

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:

Van de Water ATM, Davidson M, Shields N, Evans MC and Taylor NF. The Shoulder Function Index (SFInX): a clinician-observed outcome measure for people with a proximal humeral fracture. BMC Musculoskelet Disord. 2015; 16:31. doi: 10.1186/s12891-015-0481-x

For reference to the measurement properties of the SFInX, please cite:

Van de Water ATM, Davidson M, Shields N, Evans MC, Taylor NF. The Shoulder Function Index (SFInX): evaluation of its measurement properties in people recovering from a proximal humeral fracture. BMC Musculoskelet Disord. 2016; 17:295. doi: 10.1186/s12891-016-1138-0

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Shoulder Function Index - clinical assessment form

SFInX score:

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	<input type="checkbox"/> Unable	<input type="checkbox"/> Able	
2	Washing the opposite armpit	<input type="checkbox"/> Unable	<input type="checkbox"/> Able	
3	Washing the back of the opposite shoulder	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
4	Combing hair	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
5	Tucking shirt into pants	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
6	Washing lower back	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
7	Lying on the affected side	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
8	Reaching behind to get an object	<input type="checkbox"/> Unable	<input type="checkbox"/> Able	
9	Holding an object for a longer period	<input type="checkbox"/> Unable	<input type="checkbox"/> Able	
10	Carrying a heavier object with two hands	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
11	Placing an object on a shelf at shoulder level	<input type="checkbox"/> Unable	<input type="checkbox"/> Able	
12	Sustaining activity above head	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
13	Throwing a ball with two hands over-head	<input type="checkbox"/> Unable	<input type="checkbox"/> Partially able	<input type="checkbox"/> Able
Total number of points (raw score)		0	+	+
				=

Conversion from raw score to SFInX 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
	ITEM 1	drinking from a cup
EASIEST		

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, so that the person has to reach to the cup.
Instruction (patient)	Reach for and pick up the cup with the hand of the affected arm. Move the cup to your mouth to drink, while keeping your head in an upright position, 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 to drink 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

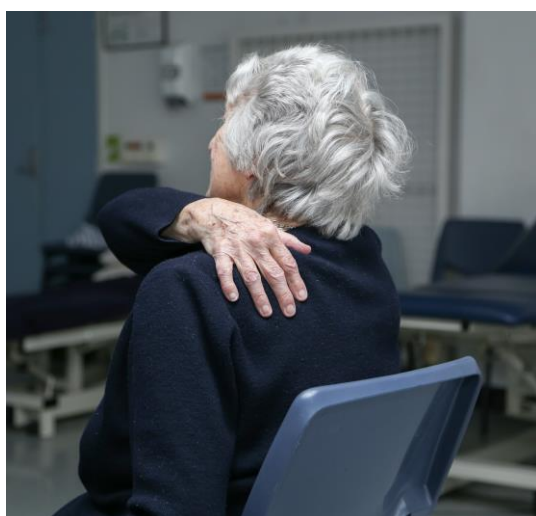
Description	The ability to simulate washing of the opposite armpit is being tested
Equipment	—
Position	sitting
Instruction (patient)	reach with the hand of the affected arm to the armpit of the opposite arm and apply pressure while moving the hand of the affected arm backward and forward, up and down



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 several times



Decision rules	Able	reaches, applies pressure and moves the hand of the affected arm sideways several times; movements of the affected arm should be unsupported; comparison of hand positioning with the unaffected side is recommended
	Partially Able	reaches the back of the opposite shoulder 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 hand of the unaffected arm* (for example, reaches top of opposite shoulder only)

* requirement: the hand of the unaffected arm reaches the back of the shoulder of the affected side; if not, score as: unable

ITEM 4: combing hair/running hand through hair

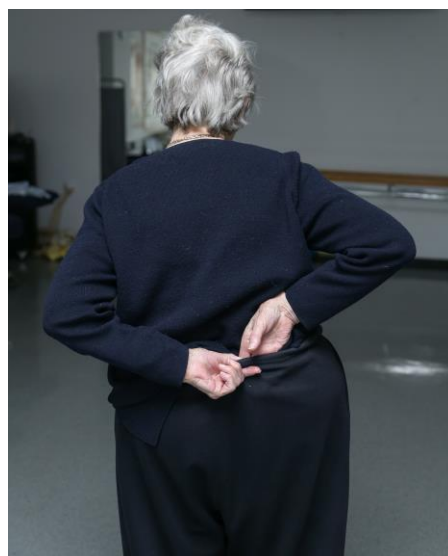
Description	The ability to simulate combing hair (or running hand through hair) with the affected arm is being tested
Equipment	—
Position	sitting
Instruction (patient)	while keeping your head in an upright position, move the fingers and palm of the hand of the affected arm from your forehead over the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



Decision rules	Able	moves fingers and palm of the hand of affected side from the mid-forehead over the top of the head 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 the 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 while keeping the head in upright position; 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 in all directions
	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.

Equipment bed and pillow

Position lying

Instruction (clinician) Place a single pillow for head support in lying position

Instruction (patient) lie on the affected side with the unaffected arm in front of your body



Decision rules **Able** lies on the affected side (for some moments); that is, directly on top of the affected shoulder (head of the humerus), with the unaffected arm in front of and across the body. Rolling away from this position during testing is not permitted

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

OR

rolls to this partial/scapular lying position from lying on top of the affected shoulder during testing; unable to maintain lying directly on top of the affected shoulder

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 with the hand of the affected arm; picks up the object and brings the object forward onto the lap. 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 the object and then hold it 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; unable to hold the affected arm off the body during testing; or unable to lift the object

ITEM 10: carrying a heavy object with two hands

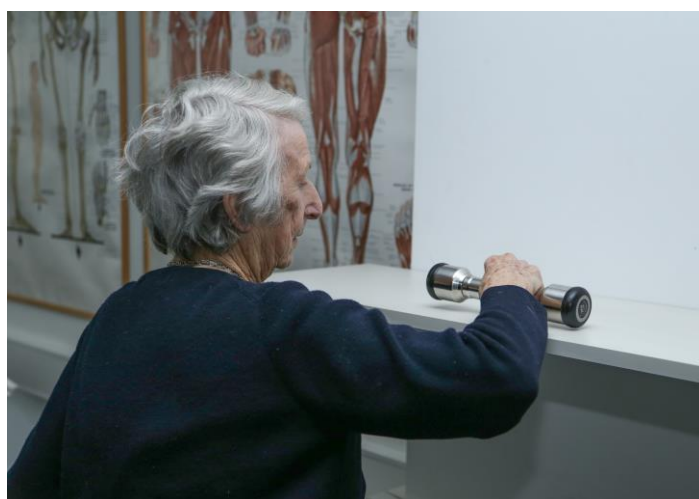
Description	The ability to carry/hold heavier items with two hands is being tested
Equipment	object (for example, a full box, weights; approximately 6 kg)
Position	standing and walking
Instruction (clinician)	person to be tested starts with approximately 90 degrees of elbow flexion; tester provides the person to be tested carefully with the object
Instruction (patient)	hold the object with both hands with elbows at right angles. Keep the elbows off your body. 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 (clinician)	the object is placed in front of the person to be tested clearly below the height of the shelf at shoulder level (for example, on a desk or cabinet)
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 compensations are not permitted
	Unable lifts the object to place on the shelf, but uses large compensations with the aim to raise the object. For example, by standing on toes, or leaning backward (extension in upper body) OR lifts the object but not high enough to place on the shelf at shoulder level OR unable to lift the object

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 the 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 while keeping your head in an upright position. Then, throw the ball forward to me/the tester (by bringing the ball back over the head, then forward)



Decision rules **Able** makes the movements as required; head is held in upright position; controls the ball with both hands; and creates a forward throw to tester approximately 5 metres away

Partially Able 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

Unable makes the movements as required only, but unable to make a throwing action; or less (for example, unable to make required movements)

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, mug (no use of handles) or little water bottle containing some water and of some weight is recommended. A person has to, or show they are able 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 1.5 kg 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 3kg A small box, two 1.5L bottles water, weight or other object which weight(s) or approximate(s) 3 kg, placed in a (shopping) bag is/are recommended.

Item 10

Object 6kg 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	lower back
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	above the head
13. Throwing a ball with two hands over-head	d4454 Throwing d4300 Lifting	ball with two hands, over-head

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Model: Patricia Giannarelli