Shoulder Function Index (SFInX)

clinical assessment form and instructional manual
When citing the SFInX, please refer to one of the SFInX development articles rather than this manual, citing at least the development article published in 2015 in BMC Musculoskeletal Disorders titled “The Shoulder Function Index (SFInX): a clinician-observed outcome measure for people with a proximal humeral fracture”

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Shoulder Function Index - clinical assessment form

Patient name: _______________________________________

Time after injury (in weeks): _________ Side of injury: R / L

Date of assessment: ___ / ___ / ______

| Items                                      | Scores     |
|--------------------------------------------|------------|
|                                            | 0 | 1 | 2 |
| 1 Drinking from a cup                      | □ | Unable | □ | Able |
| 2 Washing the opposite armpit              | □ | Unable | □ | Able |
| 3 Washing the back of the opposite shoulder| □ | Unable | □ | Partially able | □ | Able |
| 4 Combing hair                             | □ | Unable | □ | Partially able | □ | Able |
| 5 Tucking shirt into pants                 | □ | Unable | □ | Partially able | □ | Able |
| 6 Washing lower back                       | □ | Unable | □ | Partially able | □ | Able |
| 7 Lying on the affected side               | □ | Unable | □ | Partially able | □ | Able |
| 8 Reaching behind to get an object         | □ | Unable | □ | Able |
| 9 Holding an object for a longer period    | □ | Unable | □ | Able |
| 10 Carrying a heavier object with two hands| □ | Unable | □ | Partially able | □ | Able |
| 11 Placing an object on a shelf at shoulder level | □ | Unable | □ | Able |
| 12 Sustaining activity above head          | □ | Unable | □ | Partially able | □ | Able |
| 13 Throwing a ball with two hands over-head| □ | Unable | □ | Partially able | □ | Able |

Total number of points (raw score) =

| Raw score | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|-----------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| SFInX score | 0 | 12 | 20 | 27 | 32 | 36 | 40 | 43 | 46 | 49 | 52 | 55 | 58 | 61 | 64 | 67 | 70 | 73 | 77 | 81 | 89 | 100 |
Shoulder Function Index - hierarchy of SFInX items

**HARDEST**

ITEM 3  washing back opposite shoulder  
ITEM 6  washing lower back  
ITEM 12 moving an object above head level  
ITEM 13 throwing a ball with two hands overhead  
ITEM 4  combing hair/running hand through hair  
ITEM 8  reaching behind to get an object  
ITEM 10 carrying a heavy object with two hands  
ITEM 11 placing an object on a shelf at shoulder level  
ITEM 5  tucking shirt into pants  
ITEM 9  holding an object for a longer period  
ITEM 2  washing opposite armpit  
ITEM 7  lying on affected side  

**EASIEST**

ITEM 1  drinking from a cup
Descriptions of SFInX items
ITEM 1: drinking from a cup

Description  The ability to lift the cup to the mouth to drink, and to place the cup back is being judged.

Equipment  cup

Position  sitting

Instruction (clinician)  place a cup without handles (or instruct not to use the handles) in front of the person to be tested.

Instruction (patient)  while keeping your head in an upright position, reach and pick up the cup with the hand of the affected arm. Move the cup to your mouth to drink, then place the cup back.

Decision rules  

Able  reaches for the cup with the hand of the affected arm, picks up the cup, moves the cup to the mouth and places the cup back to starting position; affected arm is held off the body; movements of the affected arm are unsupported

Unable  cannot take the cup to the mouth to drink; or less (for example, unable to reach or pick up cup)
ITEM 2: washing opposite armpit

Description  The ability to simulate washing of the opposite armpit is being tested

Equipment  —

Position  sitting

Instruction  (patient) reach with the hand of the affected arm to the armpit of the opposite arm and apply pressure while moving the hand of the affected arm backward and forward, up and down

Decision rules

Able reaches, applies pressure and is able to move the palm of the hand of the affected arm in all directions under the armpit of the opposite side; movements of the affected arm should be unsupported; comparison of hand positioning with the unaffected side is recommended

Unable cannot reach the opposite armpit equally far as the unaffected arm (reaching with fingers only is not sufficient to ‘wash’ the opposite armpit)

OR

reaches, but cannot apply pressure and/or make movements with the hand of the affected arm
ITEM 3: washing back opposite shoulder

Description
The ability to simulate washing of the back of the opposite shoulder is being tested

Equipment
—

Position
sitting

Instruction (patient)
reach with the hand of the affected arm across the body to the back the opposite shoulder and apply pressure while moving the hand of the affected arm sideways

Decision rules
Able
reaches, applies pressure and moves the hand of the affected arm sideways; movements of the affected arm should be unsupported; comparison of hand positioning with the unaffected side is recommended

Partially Able
reaches equally far as the unaffected arm, but cannot apply pressure and/or make the required movements to the sides with the hand of the affected arm

Unable
cannot reach the back of the opposite shoulder equally far as the unaffected arm (for example, reaches top of opposite shoulder only)
ITEM 4: combing hair/running hand through hair

| Description | The ability to simulate combing hair (or running hand through hair) with the affected arm is being tested |
|-------------|--------------------------------------------------------------------------------------------------|
| Equipment   | —                                                                                               |
| Position    | sitting                                                                                         |
| Instruction (patient) | while keeping your head in an upright position, move the fingers and palm of the hand of the affected arm from your forehead over the top of the head into your neck |

**Decision rules**

| Able | moves fingers and palm of the hand of affected side from the mid-forehead into the neck; movements of the affected arm are unsupported; head is held in upright position |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Partially Able | moves fingers and palm of the hand of affected side from the mid-forehead through hair to the top of the head; unable to move over the top of the head and/or moves the hand from the top of the head to behind the ear/side of the head; head is held in upright position |
| Unable | cannot move fingers and palm of the hand of affected side to the top of the head; or less |
ITEM 5: tucking shirt into pants

Description  The ability to tuck in shirt (or similar) into pants (or similar) in a standing position is being tested

Equipment  —

Position  standing

Instruction (patient) tuck your shirt into the pants using the hand of the affected arm on the affected side

Decision rules

Able uses the hand of the affected arm to tuck in the shirt on the affected side at the front (from zip/middle), the side and the back (to spine/middle)

Partially Able uses the hand of the affected arm to tuck in the shirt on the affected side at the front and the side

Unable uses the hand of the affected arm to tuck in the shirt on the affected side at the front only; or less
ITEM 6: washing lower back

| **Description** | The ability to simulate washing of the lower back (lumbar spine area) is being tested |
|-----------------|-----------------------------------------------------------------------------------|
| **Equipment**   | —                                                                                 |
| **Position**    | standing                                                                         |
| **Instruction** | (patient) move the palm of the hand of the affected arm to your lower back. Apply pressure while moving the hand in all directions over your lower back |

**Decision rules**

- **Able** reaches the lower back with the hand of the affected side; is able to put the palm of the hand flat onto the lower back while applying pressure and moving the hand in all directions (up, down, right, left) over the lower back.

- **Partially Able** reaches the lower back with the hand of the affected side; and puts the palm of the hand flat onto the lower back; unable to move the hand.

- **Unable** cannot put the palm of the hand of the affected arm flat onto the lower back; or less (for example, cannot reach the lower back with the hand of the affected side).
ITEM 7: lying on affected side

Description: The ability to lie on the affected side with the unaffected arm in front of the body is being tested. Use a single pillow for head support in lying position.

Equipment: bed

Position: lying

Instruction: lie on the affected side with the unaffected arm in front of your body

Decision rules:

Able: lies on the affected side; that is, directly on top of the affected shoulder, with the unaffected arm in front of and across the body.

Partially Able: lies partially on the affected side; that is, on the scapula rather than the head of the humerus, with the unaffected arm in front of and across the body.

Unable: does not lie on the affected side.
ITEM 8: reaching behind to get an object

**Description**: The ability to reach behind (for example, to back seat in a car) to pick up an object is being tested.

**Equipment**: object (for example, heavy book, bottle; approximately 1.5 kg)

**Position**: sitting; with the back supported by the backrest of the chair

**Instruction (clinician)**: the chair on which the person to be tested will be seated, has to be positioned in front of a second chair or plinth. The object is placed on the second chair or plinth. The object on the second chair or plinth is approximately one arm’s length behind the person.

**Instruction (patient)**: reach for and pick up the object on the chair behind you with the hand of the affected arm, bring it forward, and place it onto your lap.

**Decision rules**

**Able**: reaches behind for the object; picks up the object and brings the object forward onto lap using the hand of the affected arm. The strategy chosen is not to be judged (for example, internal/external rotation of the shoulder). The person must remain seated in approximately the starting position; that is, with back supported by the backrest of the chair with the legs forward. Rotating away from the backrest by a large amount from the backrest is not permitted.

**Unable**: reaches behind for the object, but unable to bring the object forward (for example, due to movement required or weight of object); or unable to reach behind for the object.
ITEM 9: holding an object for a longer period

Description: The ability to hold an object (for example, shopping bag) for a longer period

Equipment: object (for example, shopping bag with contents; approximately 3 kg)

Position: standing

Instruction (patient): lift up and then hold the object for 30 seconds in the hand of the affected side with your arm by your side

Decision rules:

Able: lifts and holds the object for 30 seconds; affected arm is held off the body, the affected arm is unsupported

Unable: lifts and holds the object for <30 seconds; or unable to lift the object
**ITEM 10: carrying a heavy object with two hands**

| Description | The ability to carry/hold heavier items with two hands is being tested |
|-------------|------------------------------------------------------------------------|
| Equipment   | object (for example, a full box, weights; approximately 6 kg)           |
| Position    | standing and walking                                                   |
| Instruction (clinician) | person to be tested starts with approximately 90 degrees of elbow flexion; tester provides the person to be tested carefully with the object |
| Instruction (patient) | hold the object with both hands with elbows at right angles. Then, walk 5 metres forward, turn around and walk forwards back to the starting position |

**Decision rules**

- **Able** holds the object equally in two hands; walks forward, turns and walks back without compensation in holding the object
- **Partially Able** holds the object with two hands, but compensates so that the unaffected side is carrying more of the weight (for example, by changing position of the object in the hands); or needs to rest/pause
- **Unable** holds the object for short period only; or less
ITEM 11: placing an object on a shelf at shoulder level

Description  The ability to lift and then place an object on a shelf (or similar) at shoulder level is being tested

Equipment  object (for example, book, bottle; approximately 1.5 kg)

Position  standing; one arm’s length from shelf

Instruction (patient)  place the object on the shelf at shoulder level using the hand of your affected arm

Decision rules

Able  lifts and places the object on the shelf at shoulder level; movements of the affected arm are unsupported at all times. Large compensation by standing on toes, or leaning backward (extension in upper body) with the aim to raise the object is not permitted.

Unable  lifts the object but not high enough to place on the shelf at shoulder level; or less
ITEM 12: moving an object above head level

**Description**
The ability to perform a prolonged activity above the head, such as hanging up washing or moving books/plates from one side to another on a shelf above the head, is being tested.

**Equipment**
object (for example, book, bottle; approximately 1.5 kg)

**Position**
standing

**Instruction (clinician)**
before instructing the person to be tested, the tester is to place the object on a shelf above the head, approximately in line with the position of the person’s left shoulder

**Instruction (patient)**
take the object in the hand of the affected arm, lift the object off the shelf and move the object from left (shoulder width) to right (shoulder width) and from right to left, and repeat this five times. Try not to rest the arm by putting the object down on the shelf

**Decision rules**

**Able**
takes and lifts the object off the shelf; maintains this forward flexion-elevation position while making movements sideways ten times (5x left-to-right-to-left) without rests

**Partially Able**
takes and lifts the object off the shelf; moves the object sideways for less than ten times before needing to rest (for example, by placing the object on the shelf)

**Unable**
takes and lifts the object off the shelf only; or unable to lift the object but moves (slides) it sideways on the shelf; or less (for example, cannot reach for the object)
ITEM 13: throwing a ball with two hand over-head

| Description                          | The ability to throw a ball overhead using two hands is being tested |
|--------------------------------------|---------------------------------------------------------------------|
| Equipment                            | ball (for example, soccerball or basketball)                        |
| Position                             | standing                                                            |
| Instruction (clinician)              | provide the person to be tested with a ball                        |
|                                     | ensure that the person to be tested holds the ball in front of their body at waist level with two hands (starting position). Stand approximately 5 metres in front of the person to be tested |
| Instruction (patient)                | bring the ball with two hands over and behind the head, into your neck. Then, throw the ball forward (by bringing the ball back over the head, then forward) to the tester |

| Decision rules | Able          | Partially Able | Unable                         |
|----------------|---------------|----------------|---------------------------------|
|                | makes the movements as required; controls the ball with both hands; and creates a forward throw to tester approximately 5 metres away | makes the movements as required; controls the ball with both hands; then, creates a forward throw, but is unsuccessful in distance (balls drops) or direction (not to tester) OR compensates clearly by flexion of the head OR brings the ball straight above the head or further back (but not into the neck); controls the ball with both hands; and has a successful throw in both distance and direction | makes the movements as required only or less (for example, unable to make required movements); unable to make a throwing action |
Recommendations for items requiring equipment

Chair  Items in which the position is “sitting” have to be performed in a standardised chair without armrests and without rollers. The person to be tested should have the feet on the floor, and the back supported by the backrest. In case testing is performed at a person’s home, a kitchen chair is often sufficient and recommended.

Item 1
Cup  A cup (no use of handles), mug or little water bottle containing some water or of some weight is recommended. A person has to be able to, or show they are to, drink from the cup.

Item 7 (and 8)
Bed  A hospital bed or plinth which is adjustable in height, or a person’s own bed at home should be used for testing. A single pillow should be used for comfort. Additional pillows might be needed for a person’s comfort in lying position if the person has a certain condition e.g. apnea.

Items 8, 11 and 12
Object  Use of a heavy book, 1.5L bottle water, weight or other object, which weights or approximates 1.5 kg and which is able to be held comfortably in one hand is recommended.

Item 9
Bag + Object  A small box, two 1.5L bottles water, weight or other object which weights or approximates 3 kg, placed in a (shopping) bag is recommended.

Item 10
Object  Use of a pile of heavy books, a box, weight(s) or other object(s) which weight(s) or approximate(s) 6 kg, and can be held in two hands (with shoulders in neutral, elbows in 90 degrees flexion, forearms neutral or supinated) is/are recommended.

Item 13
Ball  Use of a soccer/football (or similar) is recommended.
### SFInX items linked to the ICF

| Item | ICF code/category | Additional information |
|------|-------------------|------------------------|
| 1. Drink from a cup | d4300 Lifting d560 Drinking | cup without handles |
| 2. Washing the opposite armpit | d5100 Washing body parts | opposite armpit |
| 3. Washing the back of the opposite shoulder | d5100 Washing body parts | back of opposite shoulder |
| 4. Combing hair | d5202 Caring for hair | combing, running hand through hair |
| 5. Tucking shirt into pants | d5400 Putting on clothes | tucking shirt |
| 6. Washing lower back | d5100 Washing body parts | above your head |
| 7. Lying on the affected side | d4150 Maintaining a lying position | on the affected side |
| 8. Reaching behind to get an object | d4452 Reaching d4300 Lifting | |
| 9. Holding an object for a longer period | d4301 Carrying in the hands d6200 Shopping | shopping bag |
| 10. Carrying a heavier object with two hands | d4301 Carrying in the hands d4600 Walking around within the home | heavy object |
| 11. Placing an object on a shelf at shoulder level | d4300 Lifting | |
| 12. Sustaining activity above head (e.g. hanging up washing) | d4300 Lifting d6400 Washing and drying clothes and garments | |
| 13. Throwing a ball with two hands over-head | d4454 Throwing d4300 Lifting | ball with two hands |
