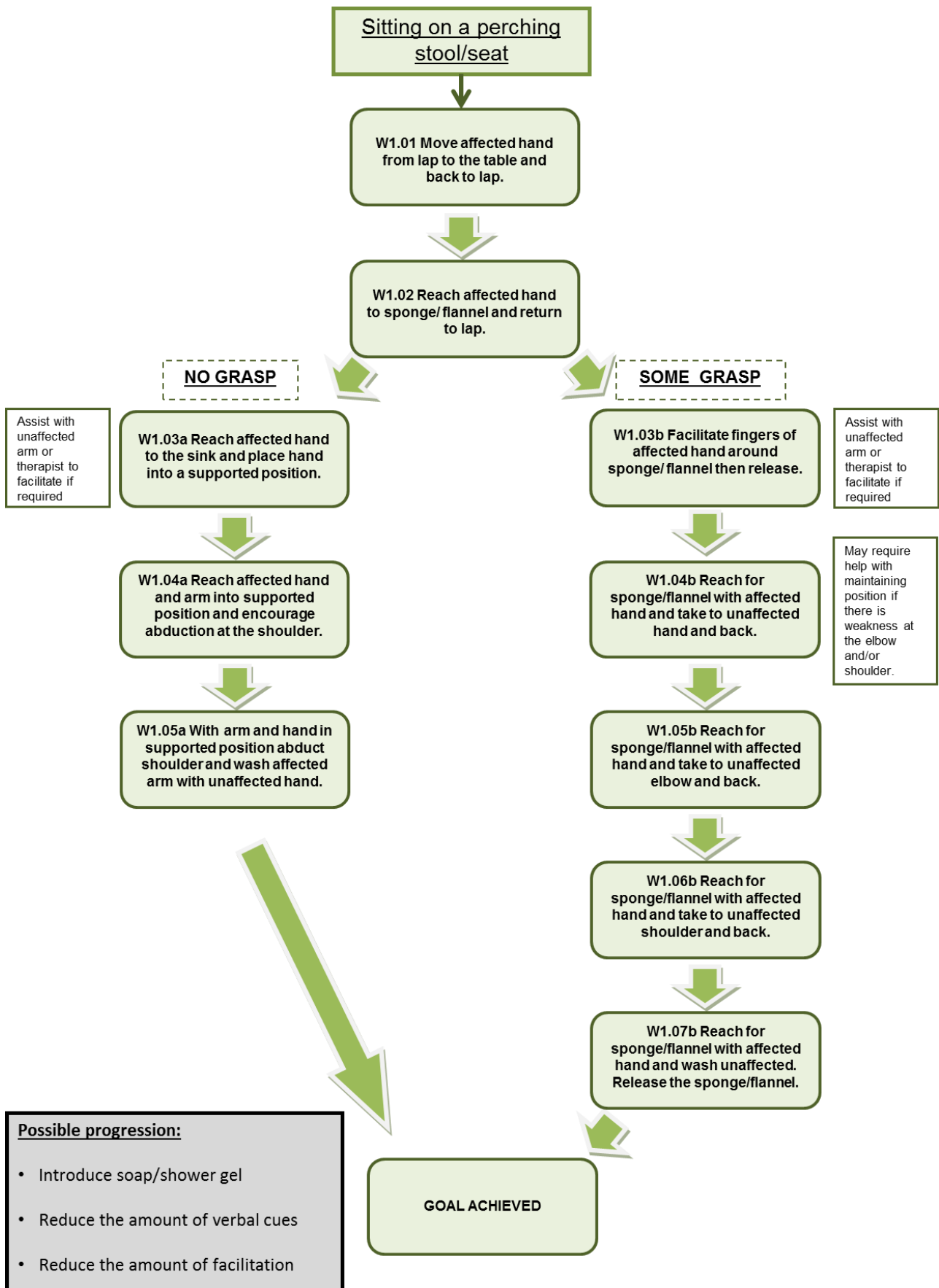
Washing (W)

W1 – Using a sponge/ flannel

1. Whole-task activity:

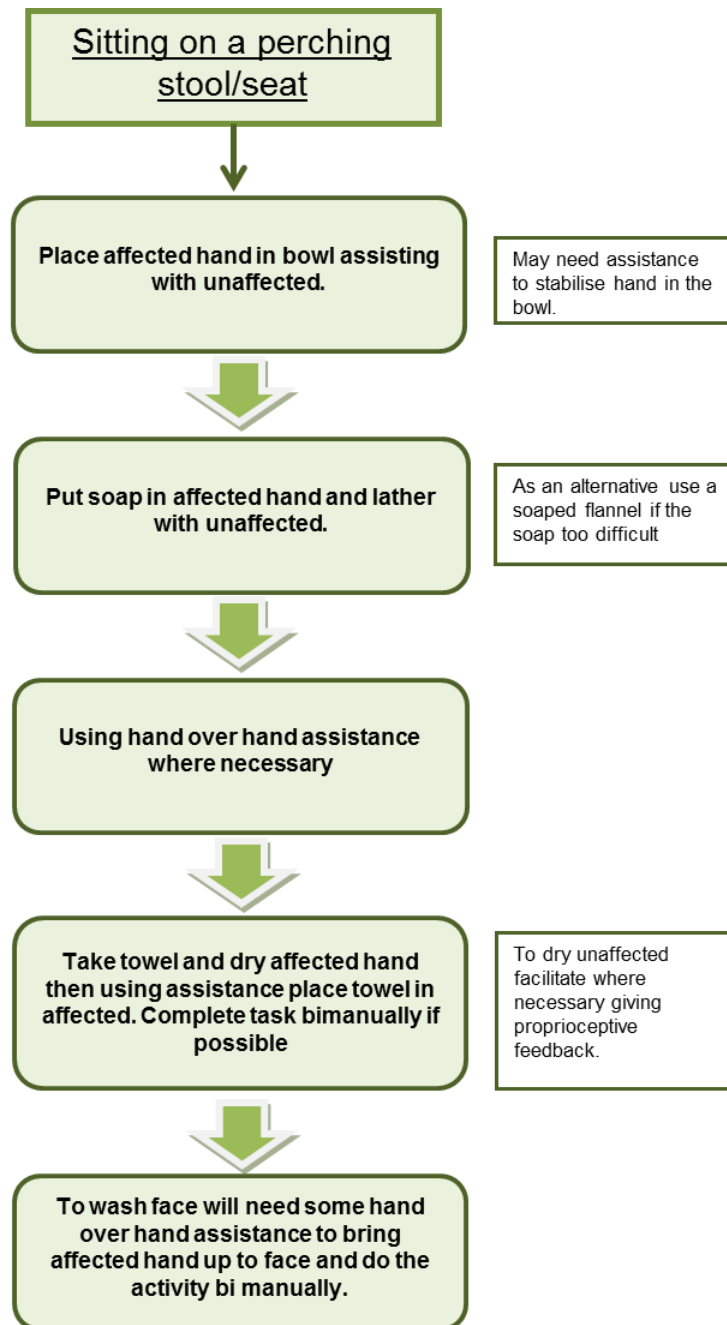


2. Part-task activities:



W2 – Washing hands/ face/ hair

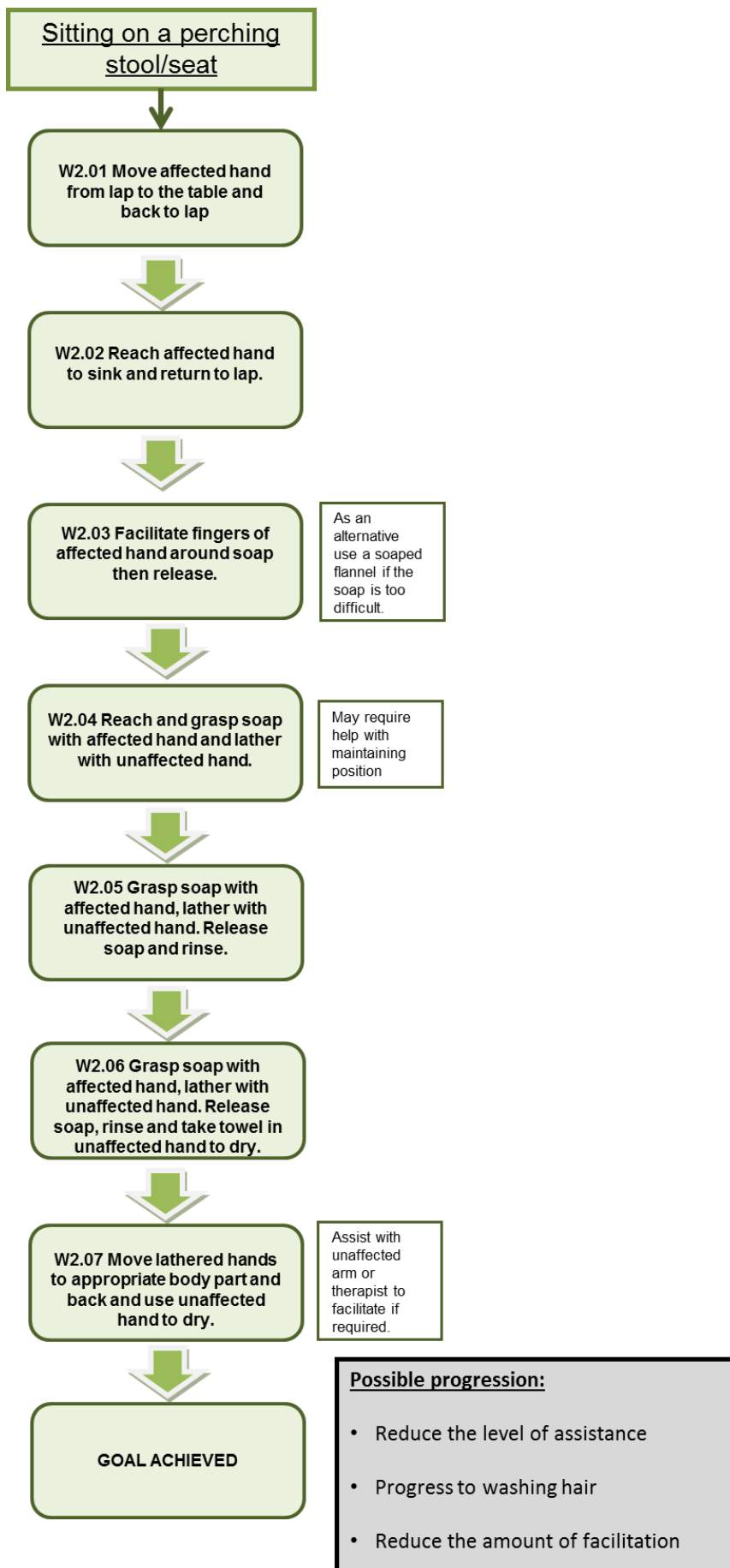
1. Whole-task activity:



Possible progression:

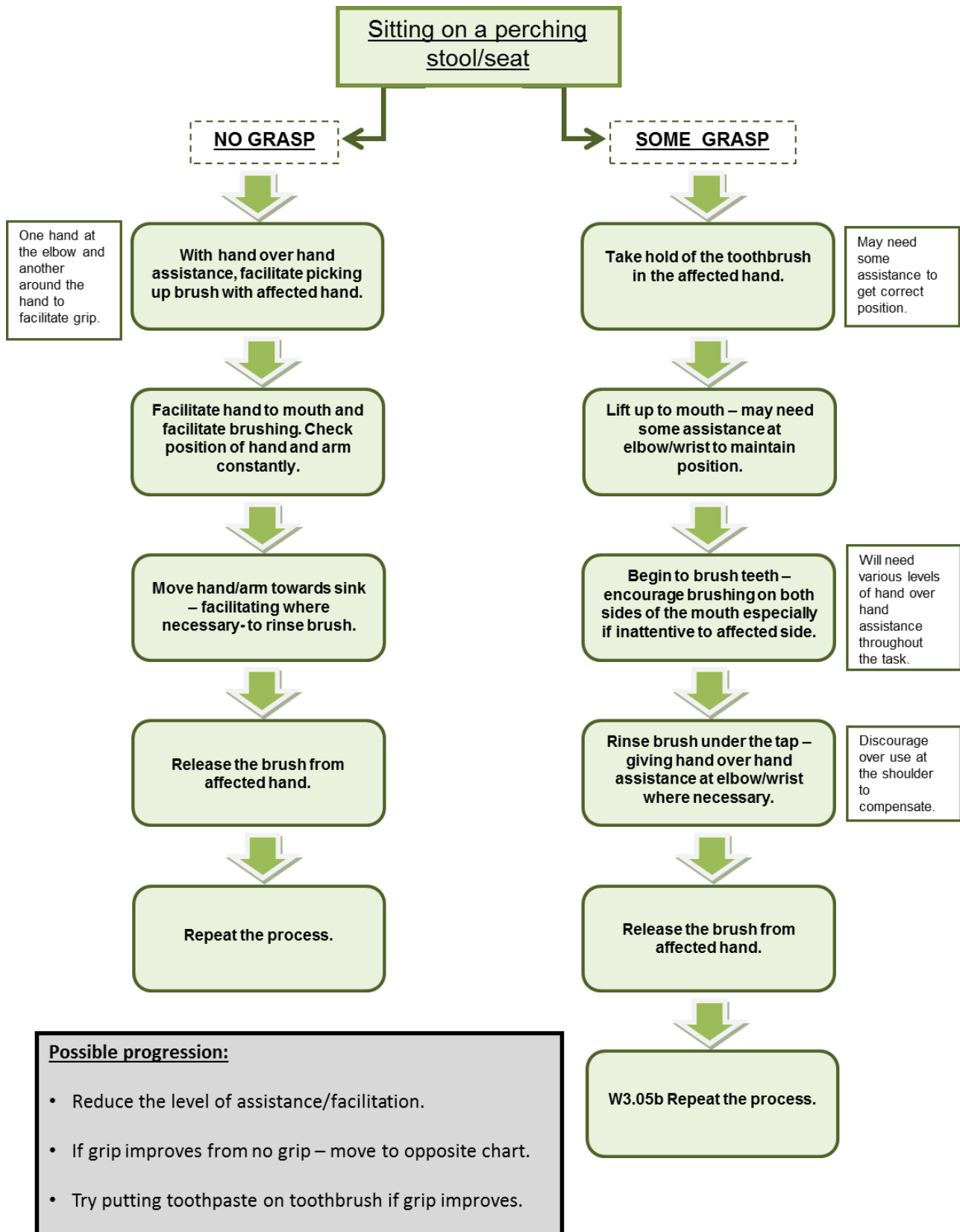
- Reduce the level of assistance
- Stop giving hand over hand when drying
- Progress to washing hair.

2. Part-task activities:

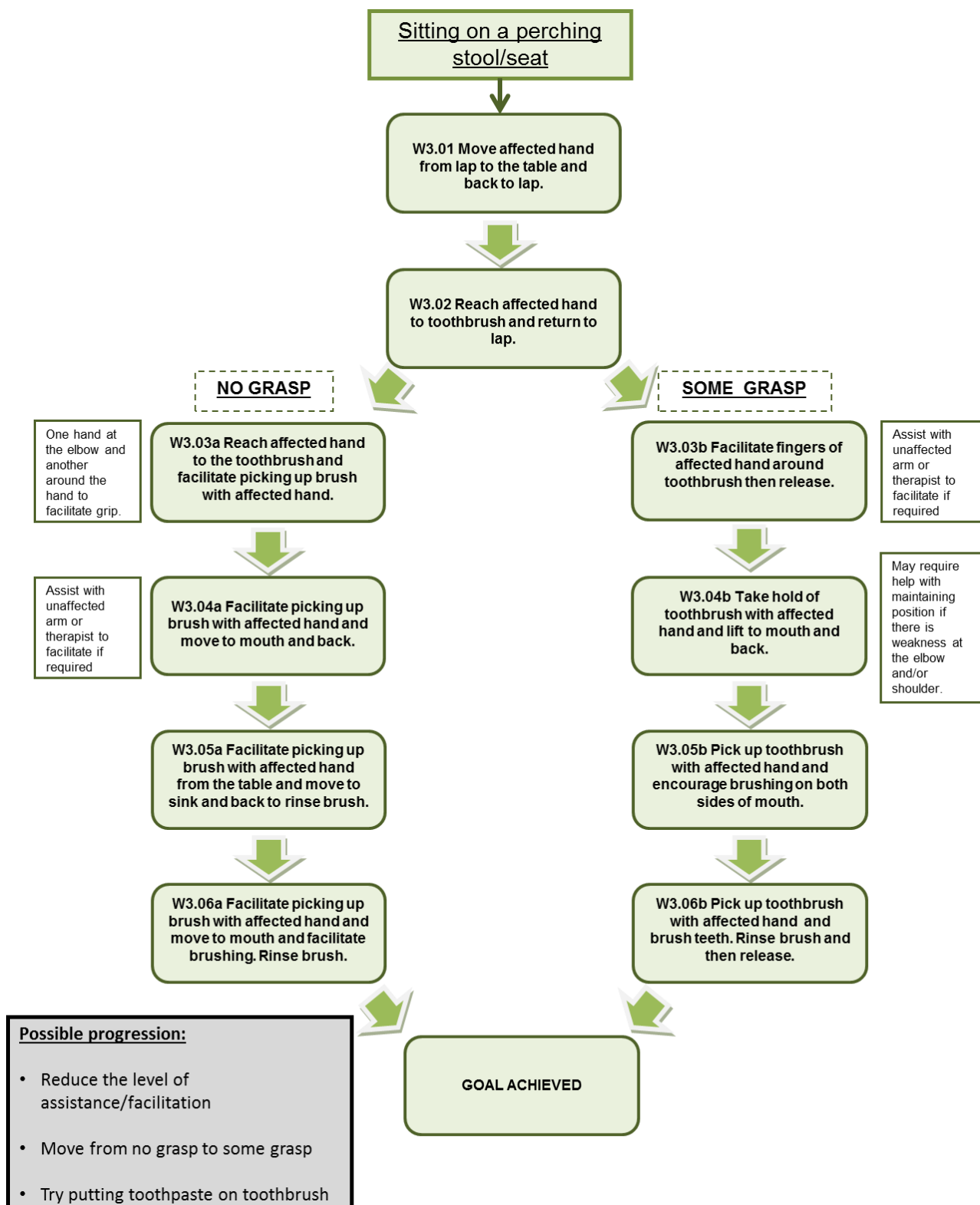


W3 – Cleaning Teeth

1. Whole-task activity:

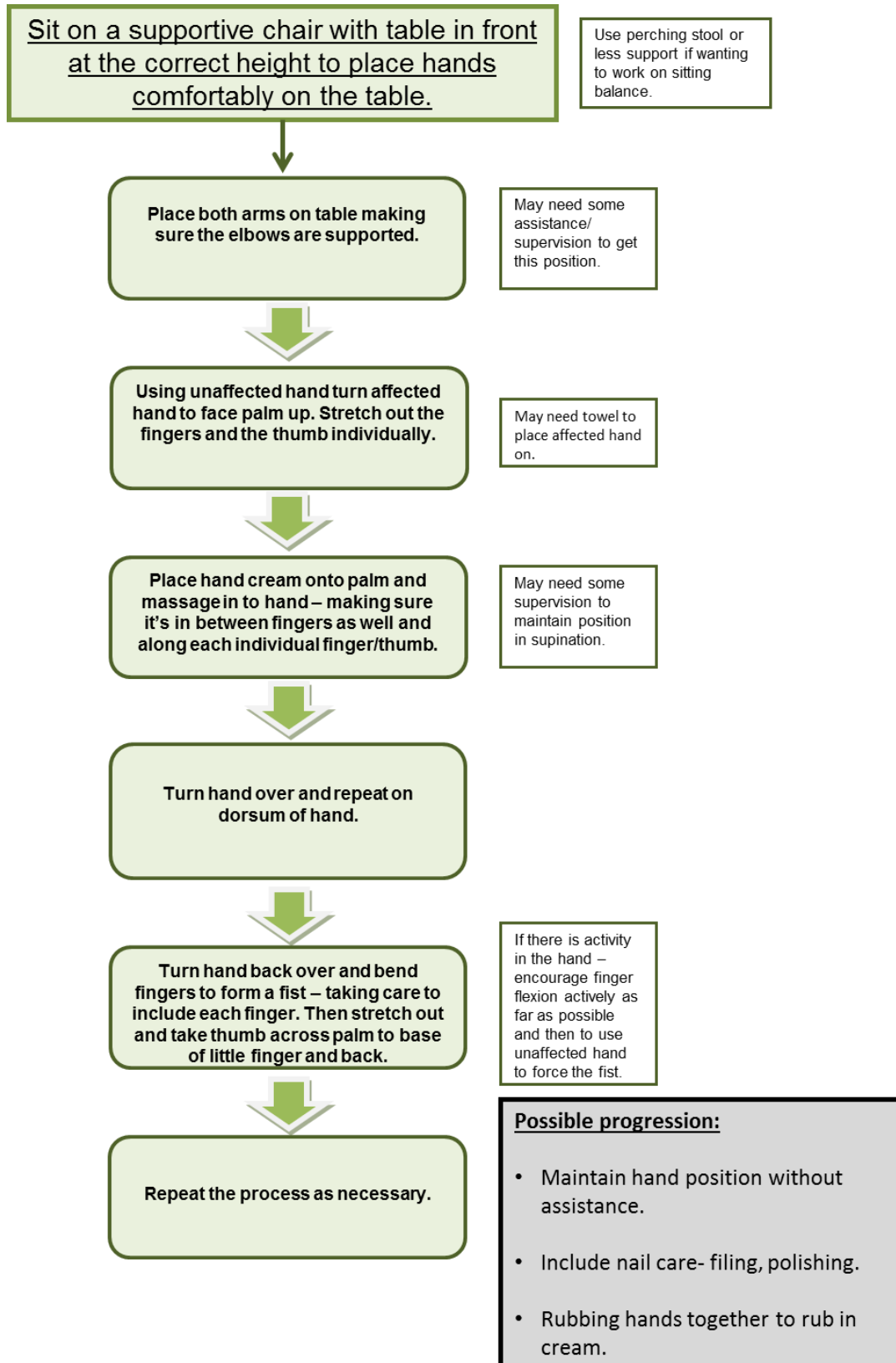


2. Part-task activities:

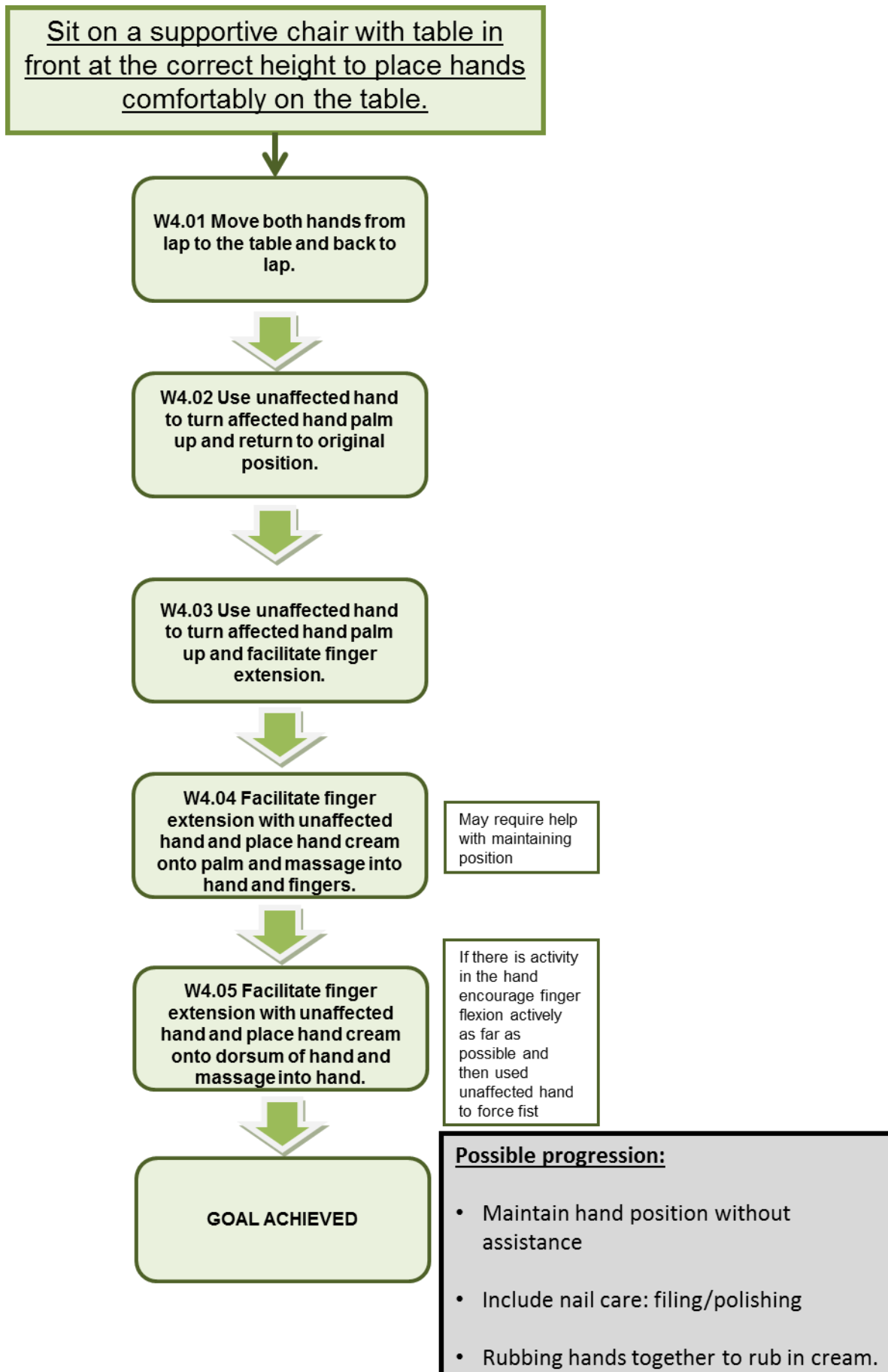


W4 – Hand care

1. Whole-task activity:



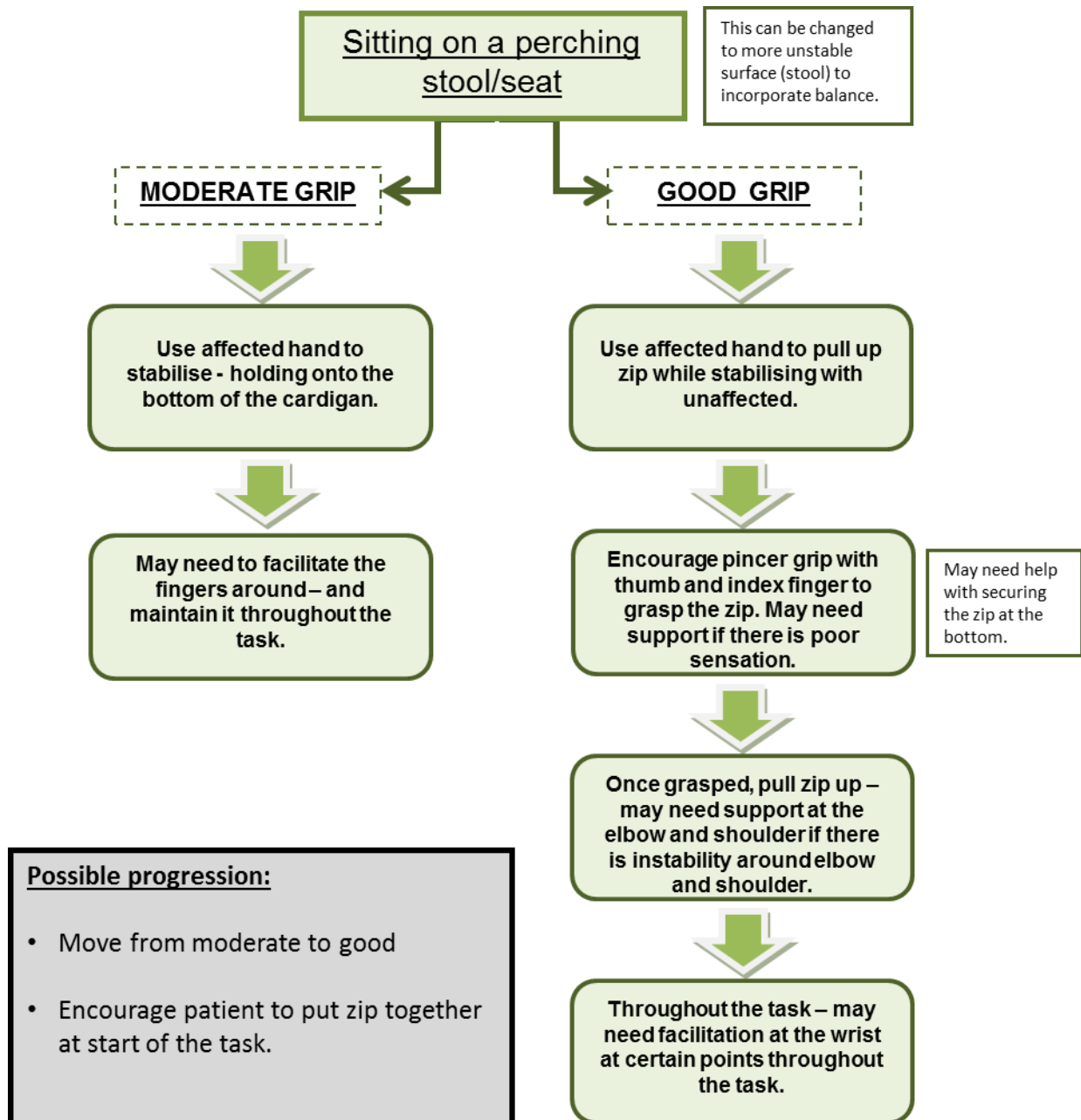
2. Part-task activities:



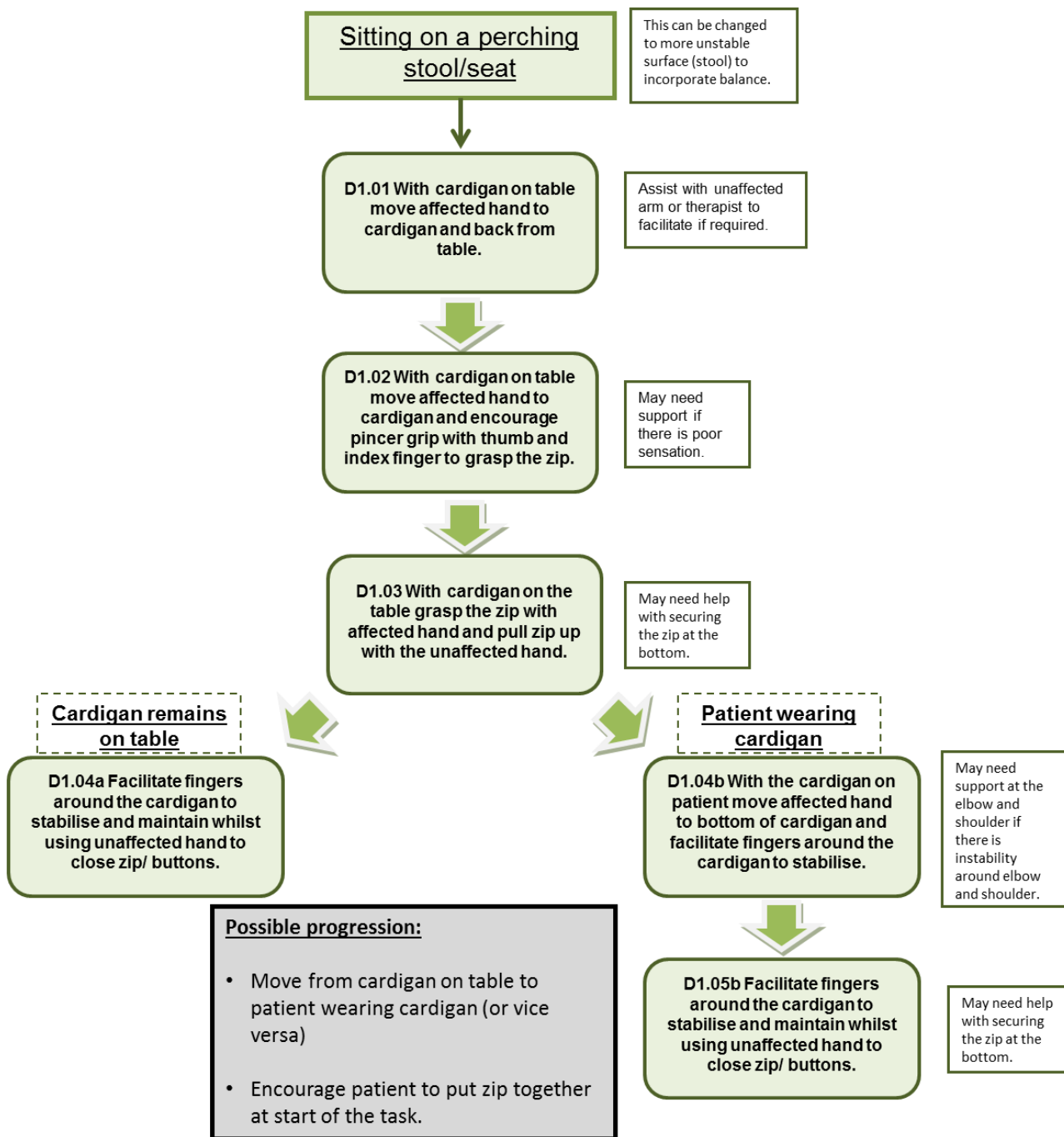
Dressing (D)

D1 – Closing a zip/ buttons

1. Whole-task activity:

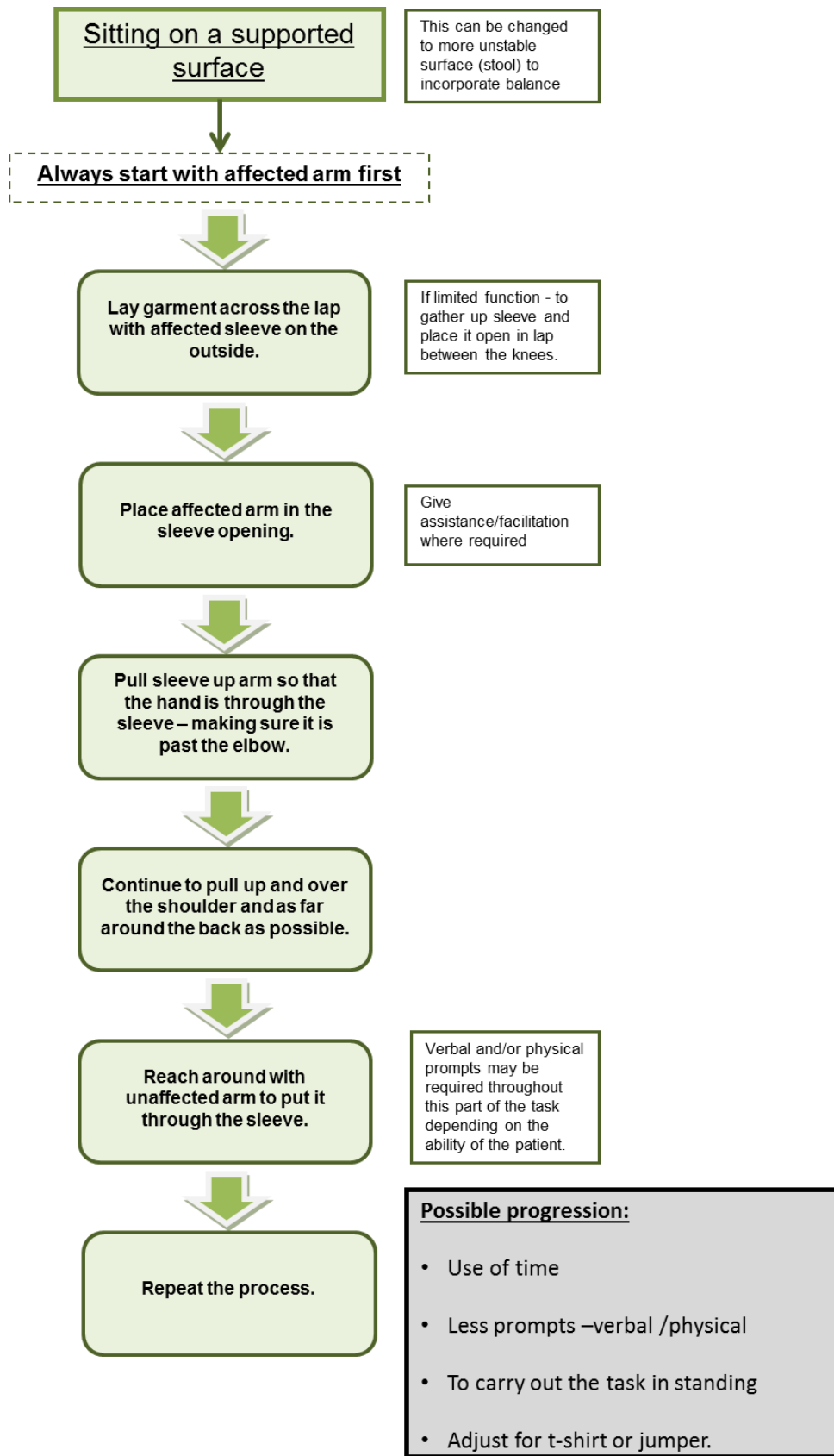


2. Part-task activities:

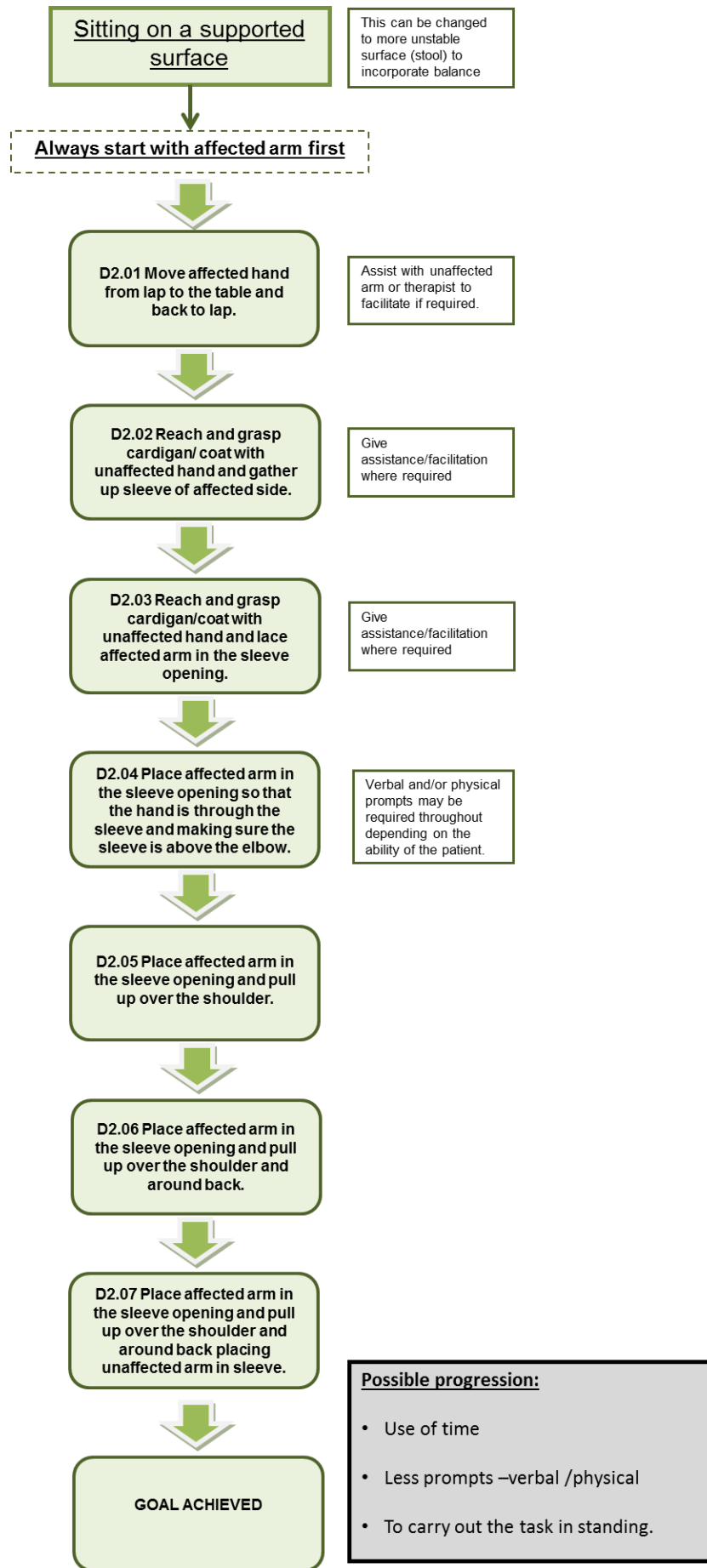


D2 – Putting on a cardigan/ coat/ shirt

1. Whole-task activity:

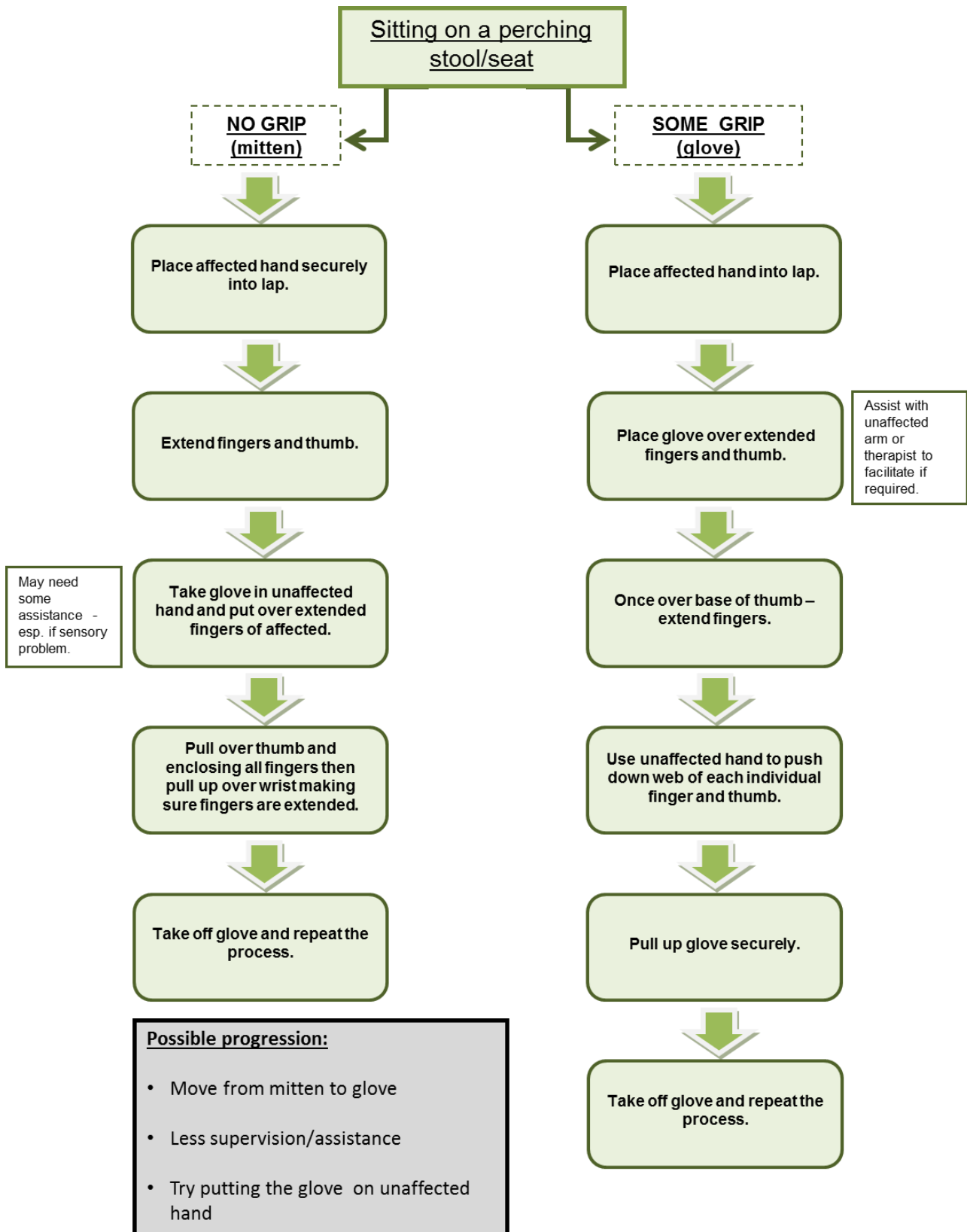


2. Part-task activities:

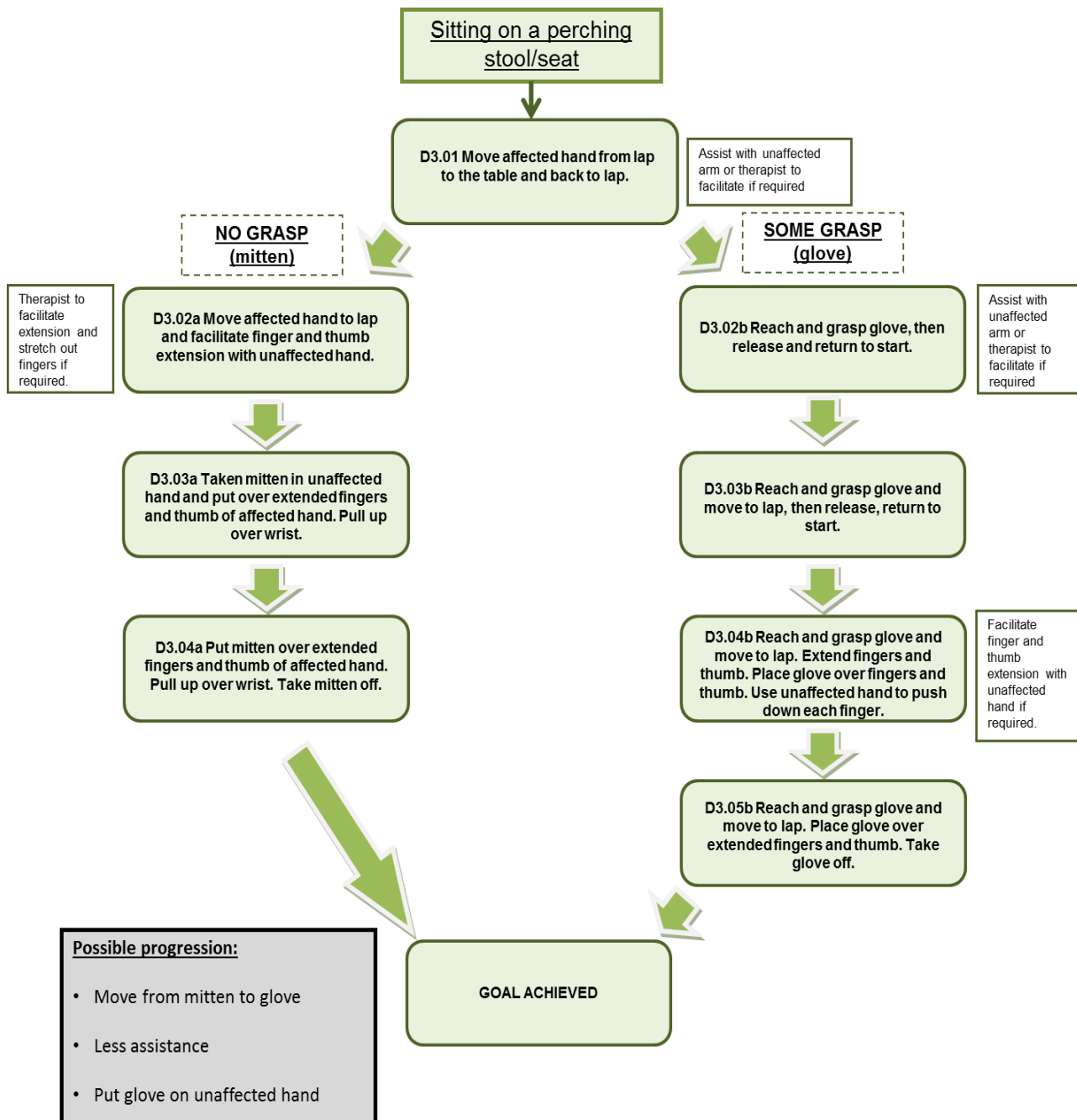


D3 – Putting on a mitten/ glove

1. Whole-task activity:



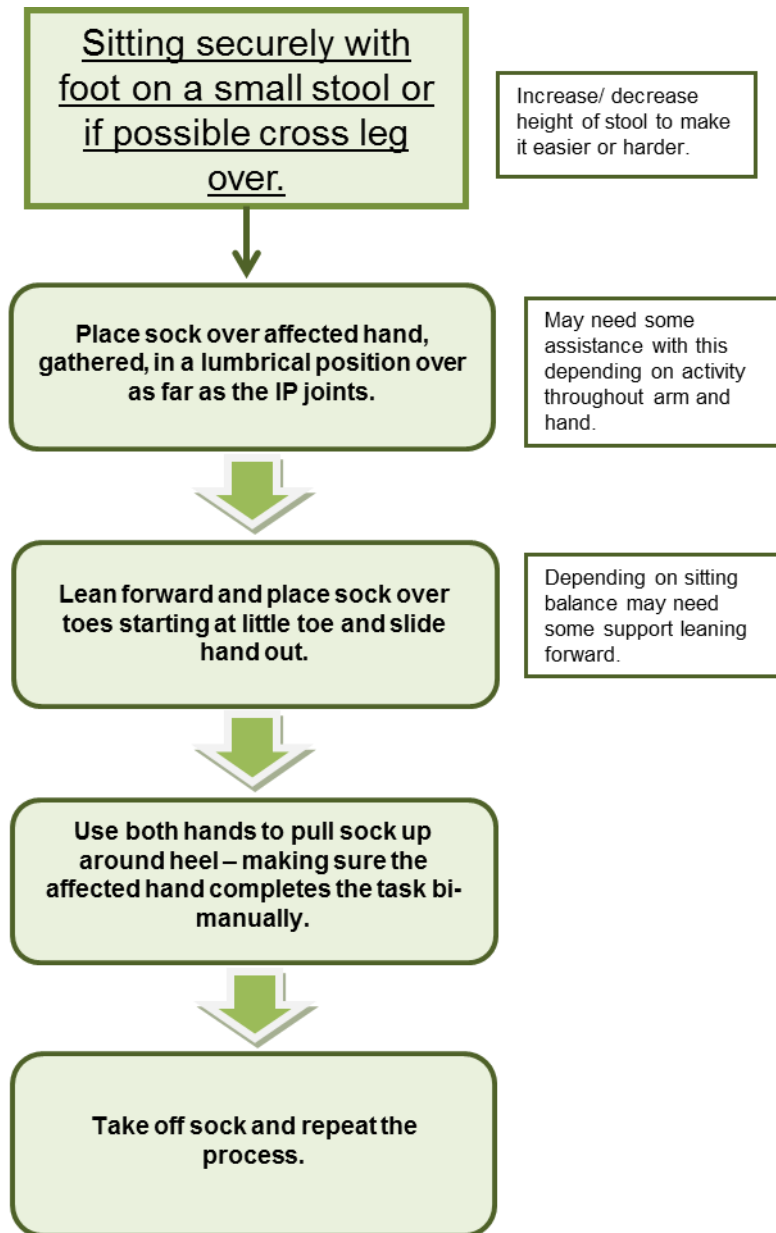
2. Part-task activities:



D4 – Putting on socks/ shoes

1. Whole-task activity:

NB: Only for participants with moderate to good grip and fairly good lower limb function.

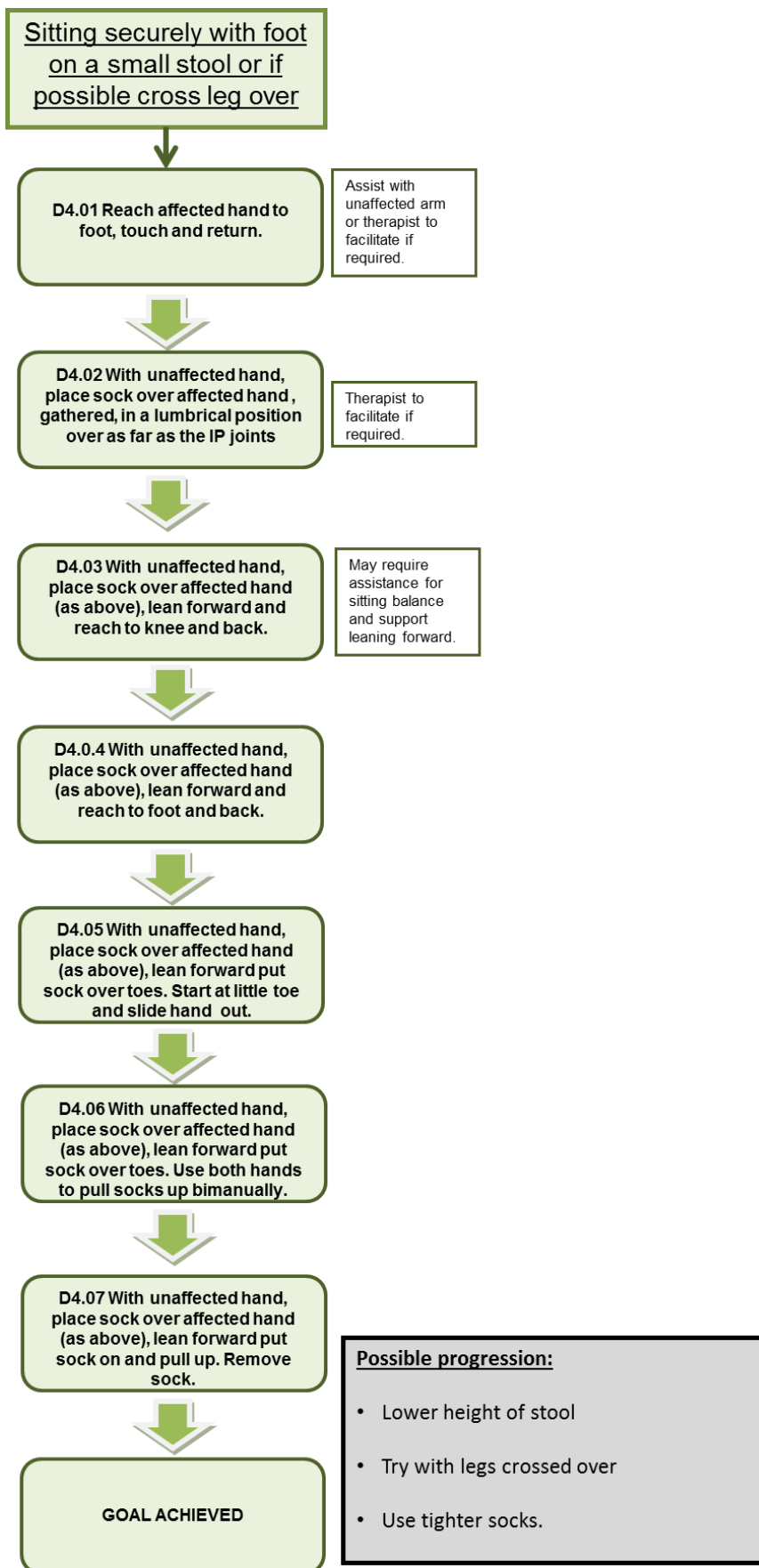


Possible progression:

- Lower the height of the stool
- Try with leg crossed over
- Use tighter socks

2. Part-task activities:

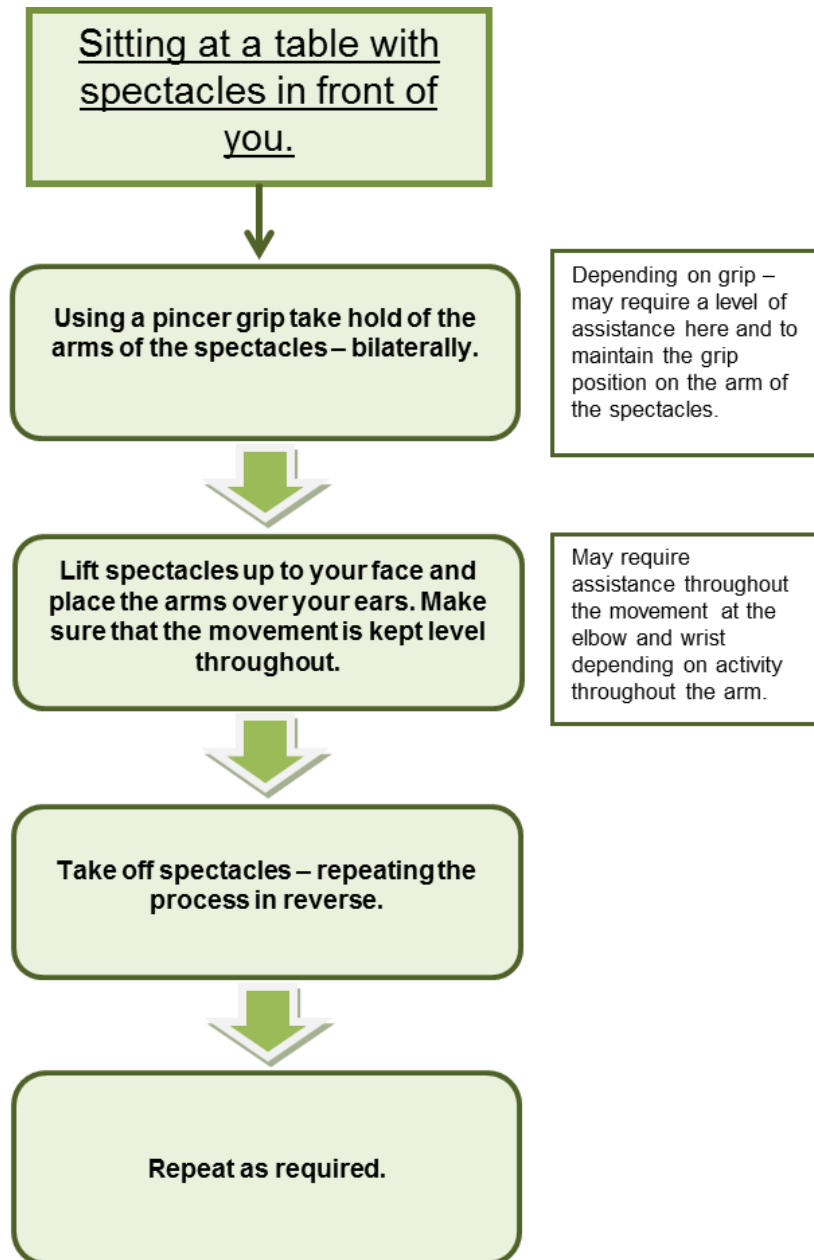
NB: Only for participants with moderate to good grip and fairly good lower limb function.



D5 – Putting on spectacles

1. Whole-task activity:

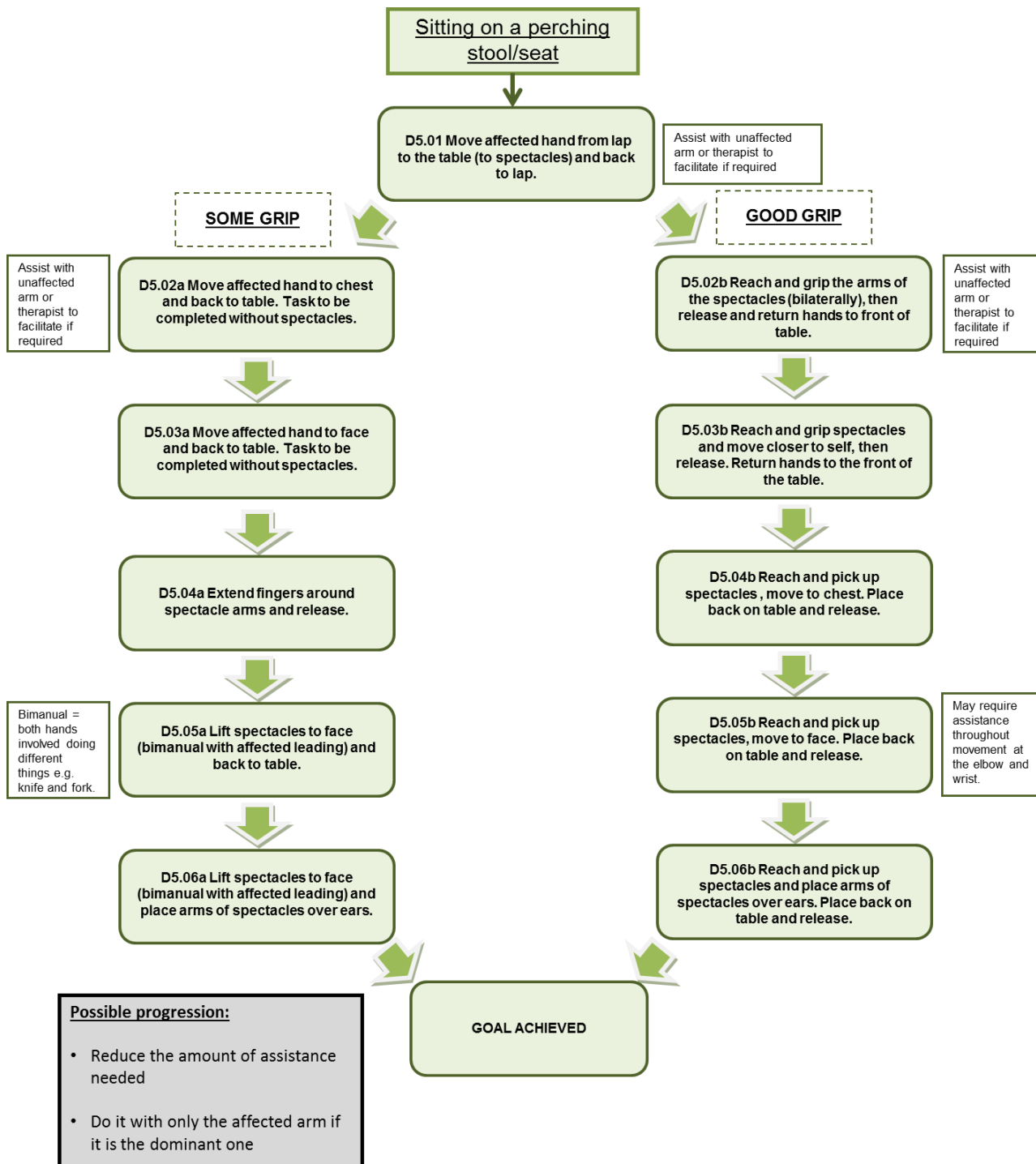
NB: The participant must have some grip.



Possible progression:

- Reduce the amount of assistance needed at the grip and elbow.
- Do it with only the affected arm if it is the dominant one.

2. Part-task activities:



Eating and Drinking (F)

F1 – Drinking from mug/ glass

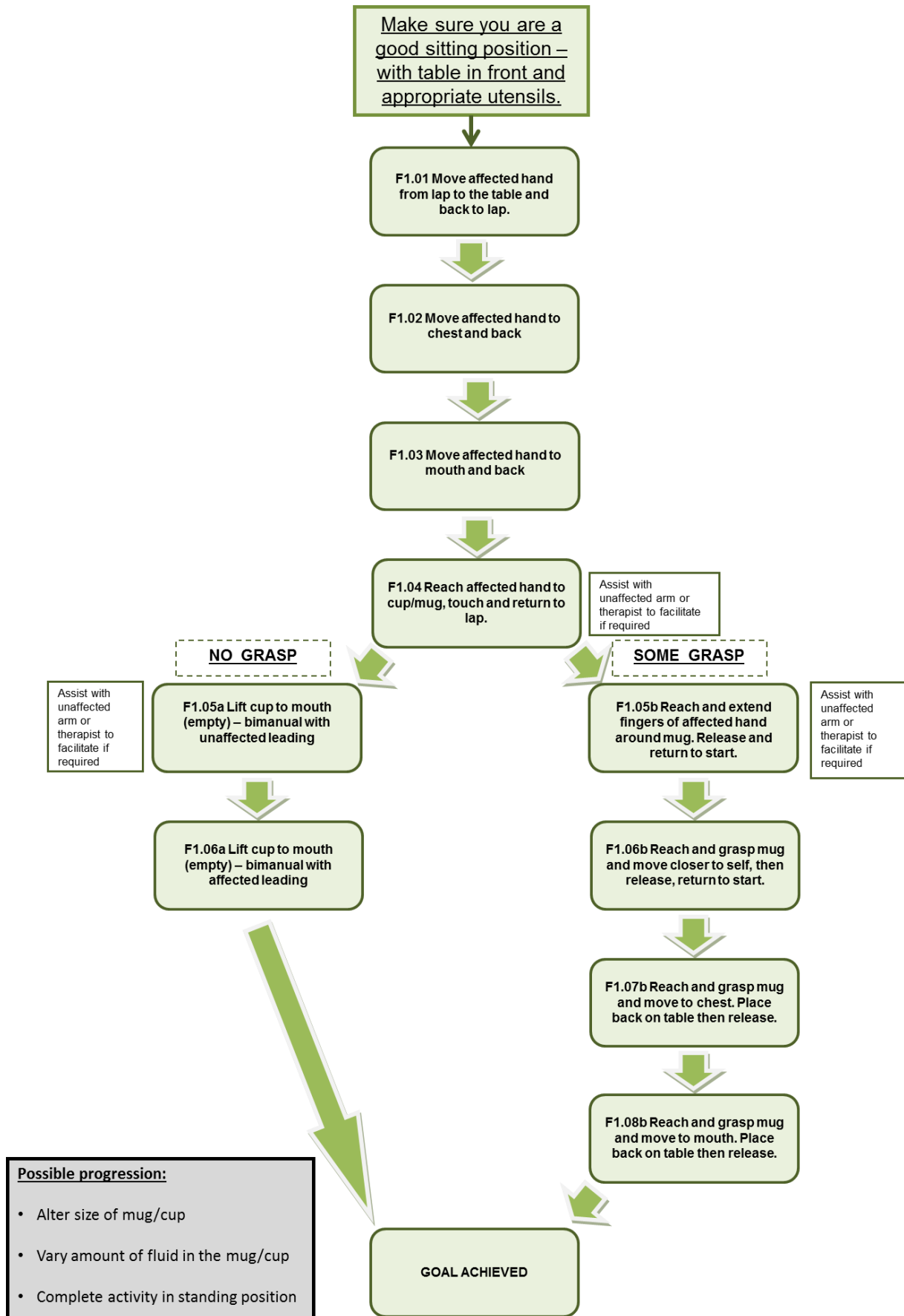
1. Whole-task activity:



Possible progression:

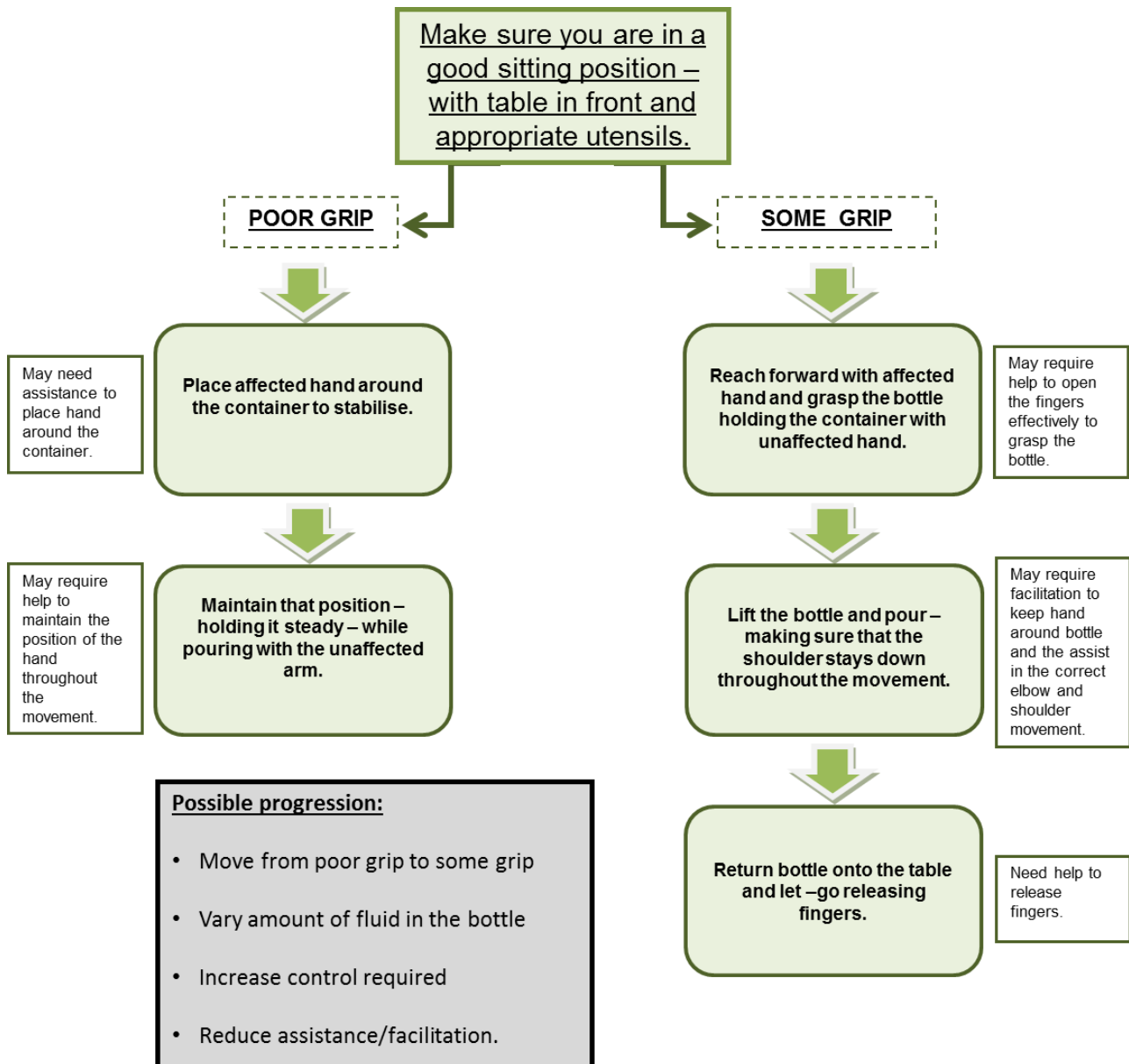
- Alter size of cup/ mug
- Alter quantity of liquid
- Complete activity in standing
- Alter the amount of assistance

2. Part-task activities:

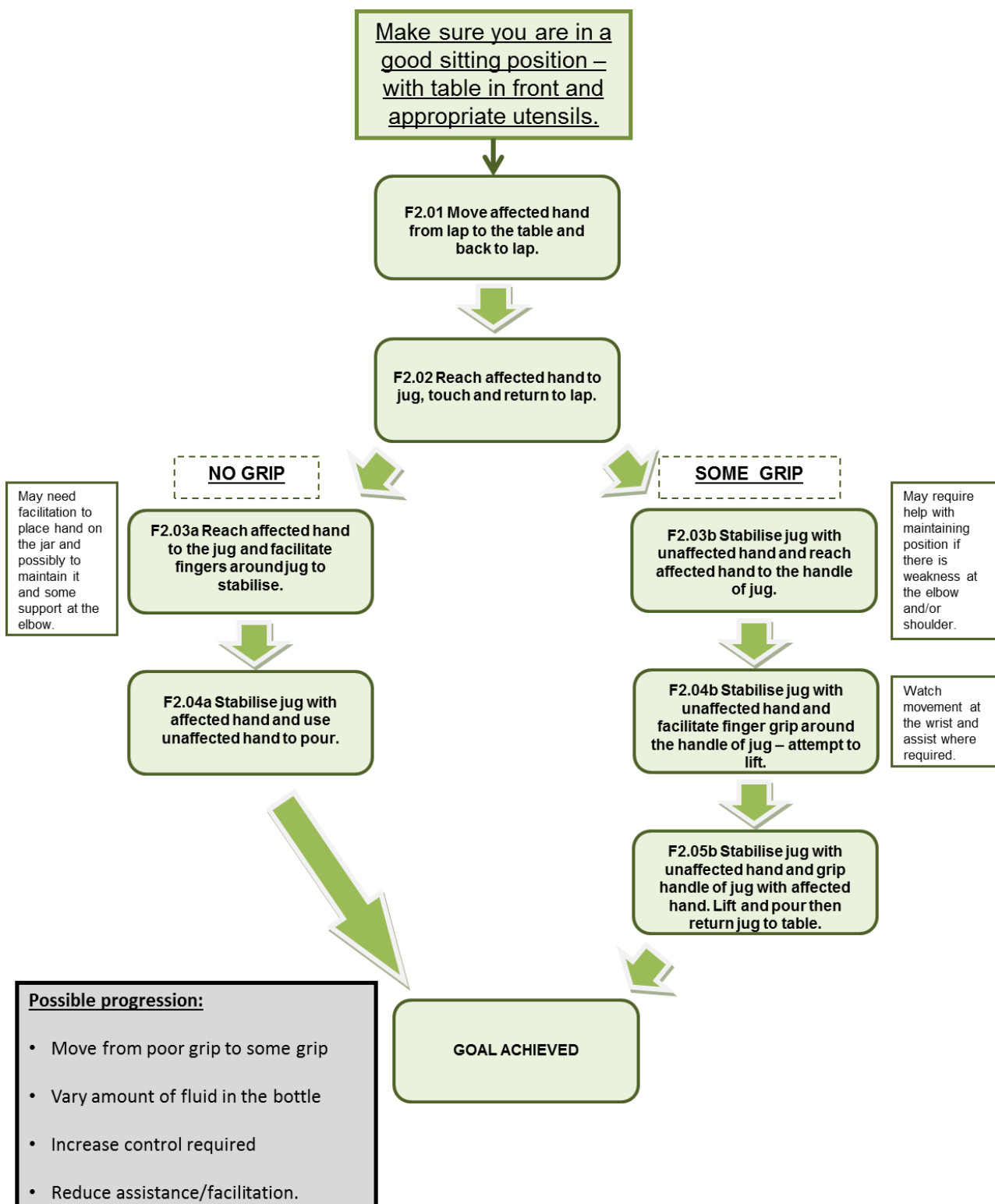


F2 – Pouring from bottle/ jug/ kettle

1. Whole-task activity:

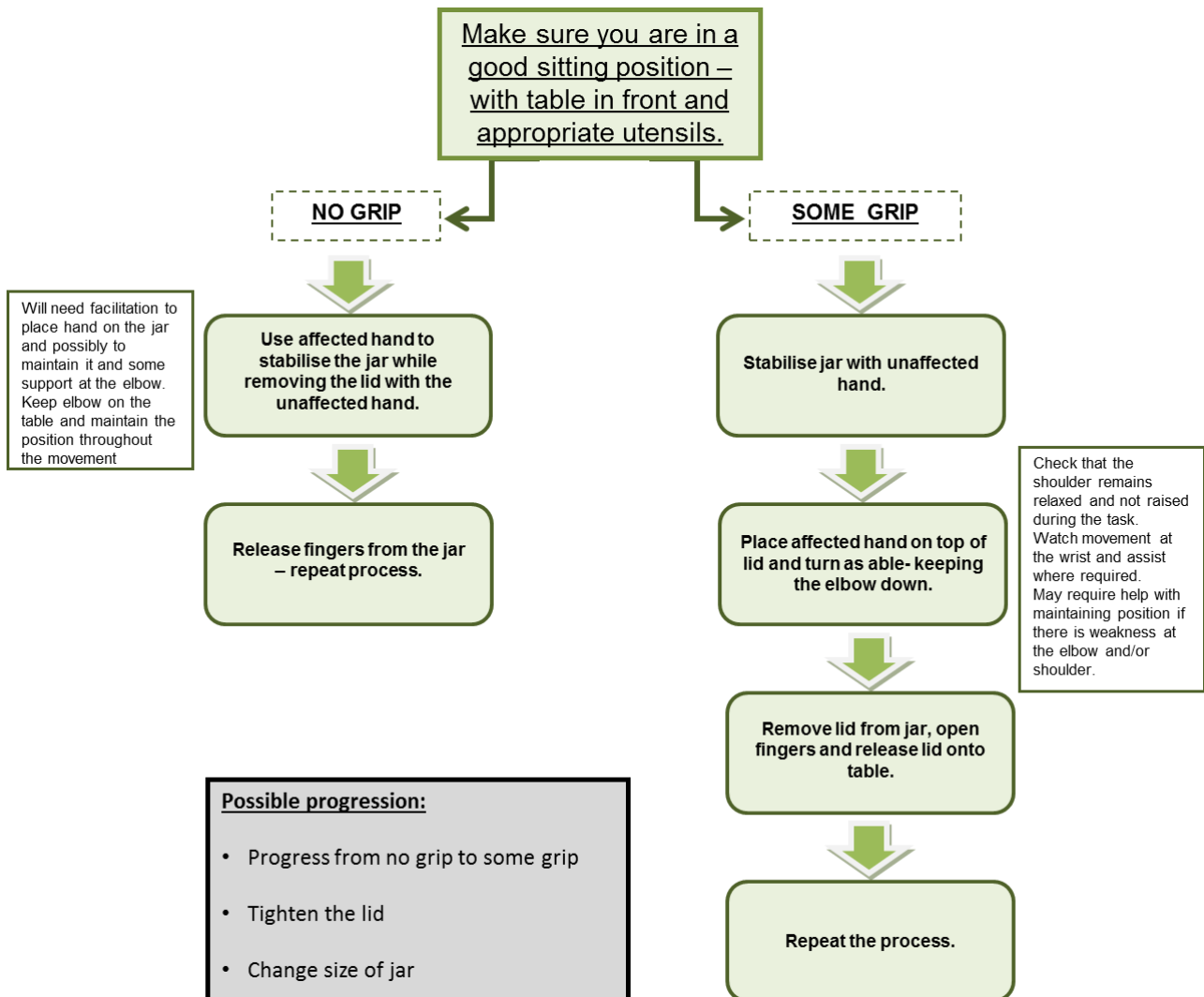


2. Part-task activities:

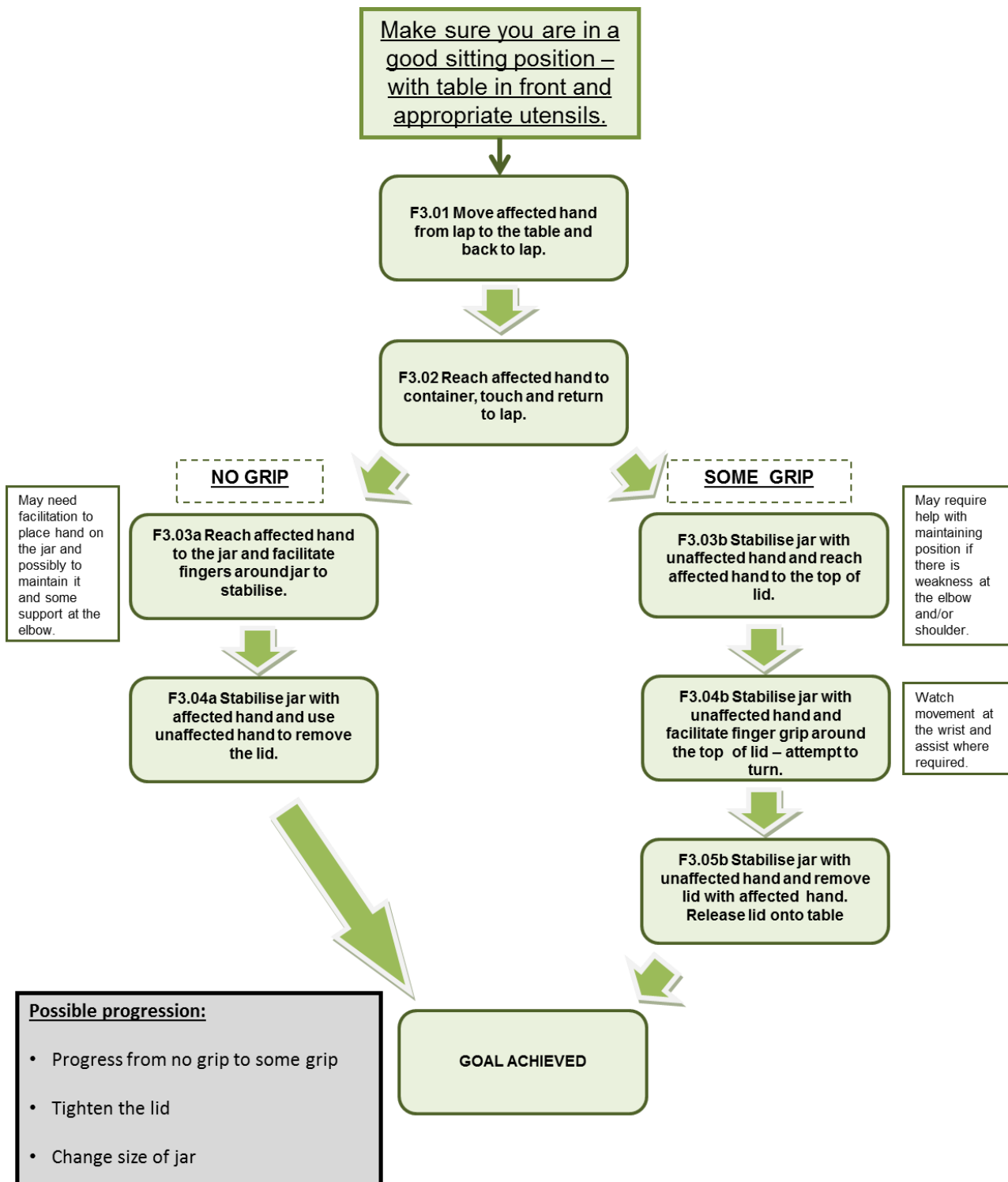


F3 – Removing lids/ open containers

1. Whole-task activity:



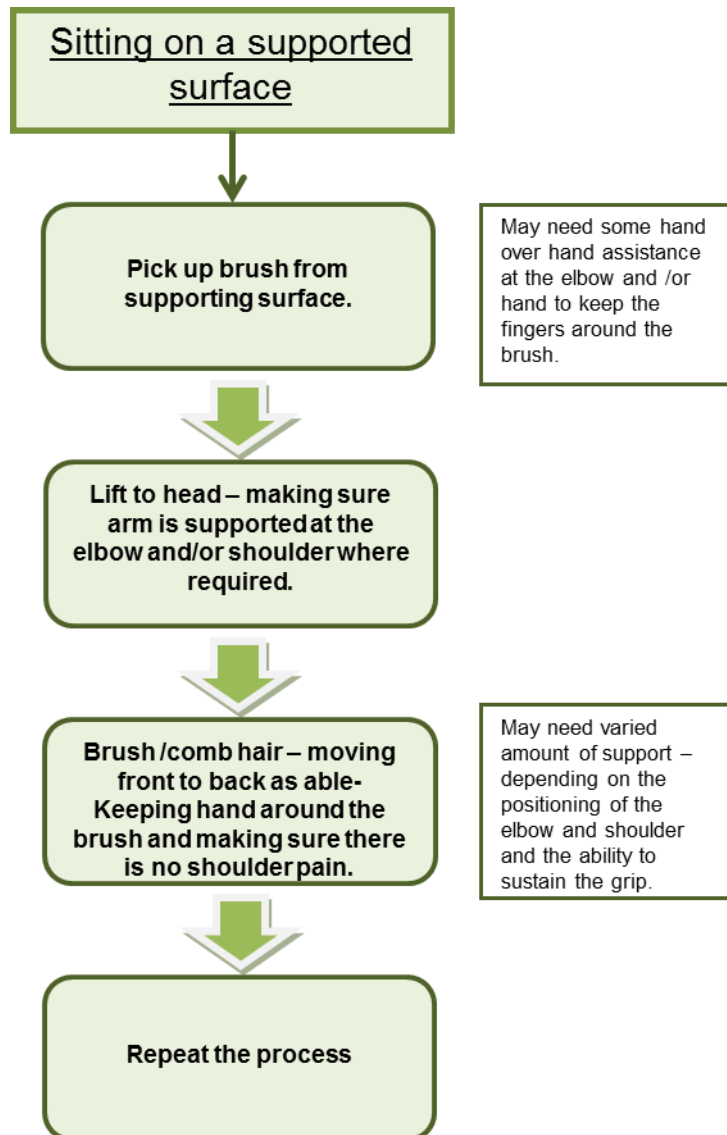
2. Part-task activities:



Other

PC1 – Brushing hair

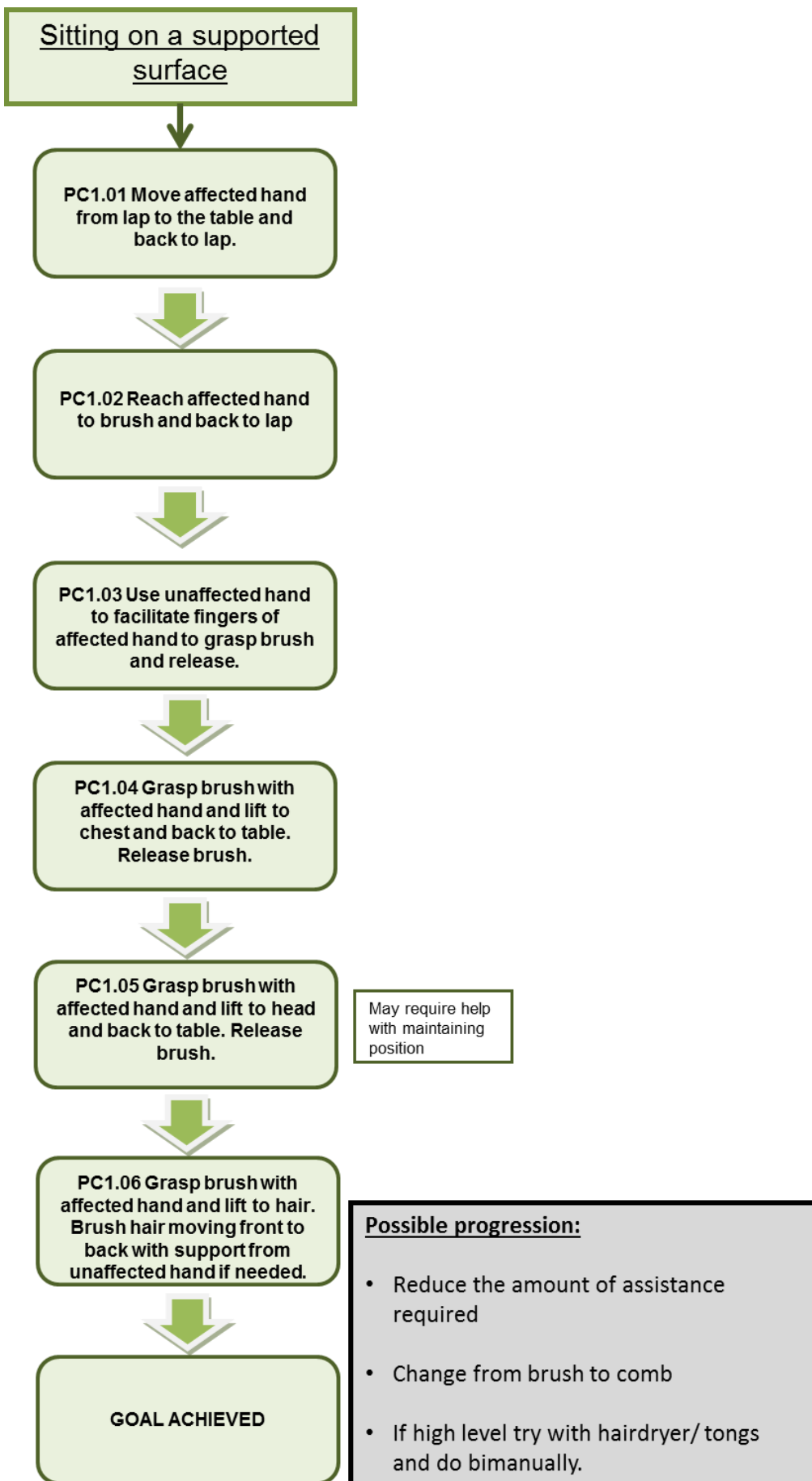
1. Whole-task activity:



Possible progression:

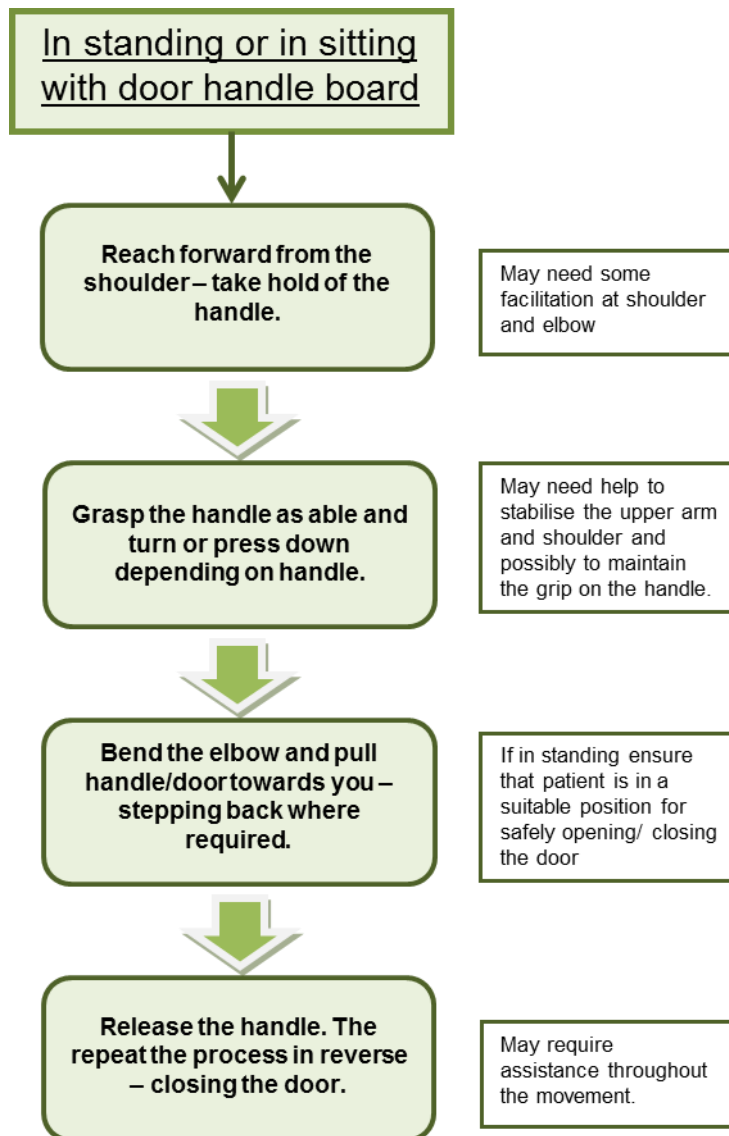
- Reduce the amount of assistance required
- Change from brush-comb
- If high level try with hairdryer/tongs and do bimanually.

2. Part-task activities:



FM1 – Opening doors with affected hand

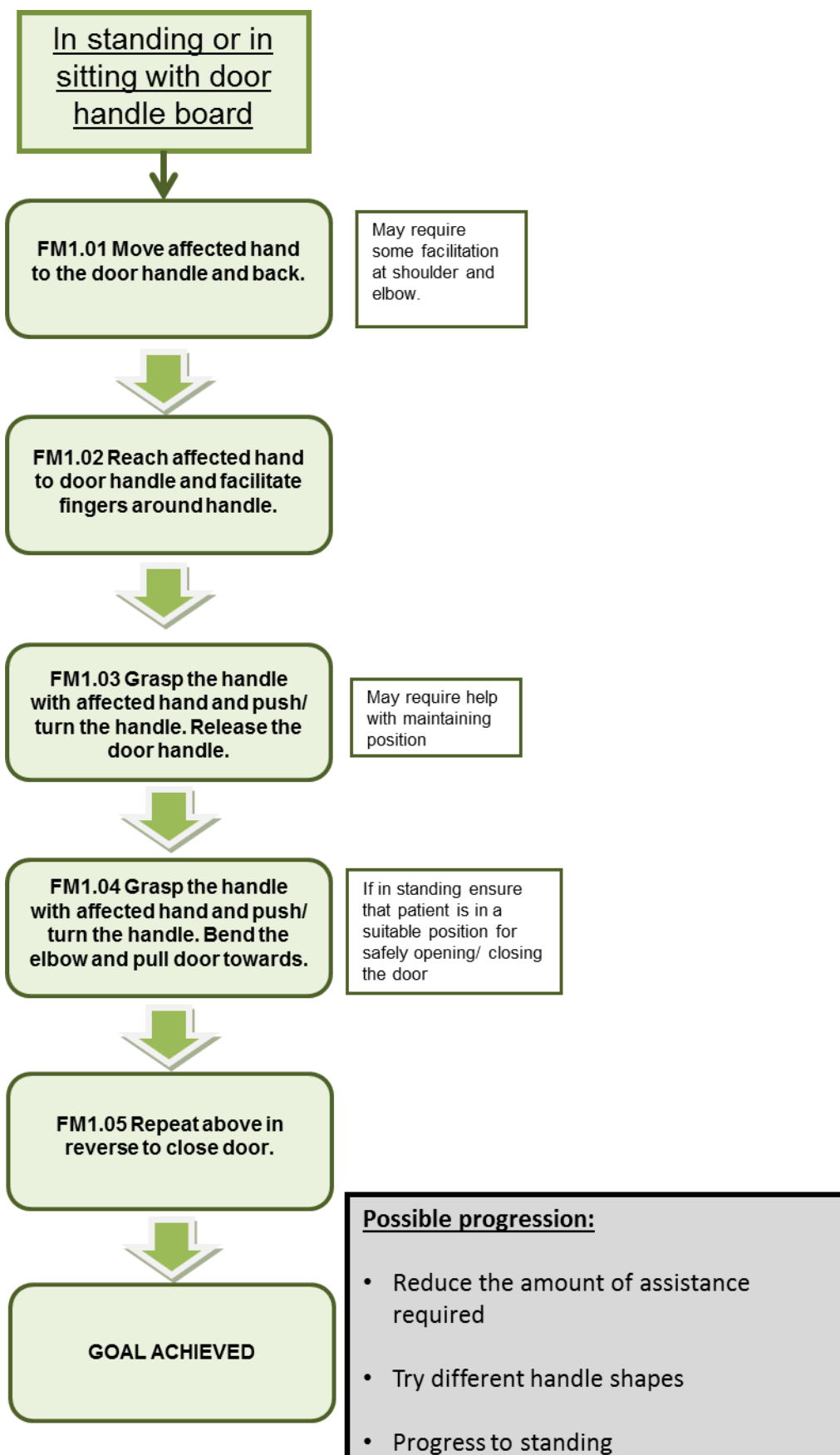
1. Whole-task activity:



Possible progression:

- Reduce the amount of assistance
- Try different handles of differing shapes.
- Progress to standing

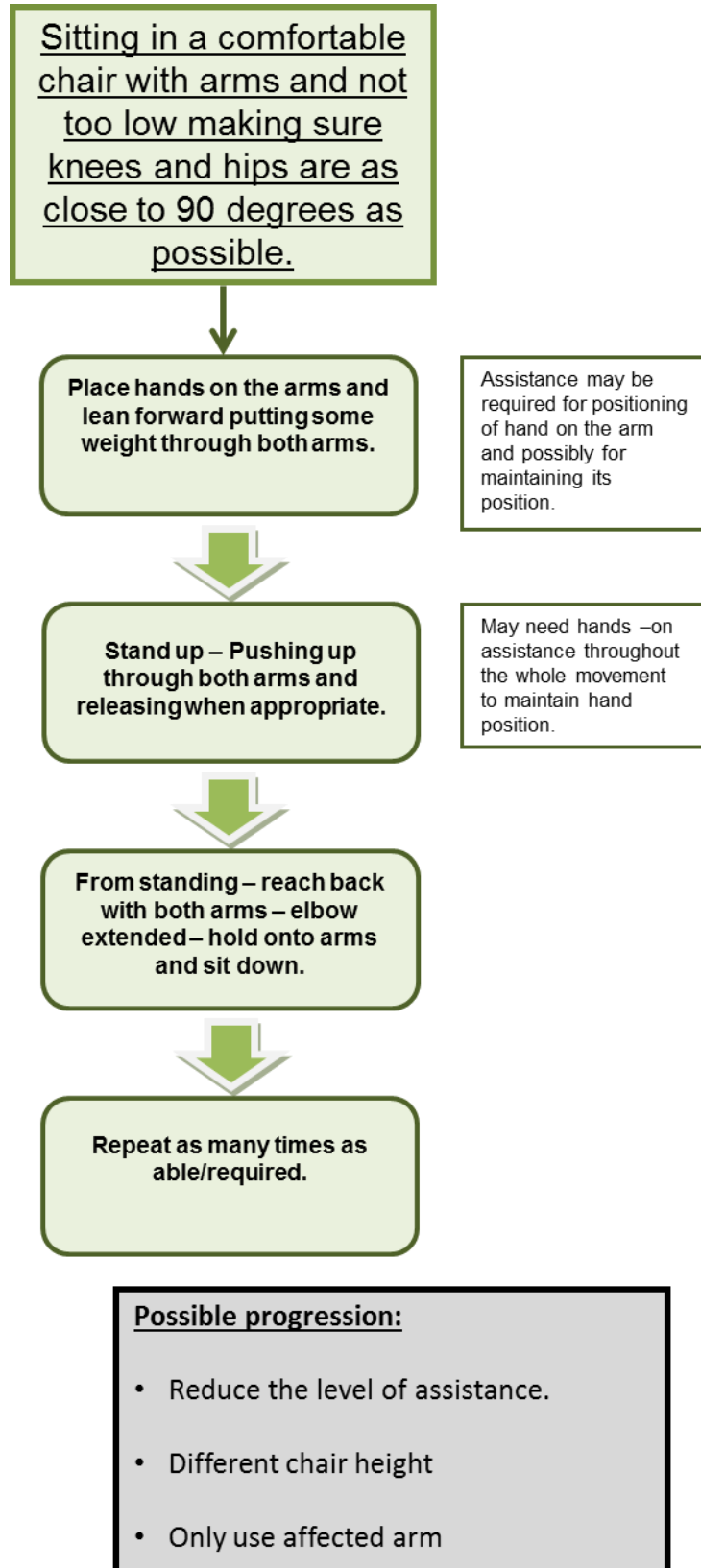
2. Part-task activities:



FM2 – Sit-to-stand using both hands

1. Whole-task activity:

NB participant must be able to stand with assistance from 1



Additional instructions for moving from sit to stand:

Please instruct the participant as follows:

1. place both hands (or, if not possible, the less-affected hand only) on the arm rests, or on the seat of the chair
2. shuffle bottom forward to the edge of the chair
3. move both feet back a little, keeping feet flat on the floor - and hip-width apart
4. in one movement, stand up as follows: keep looking straight ahead, lean forward from the hips and push down with your hands.
5. remain standing for a moment.

In people with an ankle foot orthosis (AFO) the affected foot is only to be moved back as far as is comfortable.

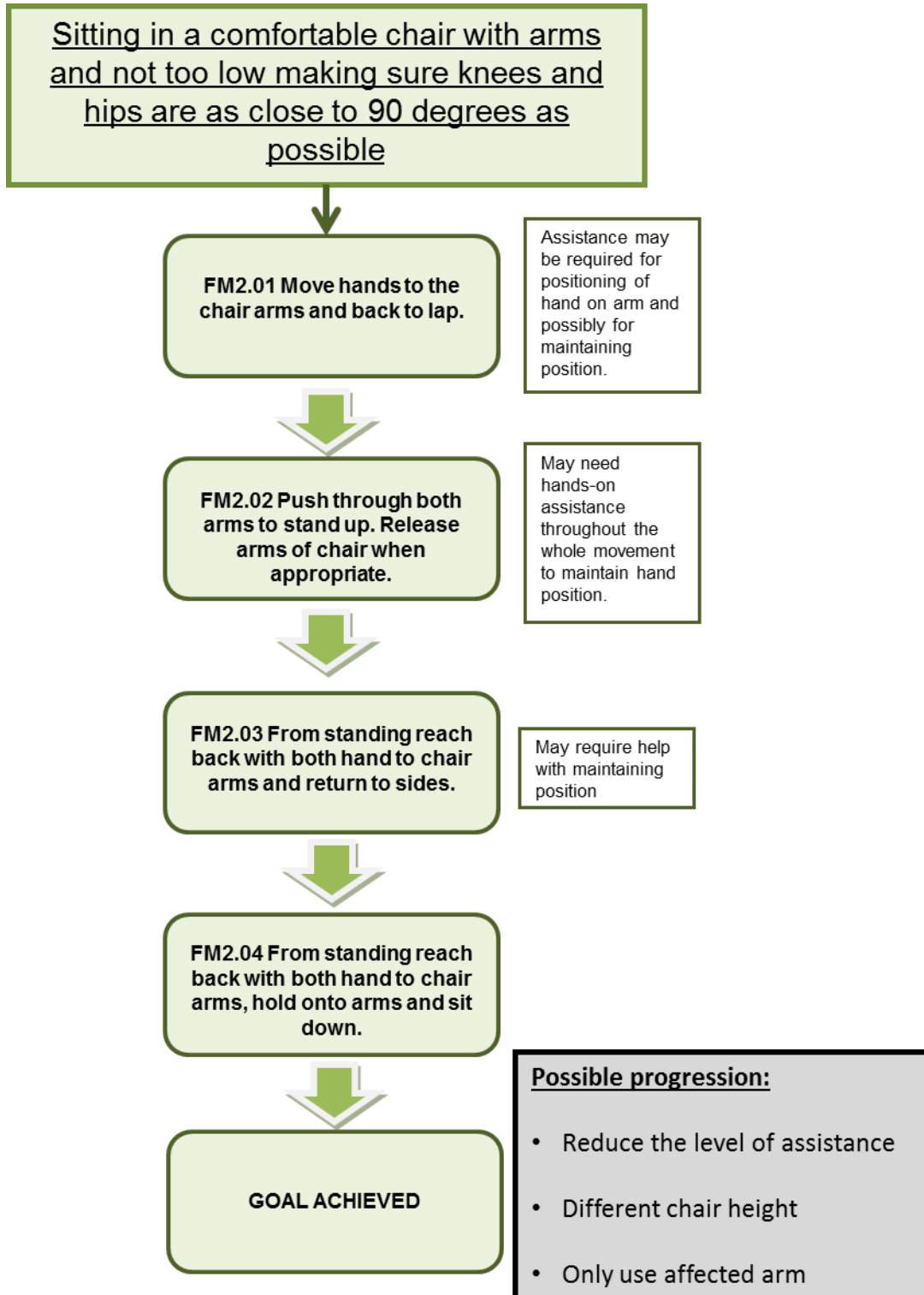
Additional instructions for moving from stand to sit:

Please instruct the participant as follows:

1. with the chair behind you, shuffle back until you can feel the seat of the chair against the back of your legs
2. check to see if there are arm rests
3. bending from the hips, reach for the arm rests, or for the seat of the chair.
4. gently lower yourself down.

2. Part-task activities:

NB participant must be able to stand with assistance from 1



5. Enhanced upper limb therapy documents

This Enhanced upper limb therapy 3: Warm-up stretches, goal choices and activity flowcharts manual is part of a series of documents developed to describe the RATULS enhanced upper limb therapy programme. The other documents in this series are:

- Enhanced upper limb therapy 1: Programme overview
- Enhanced upper limb therapy 2: How to deliver the programme

6. RATULS co-ordinating centre

For further information please contact the RATULS co-ordinating team:

Stroke Research Group

3-4 Claremont Terrace

Newcastle University

Newcastle Upon Tyne

NE2 4AE

Email: ratuls@ncl.ac.uk

Phone: 0191 2086779

Or refer to the RATULS website: <http://research.ncl.ac.uk/ratuls/>

This enhanced upper limb therapy manual has been produced by Dr Helen Bosomworth with input from Miss Lianne Brkic, Mrs Lydia Aird, Dr Lisa Shaw and Professor Frederike van Wijck.

© RATULS study team 2015:

Helen Rodgers, Newcastle University
Lydia Aird, Northumbria Healthcare NHS Foundation Trust
Sreeman Andole, Barking, Havering & Redbridge University Hospitals NHS Trust
David Cohen, London North West Hospitals NHS Trust
Jesse Dawson, University of Glasgow
Janet Eyre, Newcastle University
Tracy Finch, Newcastle University
Gary Ford, Newcastle University
Steven Hogg, lay member
Denise Howel, Newcastle University
Niall Hughes, NHS Greater Glasgow and Clyde
Hermano Igo Krebs, Massachusetts Institute of Technology
Chris Price, Northumbria Healthcare NHS Foundation Trust
Lynn Rochester, Newcastle University
Lisa Shaw, Newcastle University
Laura Ternent, Newcastle University
Duncan Turner, University of East London
Luke Vale, Newcastle University
Frederike van Wijck, Glasgow Caledonian University
Scott Wilkes, University of Sunderland