



## **Instructions for the ABILHAND questionnaire**

### **The ABILHAND questionnaire**

The ABILHAND questionnaire was developed as a measure of manual ability as perceived by the patient. It explores the most representative inventory of manual activities. Some items were selected from existing scales; others were devised to extend the range of activities. The first application of the questionnaire in a sample of rheumatoid arthritis patients (Arch Phys Med Rehabil 1998; 79: 1038-42) showed that the items defined a valid manual ability scale. A second application of the questionnaire in a larger sample of chronic stroke patients showed that the unimanual activities (usually realized with one hand) were too easy for the patients. So, a subset of 23 bimanual activities (usually realized with two hands) has been retained and calibrated for chronic stroke patients (Stroke 2001; 32: 1627-34). ABILHAND was originally developed using the Rasch measurement model. It allows to convert ordinal scores into linear measures located on a unidimensional scale.

### **Procedures**

The ABILHAND questionnaire is administered on an interview basis (patients do not realize the activities). Patients are asked to estimate the ease or difficulty in performing each activity, when the activities are done:

- Without other technical or human help (even if the patient actually uses help in daily life);
- Irrespective of the limb(s) actually used to do the activity;
- Whatever the strategy used (any compensation is allowed).

During the evaluation, a 3-level response scale is presented to the patients. Patients are asked to rate their perception on the response scale as either "Impossible", "Difficult" or "Easy". Activities not attempted in the last 3 months are not scored and are entered as missing responses (tick the question mark). For any activity the four potential answers are:

- Impossible: the patient is unable to perform the activity without using any other help;
- Difficult: the patient is able to perform the activity without any help but experiences some difficulty;
- Easy: the patient is able to perform the activity without any help and experiences no difficulty;
- Question mark: the patient cannot estimate the difficulty of the activity because he/she has never done the activity. Note that when a patient has never attempted the activity, the rater needs to make sure why it is so. If an activity was never attempted because it is impossible, then it must be scored as "Impossible" rather than "Question mark".

The instructions are given to the patient only at the beginning of the test. Five items are used for training in order to help the patient in feeling each level of the rating scale and in using the whole amplitude of the response scale. The subsequent activities are neither preceded nor followed by any instruction. The examiner can repeat the instructions whenever the patient shows some hesitation in answering.

### **Activities order**

The activities of the ABILHAND questionnaire are presented in a random order to avoid any systematic effect. Ten different random orders of presentation are used. The rater must select the next one of the 10 orders for each new assessment, no matter which patient is tested.

### **Package content**

- 1 instruction sheet;
- Testing forms in 10 random orders (10 sheets).



## Manual Ability Mesure

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Pulling up the zipper of trousers           |            |           |      |   |
| 2  | Peeling onions                              |            |           |      |   |
| 3  | Sharpening a pencil                         |            |           |      |   |
| 4  | Taking the cap off a bottle                 |            |           |      |   |
| 5  | Filing one's nails                          |            |           |      |   |
| 6  | Peeling potatoes with a knife               |            |           |      |   |
| 7  | Buttoning up trousers                       |            |           |      |   |
| 8  | Opening a screw-topped jar                  |            |           |      |   |
| 9  | Cutting one's nails                         |            |           |      |   |
| 10 | Tearing open a pack of chips                |            |           |      |   |
| 11 | Unwrapping a chocolate bar                  |            |           |      |   |
| 12 | Hammering a nail                            |            |           |      |   |
| 13 | Spreading butter on a slice of bread        |            |           |      |   |
| 14 | Washing one's hands                         |            |           |      |   |
| 15 | Buttoning up a shirt                        |            |           |      |   |
| 16 | Threading a needle                          |            |           |      |   |
| 17 | Cutting meat                                |            |           |      |   |
| 18 | Wrapping up gifts                           |            |           |      |   |
| 19 | Fastening the zipper of a jacket            |            |           |      |   |
| 20 | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 21 | Shelling hazel nuts                         |            |           |      |   |
| 22 | Opening mail                                |            |           |      |   |
| 23 | Squeezing toothpaste on a toothbrush        |            |           |      |   |



## Manual Ability Mesure

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Tearing open a pack of chips                |            |           |      |   |
| 2  | Opening mail                                |            |           |      |   |
| 3  | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 4  | Taking the cap off a bottle                 |            |           |      |   |
| 5  | Filing one's nails                          |            |           |      |   |
| 6  | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 7  | Peeling onions                              |            |           |      |   |
| 8  | Opening a screw-topped jar                  |            |           |      |   |
| 9  | Pulling up the zipper of trousers           |            |           |      |   |
| 10 | Spreading butter on a slice of bread        |            |           |      |   |
| 11 | Hammering a nail                            |            |           |      |   |
| 12 | Sharpening a pencil                         |            |           |      |   |
| 13 | Cutting one's nails                         |            |           |      |   |
| 14 | Shelling hazel nuts                         |            |           |      |   |
| 15 | Threading a needle                          |            |           |      |   |
| 16 | Washing one's hands                         |            |           |      |   |
| 17 | Buttoning up trousers                       |            |           |      |   |
| 18 | Peeling potatoes with a knife               |            |           |      |   |
| 19 | Fastening the zipper of a jacket            |            |           |      |   |
| 20 | Unwrapping a chocolate bar                  |            |           |      |   |
| 21 | Buttoning up a shirt                        |            |           |      |   |
| 22 | Wrapping up gifts                           |            |           |      |   |
| 23 | Cutting meat                                |            |           |      |   |



## Manual Ability Measure

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Wrapping up gifts                           |            |           |      |   |
| 2  | Unwrapping a chocolate bar                  |            |           |      |   |
| 3  | Filing one's nails                          |            |           |      |   |
| 4  | Spreading butter on a slice of bread        |            |           |      |   |
| 5  | Cutting meat                                |            |           |      |   |
| 6  | Buttoning up trousers                       |            |           |      |   |
| 7  | Opening a screw-topped jar                  |            |           |      |   |
| 8  | Peeling potatoes with a knife               |            |           |      |   |
| 9  | Pulling up the zipper of trousers           |            |           |      |   |
| 10 | Sharpening a pencil                         |            |           |      |   |
| 11 | Threading a needle                          |            |           |      |   |
| 12 | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 13 | Washing one's hands                         |            |           |      |   |
| 14 | Tearing open a pack of chips                |            |           |      |   |
| 15 | Buttoning up a shirt                        |            |           |      |   |
| 16 | Taking the cap off a bottle                 |            |           |      |   |
| 17 | Fastening the zipper of a jacket            |            |           |      |   |
| 18 | Cutting one's nails                         |            |           |      |   |
| 19 | Hammering a nail                            |            |           |      |   |
| 20 | Opening mail                                |            |           |      |   |
| 21 | Peeling onions                              |            |           |      |   |
| 22 | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 23 | Shelling hazel nuts                         |            |           |      |   |



## Manual Ability Mesure

Patient : \_\_\_\_\_ Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Hammering a nail                            |            |           |      |   |
| 2  | Buttoning up a shirt                        |            |           |      |   |
| 3  | Tearing open a pack of chips                |            |           |      |   |
| 4  | Threading a needle                          |            |           |      |   |
| 5  | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 6  | Fastening the zipper of a jacket            |            |           |      |   |
| 7  | Cutting meat                                |            |           |      |   |
| 8  | Filing one's nails                          |            |           |      |   |
| 9  | Wrapping up gifts                           |            |           |      |   |
| 10 | Spreading butter on a slice of bread        |            |           |      |   |
| 11 | Washing one's hands                         |            |           |      |   |
| 12 | Unwrapping a chocolate bar                  |            |           |      |   |
| 13 | Peeling potatoes with a knife               |            |           |      |   |
| 14 | Pulling up the zipper of trousers           |            |           |      |   |
| 15 | Buttoning up trousers                       |            |           |      |   |
| 16 | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 17 | Shelling hazel nuts                         |            |           |      |   |
| 18 | Peeling onions                              |            |           |      |   |
| 19 | Opening a screw-topped jar                  |            |           |      |   |
| 20 | Taking the cap off a bottle                 |            |           |      |   |
| 21 | Opening mail                                |            |           |      |   |
| 22 | Cutting one's nails                         |            |           |      |   |
| 23 | Sharpening a pencil                         |            |           |      |   |



## Manual Ability Mesure

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Tearing open a pack of chips                |            |           |      |   |
| 2  | Filing one's nails                          |            |           |      |   |
| 3  | Unwrapping a chocolate bar                  |            |           |      |   |
| 4  | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 5  | Pulling up the zipper of trousers           |            |           |      |   |
| 6  | Spreading butter on a slice of bread        |            |           |      |   |
| 7  | Fastening the zipper of a jacket            |            |           |      |   |
| 8  | Taking the cap off a bottle                 |            |           |      |   |
| 9  | Threading a needle                          |            |           |      |   |
| 10 | Opening a screw-topped jar                  |            |           |      |   |
| 11 | Hammering a nail                            |            |           |      |   |
| 12 | Cutting one's nails                         |            |           |      |   |
| 13 | Buttoning up a shirt                        |            |           |      |   |
| 14 | Washing one's hands                         |            |           |      |   |
| 15 | Cutting meat                                |            |           |      |   |
| 16 | Wrapping up gifts                           |            |           |      |   |
| 17 | Peeling potatoes with a knife               |            |           |      |   |
| 18 | Sharpening a pencil                         |            |           |      |   |
| 19 | Opening mail                                |            |           |      |   |
| 20 | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 21 | Peeling onions                              |            |           |      |   |
| 22 | Buttoning up trousers                       |            |           |      |   |
| 23 | Shelling hazel nuts                         |            |           |      |   |



## Manual Ability Mesure

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Taking the cap off a bottle                 |            |           |      |   |
| 2  | Buttoning up a shirt                        |            |           |      |   |
| 3  | Sharpening a pencil                         |            |           |      |   |
| 4  | Opening mail                                |            |           |      |   |
| 5  | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 6  | Washing one's hands                         |            |           |      |   |
| 7  | Tearing open a pack of chips                |            |           |      |   |
| 8  | Wrapping up gifts                           |            |           |      |   |
| 9  | Opening a screw-topped jar                  |            |           |      |   |
| 10 | Shelling hazel nuts                         |            |           |      |   |
| 11 | Filing one's nails                          |            |           |      |   |
| 12 | Fastening the zipper of a jacket            |            |           |      |   |
| 13 | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 14 | Pulling up the zipper of trousers           |            |           |      |   |
| 15 | Peeling onions                              |            |           |      |   |
| 16 | Spreading butter on a slice of bread        |            |           |      |   |
| 17 | Cutting one's nails                         |            |           |      |   |
| 18 | Threading a needle                          |            |           |      |   |
| 19 | Cutting meat                                |            |           |      |   |
| 20 | Unwrapping a chocolate bar                  |            |           |      |   |
| 21 | Peeling potatoes with a knife               |            |           |      |   |
| 22 | Buttoning up trousers                       |            |           |      |   |
| 23 | Hammering a nail                            |            |           |      |   |

**Manual Ability Measure**

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Unwrapping a chocolate bar                  |            |           |      |   |
| 2  | Cutting one's nails                         |            |           |      |   |
| 3  | Filing one's nails                          |            |           |      |   |
| 4  | Shelling hazel nuts                         |            |           |      |   |
| 5  | Hammering a nail                            |            |           |      |   |
| 6  | Fastening the zipper of a jacket            |            |           |      |   |
| 7  | Peeling potatoes with a knife               |            |           |      |   |
| 8  | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 9  | Sharpening a pencil                         |            |           |      |   |
| 10 | Buttoning up trousers                       |            |           |      |   |
| 11 | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 12 | Washing one's hands                         |            |           |      |   |
| 13 | Threading a needle                          |            |           |      |   |
| 14 | Opening mail                                |            |           |      |   |
| 15 | Pulling up the zipper of trousers           |            |           |      |   |
| 16 | Opening a screw-topped jar                  |            |           |      |   |
| 17 | Taking the cap off a bottle                 |            |           |      |   |
| 18 | Peeling onions                              |            |           |      |   |
| 19 | Tearing open a pack of chips                |            |           |      |   |
| 20 | Cutting meat                                |            |           |      |   |
| 21 | Wrapping up gifts                           |            |           |      |   |
| 22 | Spreading butter on a slice of bread        |            |           |      |   |
| 23 | Buttoning up a shirt                        |            |           |      |   |



## Manual Ability Mesure

Patient : \_\_\_\_\_ Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Washing one's hands                         |            |           |      |   |
| 2  | Tearing open a pack of chips                |            |           |      |   |
| 3  | Opening mail                                |            |           |      |   |
| 4  | Shelling hazel nuts                         |            |           |      |   |
| 5  | Fastening the zipper of a jacket            |            |           |      |   |
| 6  | Taking the cap off a bottle                 |            |           |      |   |
| 7  | Buttoning up a shirt                        |            |           |      |   |
| 8  | Cutting one's nails                         |            |           |      |   |
| 9  | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 10 | Threading a needle                          |            |           |      |   |
| 11 | Buttoning up trousers                       |            |           |      |   |
| 12 | Cutting meat                                |            |           |      |   |
| 13 | Unwrapping a chocolate bar                  |            |           |      |   |
| 14 | Wrapping up gifts                           |            |           |      |   |
| 15 | Hammering a nail                            |            |           |      |   |
| 16 | Pulling up the zipper of trousers           |            |           |      |   |
| 17 | Filing one's nails                          |            |           |      |   |
| 18 | Peeling onions                              |            |           |      |   |
| 19 | Spreading butter on a slice of bread        |            |           |      |   |
| 20 | Opening a screw-topped jar                  |            |           |      |   |
| 21 | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 22 | Sharpening a pencil                         |            |           |      |   |
| 23 | Peeling potatoes with a knife               |            |           |      |   |

**Manual Ability Mesure**

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | <b>How DIFFICULT are the following activities?</b> | <b>Impossible</b> | <b>Difficult</b> | <b>Easy</b> | <b>?</b> |
|----|----------------------------------------------------|-------------------|------------------|-------------|----------|
| 1  | Peeling potatoes with a knife                      |                   |                  |             |          |
| 2  | Washing one's hands                                |                   |                  |             |          |
| 3  | Peeling onions                                     |                   |                  |             |          |
| 4  | Taking the cap off a bottle                        |                   |                  |             |          |
| 5  | Hammering a nail                                   |                   |                  |             |          |
| 6  | Tearing open a pack of chips                       |                   |                  |             |          |
| 7  | Shelling hazel nuts                                |                   |                  |             |          |
| 8  | Filing one's nails                                 |                   |                  |             |          |
| 9  | Buttoning up trousers                              |                   |                  |             |          |
| 10 | Spreading butter on a slice of bread               |                   |                  |             |          |
| 11 | Squeezing toothpaste on a toothbrush               |                   |                  |             |          |
| 12 | Wrapping up gifts                                  |                   |                  |             |          |
| 13 | Pulling up the zipper of trousers                  |                   |                  |             |          |
| 14 | Sharpening a pencil                                |                   |                  |             |          |
| 15 | Threading a needle                                 |                   |                  |             |          |
| 16 | Fastening the zipper of a jacket                   |                   |                  |             |          |
| 17 | Cutting meat                                       |                   |                  |             |          |
| 18 | Cutting one's nails                                |                   |                  |             |          |
| 19 | Unwrapping a chocolate bar                         |                   |                  |             |          |
| 20 | Opening mail                                       |                   |                  |             |          |
| 21 | Buttoning up a shirt                               |                   |                  |             |          |
| 22 | Fastening a snap (jacket, bag, ...)                |                   |                  |             |          |
| 23 | Opening a screw-topped jar                         |                   |                  |             |          |



## Manual Ability Mesure

Patient : \_\_\_\_\_

Date : \_\_\_\_\_

|    | How DIFFICULT are the following activities? | Impossible | Difficult | Easy | ? |
|----|---------------------------------------------|------------|-----------|------|---|
| 1  | Buttoning up a shirt                        |            |           |      |   |
| 2  | Squeezing toothpaste on a toothbrush        |            |           |      |   |
| 3  | Tearing open a pack of chips                |            |           |      |   |
| 4  | Fastening a snap (jacket, bag, ...)         |            |           |      |   |
| 5  | Opening a screw-topped jar                  |            |           |      |   |
| 6  | Opening mail                                |            |           |      |   |
| 7  | Peeling potatoes with a knife               |            |           |      |   |
| 8  | Sharpening a pencil                         |            |           |      |   |
| 9  | Buttoning up trousers                       |            |           |      |   |
| 10 | Washing one's hands                         |            |           |      |   |
| 11 | Threading a needle                          |            |           |      |   |
| 12 | Taking the cap off a bottle                 |            |           |      |   |
| 13 | Pulling up the zipper of trousers           |            |           |      |   |
| 14 | Cutting one's nails                         |            |           |      |   |
| 15 | Unwrapping a chocolate bar                  |            |           |      |   |
| 16 | Shelling hazel nuts                         |            |           |      |   |
| 17 | Peeling onions                              |            |           |      |   |
| 18 | Hammering a nail                            |            |           |      |   |
| 19 | Filing one's nails                          |            |           |      |   |
| 20 | Spreading butter on a slice of bread        |            |           |      |   |
| 21 | Wrapping up gifts                           |            |           |      |   |
| 22 | Fastening the zipper of a jacket            |            |           |      |   |
| 23 | Cutting meat                                |            |           |      |   |