



## Questionnaire: Patient Specific Functional Scale

The Patient Specific Functional Scale (PSFS) is a brief, interview-format questionnaire that is used to assess functional disability and any changes in performance of activities of daily living. It is commonly used to track a variety of musculoskeletal conditions and has also been used for some chronic visceral problems (e.g., coronary artery disease, lymphedema). (Wittboldt 2015, Boyages 2015)

The PSFS has gained wide acceptance over the years. Its use has been promoted in the following documents (Horn 2011):

- The Dutch Physiotherapy Guidelines for Low Back Pain.
- Mapped to WHO's International Classification of Functioning, Disability and Health used globally in physiotherapy practice
- For neck pain in the clinical guidelines by The Orthopaedic Section of the American Physical Therapy Association.
- As a default outcome measure for all musculoskeletal conditions by both the Physiotherapy New Zealand and New Zealand's national no-fault accident and injury insurer ACC.

**Note:** PSFS scores do not constitute a basis for impairment or disability ratings.

The PSFS is a component of the set of *patient-specific (aka patient-centered)* health related quality of life instruments (HRQoL). Patient-specific HRQoLs allow

individuals to generate their own, unique items for each questionnaire (Jolles 2005).

### Advantages

The PSFS is quick and easy to administer, it is applicable to a large number of conditions, and it is easy to record in the patient chart. It can be used with patients who have difficulty reading or understanding printed questionnaires.

The PSFS allows patients to identify items that are personally relevant to them. It offers a number of advantages.

- Patient centered
- Easy to administer
- Shifts emphasis from pain to function
- May give additional clues to mechanical sensitivities
- May be used for apportionment

### Disadvantages

The PSFS has limited usefulness in clinical trials (Cleland 2006, Hart 2004). It is not applicable for comparing individual patients to groups of patients (i.e., there are no "normal" PSFS scores) (Jolles 2005, Pietrobon 2002).

### Administering the PSFS

The PSFS can be administered at the initial visit and at follow-up encounters. **The practitioner, however, should first ask general questions regarding how the patient's condition has affected work, recreation, household and personal care, etc. and record whatever is appropriate.**

Then specific activities can be chosen to establish a measurable baseline and track treatment response.

Standardization in the use of the PSFS will help to insure comparable scores from visit to visit and from examiner to examiner. In order to achieve reliable and accurate results with the PSFS, it must be performed in the same manner each time and by each examiner.

The practitioner recites or reads the script from a questionnaire form. The script should be followed precisely and consistently.

Patients are asked to identify three important activities that they are having difficulty with as a result of their health problem. (Note: the reported accuracy and responsiveness of the PSFS is based on averaging 3 separate activities).

It may be necessary to remind patients to focus on their ability to perform activities rather than the pain they have when performing them.

For each of three self-generated activities, the patient rates performance difficulty on a 0 to 10 scale, where 0 is complete inability to perform the activity and 10 is 100% functional. This can be done by using a visual analogue scale (see appendix) and asking the patient to select one number on the scale for each activity.

#### Script (first measure)

*"I am going to ask you to identify up to three important activities that you are unable to do or are having difficulty with as a result of your \_\_\_\_\_ problem.*

*Today, are there any activities that you are unable to do or you are having difficulty with because of your \_\_\_\_\_ problem?"*

*(Show the scale to the patient and have the patient rate each activity.)*

**Note:** If baseline scores all receive a score of zero, then the PSFS score will not be able to detect any worsening of the

condition because the score cannot go any lower. (Jolles 2005). To avoid this shortcoming the following question can be asked at follow-up visits (Beurskens 1999):

*"Are there any [up to two] other activities that you are having difficulty with since your last visit?"*

#### Clinic Tip

Some patients will only be able to come up with one or two activities. Some will not be able to relate to the question at all. After a few attempts, do not spend an inordinate amount of time forcing these patients into answering.

Revisit the baseline activities at follow up visits (rather than including new ones). The patient can be reminded of prior scores and then asked to re-grade the same activities.

#### Script Subsequent Visits

*"When I assessed you on (state previous assessment date), you told me that you difficulty with (read 1, 2, 3, 4, 5 from list).*

*"Today, do you still have difficulty with 1 (have patient score each activity); 2 (have patient score each activity)...." and so on.*

#### Scoring and Charting the PSFS

- Higher scores indicate better function.
- There is no total score; each activity is both averaged and scored as a separate item.
- The average score is the more accurate measurement for tracking responsiveness.
- In a SOAP format, the average and individual scores would be entered in the S portion.

#### Minimally Clinically Important Difference (MCID)

To detect a clinically significant change, in general, there must be a difference of at least 3 points for a single activity or 2 points for the average of all of the activities (sum of activity scores divided by the number of activities). (Cleland 2006, Westaway 1998). Some

researchers have come up with slight variations depending on the condition.

Condition	MCID
Average of 3 items (general use)	2.0
A single item (general use)	3.0
Cervical radiculopathy	2.0
Chronic LBP	2.0
Mechanical LBP	0.8 ("small change") 3.2 ("medium change") 4.3 ("large change")
Knee pain	3.0

### Clinical Decision Making

The PSFS is a sensitive measure of clinically significant change in a patient's condition. Therefore, it is useful in determining if a patient is getting better or worse or staying the same. Improvement in the PSFS score suggests that a therapeutic regimen is useful; stasis or regression suggests a need for a change in therapy. A trend of stasis, despite changes in therapy, may suggest that the patient is *medically stationary*\* or that referral for a second opinion is warranted.

### Selecting Physical Performance Tests

Identification of specific activity intolerances can be used to direct physical exam procedures. For example, if a patient identifies driving a car as difficult, cervical active range of motion or Jull's test may be appropriate performance tests.

### Directing Physical Rehabilitation

Identification of specific activity intolerances can be used to direct the course of a therapeutic exercise program. For example, if a patient identifies that an activity which requires squatting or lifting is difficult, then testing squat and rise endurance and

\* The term *medically stationary* should be use only with great care. It denotes that a patient is not likely to improve with continued care. Most third party payers will not continue to reimburse.

strengthening hip extensors may be appropriate.

### Overcoming Illness Behaviors

The PSFS can be used to focus therapeutic attention on improving activity tolerance. The PSFS is not concerned with pain. A clinician may choose to use the PSFS as part of a larger strategy to deemphasize the importance of painful somatic sensations. Thus, the PSFS can be used as a tool to help to diminish hypervigilance for pain and somatic preoccupation.

### Apportionment

PSFS scores could also be used to help in setting an apportionment when a patient has two injuries and the practitioner is asked to apportion the effect of each for insurance purposes. See the following example:

#### Injury 1

The PSFS average of 3 affected activities was 4.6 *at the last visit prior to injury 2*. This means that the patient could engage in the targeted activities at 46% of pre-injury status.

The amount of lost function is the inverse—**54%**.

#### Injury 2 (the current injury being treated)

The average of the 3 activities is now only 2.2 (or 22%) representing a **78%** loss of function.

To determine how much of the patient's current problem is attributable to the first injury, divide the prior loss of function (.54) by the current loss of function (.78).

$$.54/.78 = 69\%.$$

69% of the patient's current status is attributable to the first injury; the remaining 31% is due to the second injury.

If there were two different 3rd party payers, this calculation could be used to help determine how the costs would be divided for continuing care.

## Validity<sup>†</sup>, Reliability<sup>‡</sup>, and Responsiveness<sup>§</sup> of the PSFS

The validity, reliability and/or responsiveness of the PSFS have been tested in patients with neck pain, cervical radiculopathy, chronic whiplash, back pain and knee pain (Beurskens 1999, Chatman 1997, Cleland 2006, Pengel 2004, Steward 2007, Stratford 1995, Westaway 1998). (The table on the next page lists selected findings from these studies.)

A 2011 systematic review of 13 studies also reported the PSFS to be valid, reliable, and responsive in populations with

- knee dysfunction
- cervical radiculopathy
- acute low back pain
- mechanical low back pain
- neck dysfunction.

The PSFS was also found to be reliable and *responsive* in populations with chronic low back pain. (Horn 2012).

The test is responsive in individuals with carpal tunnel syndrome, finger contracture, subacute low back pain, and chronic whiplash. (Horn 2012)

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<sup>†</sup> **Test Validity** is crucial for establishing the clinical usefulness of an assessment instrument. Validity refers to how accurately an assessment procedure measures the clinical state of a patient as compared to a gold standard. In the absence of a gold standard, construct validity is used as a suitable surrogate. Construct validity is established through comparison with other measures that are theoretically related to the clinical condition being evaluated. Functional status questionnaires are tested for construct validity by comparison with other instruments and with other clinical features that would be expected to correlate with physical function.

<sup>‡</sup> **Reliability** refers to the repeatability of a test and it indicates precision and consistency. A reliable test is repeatable, precise and consistent.

<sup>§</sup> **Responsiveness** refers to a test's ability to measure change over time. Responsiveness is defined as the ability of an instrument to detect clinically important changes. The responsiveness of an instrument can be used to describe its ability to detect improvement or nonimprovement as compared to an external criterion.

Condition	Psychometric Property		
	Reliability	Construct Validity	Sensitivity to Change (i.e., responsiveness)
<b>Neck Pain</b> (Westaway 1998)	R = .92	r = .73-.83: correlation of PSFS with Neck Disability Index.  r = .52-.64: correlation of PSFS with prognosis rating.	r = .79-.83: correlation of PSFS change with Neck Disability Index change.  r = .46-.53: correlation of PSFS change with prognosis rating.
<b>Cervical Radiculopathy</b> (Cleland 2006)		r = .82: correlation of PSFS with Global Rating of Change.  r = .80: correlation of PSFS with Numeric Pain Rating Scale	AUC = .99 (AUC – Area Under the Curve. AUC refers to the receiver operating characteristic curve, a measure of responsiveness. An AUC of 0.50 indicates no accuracy beyond chance. An AUC of 1.0 indicates perfect accuracy.)
<b>Chronic Whiplash</b> (Steward 2007)			Based on effect size and internal responsiveness analysis, the PSFS was more sensitive to change than a visual analogue scale for pain, the NDI, SF-36 (physical summary measure), the Copenhagen Scale, or the Functional Rating Index (disability measures).
<b>Back Pain</b> (Beurskens 1999)			Effect Size (ES) = mean change / standard deviation of change. The ES of the 3 main complaints in the improved group were respectively: 2.30, 2.53 and 2.26. In the improved group some patients showed more improvement on the main complaints than on the other outcome measures. The main complaints were the most sensitive to change.
<b>Back Pain</b> (Pengel 2004)			The PSFS was the most responsive of three measures. Effect size measures: PSFS = 1.6 Numerical pain scale = 1.3 Roland Morris Questionnaire = 0.8.
<b>Knee Pain</b> (Chatman 1997)	R = .84		r = .78
<b>R</b> – intraclass correlation coefficient [type 2,1]		<b>r</b> - Pearson's r	

For a detailed analysis of the methodological challenges in the evaluation of health status measures see: Stratford PW, Riddle DL. Assessing sensitivity to change: Choosing the appropriate change coefficient. Health Qual Life Outcomes 2005;3:23. (The electronic version of this article can be found online at: <http://www.hqlo.com/content/3/1/23>).

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## **APPENDIX: Patient Specific Functional Scale (PSFS)**

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

Clinical Supervisor \_\_\_\_\_ Intern \_\_\_\_\_

### **Initial Assessment**

Complete when interviewing patient about effects on ADLs. Follow this script (avoid using the word *pain*):

“I am going to ask you to identify three important activities that you are unable to do or are having difficulty with as a result of your \_\_\_\_\_ problem. Today, are there any activities that you are unable to do or you are having difficulty with because of your \_\_\_\_\_ problem?” (Show the scale to the patient and have the patient rate each activity.)

#### **Note:**

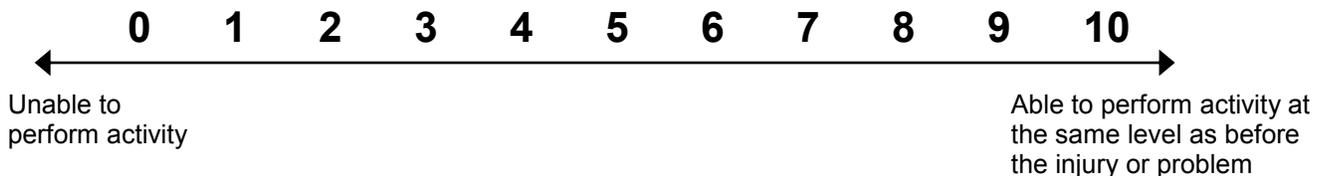
- If the activities are at 0 or 1 ask the following question: “Are there any [up to two] *other* activities that you are having difficulty with since your last visit?”
- Remember that on the PSFS scale, zero is the worst score (the patient cannot perform the activity) and 10 is the best score (the patient is able to perform the activity at the same level as before the injury or problem). This is the opposite of the VAS scale of pain. It may be helpful to clarify this point before showing the scale to the patient.

### **Follow-up assessments on subsequent office visits**

Follow this script. Use the anchor terms exactly as written.

“When I assessed you on [*state previous assessment date*], you told me that you had difficulty with [*read all activities from the list at a time*]. Today, do you still have difficulty with [*read and have the patient score each item in the list*]?”

#### **PATIENT-SPECIFIC ACTIVITY SCORING SCHEME (point to one number)**



PSFS Scores for Problem #1									
Date									
Activity	Score								
1									
2									
3									
4									
5									
<i>Average</i>									

Note: To detect a clinically significant change, there must be a difference of at least 3 points for a single activity or 2 points for the average of all of the activities (sum of activity scores divided by the number of activities).

PSFS Scores for Problem #2									
Date									
Activity	Score								
1									
2									
3									
4									
5									
<i>Average</i>									

Note: To detect a clinically significant change, there must be a difference of at least 3 points for a single activity or 2 points for the average of all of the activities (sum of activity scores divided by the number of activities).