Appendix: Manual of the Mobility Test for Patients in Acute Care (MOTPA)

Introduction to and design of the test

MOTPA is a mobility test, consisting of 12 different *functional tasks* (Item A- L) of lying, sitting, standing and walking. This test shows the degree of assistance needed by the patient to succeed in the different functional tasks. By using the so called *milestone framework*, the degree of assistance needed is described and depicted in a ranking. For every functional task, the milestone with the highest level (with the least amount of assistance needed) acquired by the patient will be used as a test value. This test results in a *mobility profile* of every patient. By looking at the assessment profile, the degree of personal assistance and/or device assistance needed to succeed in each functional task can be easily seen. For every functional task different milestones are defined. Each milestone belongs to a certain level of assistance:

Level I: Without any assistance

The patient needs neither personal nor device assistance to succeed in the functional task.

Level II: Device assistance

The patient does not need any personal assistance but he/she uses a device (e.g. rollator) or an item/object (e.g. bed frame) to succeed in the task. According to the degree of support given by a device, different milestones can be ascribed within level 2, e.g. "walking with a rollator" or "walking with a walking stick".

Level III: Personal assistance

The patient needs personal assistance, e.g. oral feedback or instruction, tactile guidance or an assistant (nurse) who fully or partly takes over partial steps. Occasionally, the degree of personal assistance needed varies and there may also be cases when extra device assistance is necessary. Then, different milestones within level 3 are used to describe exactly the patient's performance.

A special form of personal assistance is described as "standby assistance for safety". It does not only imply the general presence and accompaniment by the assistant (nurse) but also the direct proximity to the patient that the assistant (nurse) can immediately intervene if needed. Consequently, the assistant stays very close to the patient.

Level IV: Complete takeover

Sometimes, the patient may not be able to take an active role in performing a certain task. In this case, the assistant would take over main functional phases. The performance of the patient then would be described as tolerating the assistant's action.

Procedure of MOTPA

1. Starting position is always the supine position.

2. Request the patient to perform every functional task of the MOTPA (Item A till L).

3. The given order (A-L) suggested by the MOTPA is useful. In individual cases, it is possible to vary the order. Nevertheless, the patient always must have the chance to perform **all** tasks.

4. Give the patient the opportunity to master the task independently. However, support your patient as soon as assistance is needed.

5. No patient should be overstrained while conducting the MOTPA. Every functional task is only carried out to such a degree as **you** perceive the patient of being able to perform it. At all times, the patient is allowed to stop the task if he/ she wishes.

6. If a functional task cannot be performed – e.g. because the patient's condition does not allow it -, document this as "not conducted" and give a short comment why it was impossible (e.g. "Patient is still too weak." or "circulation problems").

7. Document the results in the assessment profile. One cross per item/line only.

Advise for conducting the test in acute care settings

- Basically, personal assistance is only provided by trained and qualified personnel (usually by nurses). Assistances concerning accesses, ECG cables etc. do *not* count as assistance according to the MOTPA.

- Distinction between instruction and guidance:

  While conducting the test, strictly differentiate between *verbal test instructions* (e.g. „Please, move in your bed 10 centimeters to the top.") and *verbal guidance to perform a movement.* While providing personal assistance, verbal guidance is given to the patient to ensure that he/she is able to perform the task (e.g. "Put both legs up and shift your weight from your legs towards your head.").

  Former do not count as assistance, but only explain the task. Latter have to be considered as assistance.

- Not every improvement directly leads to a different test value:

In everyday life, care or therapy, you can continuously dose your assistance and you can also only provide the exact assistance needed by the individual patient (and not more). By using the MOTPA, no continuous values are measured. While repeatedly conducting the test, a new test value only occurs if a different milestone has been

reached by the patient – although you may perceive an improvement from test to test, e.g. because you provide less personal assistance or you take over fewer partial steps.

- Persons used as device assistance?

  Sometimes, a patient might hold or pull on to you. Please classify this as device assistance if you could have easily been replaced by an item of furniture or handle on the wall. However, as soon as you support verbally or move together with your patient, this must be classified as personal assistance.

Definitions of items and milestones

Item A. **Move to the top of the bed** (headboard put even)

Level 1: Without any assistance

| A.1 | The patient needs neither personal nor device assistance to move at least 10 centimeters towards the top of the bed. |

Level 2: Device assistance

| A.2 | The patient does not need any personal assistance but he/she uses device assistance (e.g. bed cradle, bed rail, automatic bed) to move at least 10 centimeters towards the top of the bed. |

Level 3: Personal assistance

| A.3 | The patient needs oral feedback/ instruction provided by an assistant (nurse) to move at least 10 centimeters towards the top of the bed. |

| A.4 | The patient needs oral feedback/ instruction **and** minimal tactile support (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move at least 10 centimeters towards the top of the bed. |

| A.5 | The patient can move at least 10 centimeters towards the top of the bed if an assistant (nurse) fully or partly takes over partial steps. |

Level 4: Complete takeover

| A.6 | The patient tolerates to be moved at least 10 centimeters towards the top of the bed by one or two assistants (nurse/s). |

Item B: **Move sideward in the bed** (headboard put even)

Level 1: Without any assistance

B.1 The patient needs neither personal nor device assistance to move at least 10 centimeters sideward in bed.

Level 2: Device assistance

B.2 The patient does not need any personal assistance but he/she uses existing device assistances to move at least 10 centimeters sideward in bed.

Level 3: Personal assistance

B.3 The patient needs oral feedback/ instruction provided by an assistant (nurse) to move at least 10 centimeters sideward in bed.

B.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move at least 10 centimeters sideward in bed.

B.5 The patient can move at least 10 centimeters sideward in bed if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

B.6 The patient tolerates to be moved at least 10 centimeters sideward in bed by one or two assistants (nurse/s).

Item C: Move from supine into lateral position

Level 1: Without any assistance

C.1 The patient needs neither personal nor device assistance to move from supine position into a stable lateral position.

Level 2: Device assistance

C.2 The patient does not need any personal assistance but he/she uses existing device assistances to move from supine position into a stable lateral position.

Level 3: Personal assistance

C.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to move from supine position into a stable lateral position.

C.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move from supine position into a stable lateral position.

C.5 The patient can move from supine position into a stable lateral position if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

C.6 The patient tolerates to be moved from supine position into a stable lateral position by one or two assistants (nurse/s).

Item D: **Transition from lying in a lateral position into sitting on the edge of the bed**

The headboard is increased by 20-30°. The sequence of movements finishes in a stable sitting position. Positioning and centering of the body at the end of the sequence of movements is part of this task.

Level 1: Without any assistance

D.1 The patient needs neither personal nor device assistance to move from lateral position into a stable sitting position on the edge of the bed.

Level 2: Device assistance

D.2 The patient does not need any personal assistance but he/she uses existing device assistances to move from lateral position into a stable sitting position on the edge of the bed.

Level 3: Personal assistance

D.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to move from lateral position into a stable sitting position on the edge of the bed.

D.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move from lateral position into a stable sitting position on the edge of the bed.

D.5 The patient can move from lateral position into a stable sitting position on the edge of the bed if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

D.6 The patient tolerates to be moved from lateral position into a stable sitting position on the edge of the bed by one or two assistants (nurse/s).

Item E: Move towards the edge of the bed

The sequence of movements starts in a stable sitting position and finishes in a stable sitting position on the edge of the bed with feet touching the ground. Positioning and centering of the body at the end of the sequence of movements is part of this task.

Level 1: Without any assistance

E.1 The patient needs neither personal nor device assistance to move at least 10 centimeters towards the edge of the bed.

Level 2: Device assistance

E.2 The patient does not need any personal assistance but he/she uses existing device assistances to move at least 10 centimeters towards the edge of the bed.

Level 3: Personal assistance

E.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to move at least 10 centimeters towards the edge of the bed.

E.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move at least 10 centimeters towards the edge of the bed.

E.5 The patient can move at least 10 centimeters towards the edge of the bed if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

E.6 The patient tolerates to be moved from sitting position at least 10 centimeters towards the edge of the bed by one or two assistants (nurse/s).

Item F: Keep a sitting position

Level 1: Without any assistance

F.1 The patient needs neither personal nor device assistance to sit at least one minute in a stable position on the edge of the bed.

Level 2: Device assistance

F.2 The patient does not need any personal assistance but he/she holds on existing device assistances to sit at least one minute in a stable position on the edge of the bed.

Level 3: Personal assistance

F.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to sit at least one minute in a stable position on the edge of the bed.

F.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to sit at least one minute in a stable position on the edge of the bed.

Level 4: Complete takeover

F.5 The patient tolerates that one or two assistants (nurse/s) keep(s) the stable sitting position on the edge of the bed.

Item G: Stand up from the edge of the bed

Level 1: Without any assistance

G.1 The patient needs neither personal nor device assistance to move from a sitting position on the edge of the bed into a standing position.

Level 2: Device assistance

G.2 The patient does not need any personal assistance but he/she uses existing device assistances (e.g. infusion stands, bedside table) to move from a sitting position on the edge of the bed into a standing position.

Level 3: Personal assistance

G.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to move from a sitting position on the edge of the bed into a standing position.

G.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move from a sitting position on the edge of the bed into a standing position.

G.5 The patient can move from a sitting position on the edge of the bed into a standing position if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

G.6 The patient tolerates to be moved from a sitting position on the edge of the bed into a standing position by one or two assistants (nurse/s).

Item H: **Turn while standing** (180°, half turn)

Level 1: Without any assistance

H.1 | The patient needs neither personal nor device assistance to turn on the spot.

Level 2: Device assistance

H.2 | The patient does not need any personal assistance but he/she uses existing device assistances (e.g. infusion stands, bed) to turn on the spot.

Level 3: Personal assistance

H.3 | The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to turn on the spot.

H.4 | The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to turn on the spot .

H.5 | The patient can turn on the spot if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

H.6 | The patient tolerates that one or two assistants (nurse/s) conduct(s) the rotation.

Item I: Walk backwards

Level 1: Without any assistance

I.1 The patient needs neither personal nor device assistance to walk at least three steps backwards.

Level 2: Device assistance

I.2 The patient does not need any personal assistance but he/she uses existing device assistances (e.g. bed, infusion stands) to walk at least three steps backwards.

Level 3: Personal assistance

I.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to walk at least three steps backwards.

I.4 The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight correction of direction, slight support) provided by an assistant (nurse) to walk at least three steps backwards.

I.5 The patient can walk at least three steps backwards if an assistant (nurse) fully or partly takes over partial steps.

Item J: From standing into a sitting position

Level 1: Without any assistance

J.1 | The patient needs neither personal nor device assistance to sit down into a chair.

Level 2: Device assistance

J.2 | The patient does not need any personal assistance but he/she uses existing device assistances to sit down into a chair.

Level 3: Personal assistance

J.3 | The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to move from standing into a sitting position.

J.4 | The patient needs oral feedback/ instruction **and** minimal tactile guidance (e.g. slight intensification of thrust, slight correction of direction, slight support) provided by an assistant (nurse) to move from standing into a sitting position.

J.5 | The patient can move from standing into a sitting position if an assistant (nurse) fully or partly takes over partial steps.

Level 4: Complete takeover

J.6 | The patient tolerates that one or two assistants (nurse/s) conduct(s) the movement from the standing into the sitting position.

Item K: Short walk (6m)

Level 1: Without any assistance

K.1 The patient needs neither personal nor device assistance to walk at least six meters.

Level 2: Device assistance

K.2 The patient does not need any personal assistance but he/she uses existing device assistances (e.g. infusion stands, rollator etc.) to walk at least six meters.

Level 3: Personal assistance

K.3 The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to walk at least six meters.

K.4 The patient can walk at least six meters if he/she is led by an assistant (nurse).

K.5 The patient can walk at least six meters if he/she is supported by an assistant (nurse).

Item L: Walk (30m)

Level 1: Without any assistance

L.1 | The patient needs neither personal nor device assistance to walk at least 30m.

Level 2: Device assistance

L.2 | The patient does not need any personal assistance but he/she uses existing device assistances (e.g. infusion stands, rollator etc.) to walk at least 30m.

Level 3: Personal assistance

L.3 | The patient needs oral feedback/ instruction **and/or** standby assistance for safety provided by an assistant (nurse) to walk at least 30m.

L.4 | The patient can walk at least 30m if he/she is led by an assistant (nurse).

L.5 | The patient can walk at least 30m if he/she is supported by an assistant (nurse).