OUTCOME ASSESSMENT TOOLS

FOR

NEUROMUSCULOSKELETAL CONDITIONS

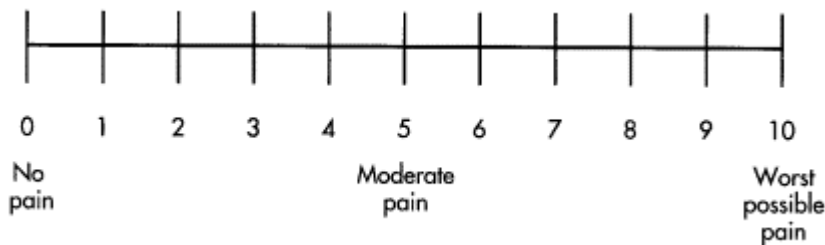### JUNE 2008   ■   VERSION 8.1

NUMERIC PAIN RATING SCALE

PATIENT NAME _____

DATE _____ /_____ /_____

If 0 is no pain and 10 is the worst possible pain, please give me a number that indicates the amount of pain you are having now.

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├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤
0   1   2   3   4   5   6   7   8   9   10
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0 — No pain

5 — Moderate pain

10 — Worst possible pain

PATIENT SIGNATURE_____

NUMERIC PAIN RATING SCALE (NPRS)

The NPRS is a helpful tool you can use to describe how much pain your patient is feeling and to measure how well treatments are relieving pain. If used as a graphic rating scale, a 10-cm baseline is recommended. [1]

On the scale of 0 to 10, 0 means "no pain" and 10 means the "worst possible pain. The middle of the scale describes "moderate pain." A two or three rating would be "mild pain." A rating of seven or higher is "severe pain."

Numeric Pain Rating Scale (NPRS)

Ask your patients, If 0 is no pain and 10 is the worst possible pain, please give me a number that indicates the amount of pain you are having now.

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[1] Acute Pain Management: Operative or Medical Procedures and Trauma, Clinical Practice Guideline No. 1. AHCPR Publication
No. 92-0032; February 1992. Agency for Healthcare Research & Quality, Rockville, MD; pages 116-117.

PRE AND POST VISUAL ANALOGUE SCALE

NAME _____ DATE _____ DATE OF INJURY _____

PRE-TREATMENT VAS

Please place a mark through the line below that most accurately represents the pain level that you are feeling *RIGHT NOW*. Please note that "UNBEARABLE PAIN" is located on the right hand side of the line and "NO PAIN" is located on the left.

No Pain _____ Unbearable

FOLD HERE--

POST-TREATMENT VAS (fold in half when completing post-test VAS)

Please place a mark through the line below that most accurately represents the pain level that you are feeling *RIGHT NOW*. Please note that "UNBEARABLE PAIN" is located on the right hand side of the line and "NO PAIN" is located on the left.

No Pain _____ Unbearable

OSWESTRY DISABILITY INDEX 2.0

NAME_____ DATE_____ SCORE_____

PLEASE READ: Could you please complete this questionnaire. It is designed to give us information as to how your back (or leg) trouble has affected your ability to manage in everyday life.

Please answer **every section**. Mark **one box only** in each section that most closely describes you **today**.

SECTION 1 - Pain Intensity A ☐ I have no pain at the moment. B ☐ The pain is very mild at the moment. C ☐ The pain is moderate at the moment. D ☐ The pain is fairly severe at the moment. E ☐ The pain is very severe at the moment. F ☐ The pain is the worst imaginable at the moment.	**SECTION 6 - Standing** A ☐ I can stand as long as I want without extra pain. B ☐ I can stand as long as I want but it gives me extra pain. C ☐ Pain prevents me from standing for more than 1 hour. D ☐ Pain prevents me from standing for more than 1/2 hour. E ☐ Pain prevents me from standing for more than 10 minutes. F ☐ Pain prevents me from standing at all.
SECTION 2 - Personal Care (washing, dressing, etc.) A ☐ I can look after myself normally without causing extra pain. B ☐ I can look after myself normally but it is very painful. C ☐ It is painful to look after myself and I am slow and careful. D ☐ I need some help but manage most of my personal care. E ☐ I need help every day in most aspects of self care. F ☐ I do not get dressed, wash with difficulty and stay in bed.	**SECTION 7 - Sleeping** A ☐ My sleep is never disturbed by pain. B ☐ My sleep is occasionally disturbed by pain. C ☐ Because of pain I have less than 6 hours' sleep. D ☐ Because of pain I have less than 4 hours' sleep. E ☐ Because of pain I have less than 2 hours' sleep. F ☐ Pain prevents me from sleeping at all.
SECTION 3 - Lifting A ☐ I can lift heavy weights without extra pain. B ☐ I can lift heavy weights, but it causes extra pain. C ☐ Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, e.g. on a table. D ☐ Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned. E ☐ I can only lift very light weights, at the most. F ☐ I cannot lift or carry anything at all.	**SECTION 8 - Sex Life (if applicable)** A ☐ My sex life is normal and causes me no extra pain. B ☐ My sex life is normal, but causes some extra pain. C ☐ My sex life is nearly normal but is very painful. D ☐ My sex life is severely restricted by pain. E ☐ My sex life is nearly absent because of pain. F ☐ Pain prevents any sex life at all.
SECTION 4 - Walking A ☐ Pain does not prevent me from walking any distance. B ☐ Pain prevents me from walking more than one mile. C ☐ Pain prevents me from walking more than 1/4 mile. D ☐ Pain prevents me from walking more than 100 yards. E ☐ I can only walk while using a stick or crutches. F ☐ I am in bed most of the time and have to crawl to the toilet.	**SECTION 9 - Social Life** A ☐ My social life is normal and causes me no extra pain. B ☐ My social life is normal, but increases the degree of pain. C ☐ Pain has no significant effect on my social life apart from limiting my more energetic interests, e.g., sport, etc. D ☐ Pain has restricted my social life and I do not go out as often. E ☐ Pain has restricted my social life to my home. F ☐ I have no social life because of the pain.
SECTION 5 - Sitting A ☐ I can sit in any chair as long as I like. B ☐ I can only sit in my favorite chair as long as I like. C ☐ Pain prevents me from sitting more than 1 hour. D ☐ Pain prevents me from sitting more than 1/2 hour. E ☐ Pain prevents me from sitting more than ten minutes. F ☐ Pain prevents me from sitting at all.	**SECTION 10 - Traveling** A ☐ I can travel anywhere without pain. B ☐ I can travel anywhere but I gives extra pain. C ☐ Pain is bad but I manage journeys over 2 hours. D ☐ Pain restricts me to journeys of less than 1 hour. E ☐ Pain restricts me to short necessary journeys under 30 minutes. F ☐ Pain prevents me from traveling except to receive treatment.

COMMENTS: _____

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Roland, M. and J. Fairbank (2000). "The Roland-Morris Disability Questionnaire and the Oswestry Disability Questionnaire." Spine 25(24): 3115-24.

SCORING METHOD FOR
THE OSWESTRY LOW BACK DISABILITY QUESTIONNAIRE

1. Each of the 10 sections is scored separately (0 to 5 points each) and then added up (max. total = 50).

    EXAMPLE:

Section 1. Pain Intensity	Point Value
A. ____ I have no pain at the moment	0
B. ____ The pain is very mild at the moment	1
C. ____ The pain is moderate at the moment	2
D. ____ The pain is fairly severe at the moment	3
E. ____ The pain is very severe at the moment	4
F. ____ The pain is the worst imaginable	5

2. If all 10 sections are completed, simply double the patients score.

3. If a section is omitted, divide the patient's total score by the number of sections completed times 5.

    FORMULA: $$\frac{\text{PATIENT'S SCORE}}{\text{\# OF SECTIONS COMPLETED X 5}} \times 100 = \underline{\hspace{2cm}} \% \text{ DISABILITY}$$

    EXAMPLE:

    If 9 of 10 sections are completed, divide the patient's score by 9 X 5 = 45; if

    Patient's Score: 22

    Number of sections completed: 9 (9 X 5 = 45)

    22/45 X 100 = 48 % disability

4. Interpretation of disability scores (from original article):

SCORE	INTERPRETATION OF THE OSWESTRY LBP DISABILITY QUESTIONNAIRE
0-20% Minimal Disability	Can cope w/ most ADL's. Usually no treatment needed, apart from advice on lifting, sitting, posture, physical fitness and diet. In this group, some patients have particular difficulty with sitting and this may be important if their occupation is sedentary (typist, driver, etc.)
20-40% Moderate Disability	This group experiences more pain and problems with sitting, lifting and standing. Travel and social life are more difficult and they may well be off work. Personal care, sexual activity and sleeping are not grossly affected, and the back condition can usually be managed by conservative means.
40-60% Severe Disability	Pain remains the main problem in this group of patients by travel, personal care, social life, sexual activity and sleep are also affected. These patients require detailed investigation.
60-80% Crippled	Back pain impinges on all aspects of these patients' lives both at home and at work. *Positive intervention is required*.
80-100%	These patients are either bed-bound or exaggerating their symptoms. This can be evaluated by careful observation of the patient during the medical examination.

Roland, M. and J. Fairbank (2000). "The Roland-Morris Disability Questionnaire and the Oswestry Disability Questionnaire." Spine 25(24): 3115-24.

LOW BACK PAIN AND DISABILITY QUESTIONNAIRE

(Roland-Morris)

NAME_____ **DATE**_____

AGE_____ **SCORE**_____

When your back hurts, you may find if difficult to do some of the things you normally do.
Mark only the sentences that describe you today.

1. ☐ I stay at home most of the time because of my back.

2. ☐ I walk more slowly than usual because of my back.

3. ☐ Because of my back, I am not doing any jobs that I usually do around the house.

4. ☐ Because of my back, I use a handrail to get upstairs.

5. ☐ Because of my back, I lie down to rest more often.

6. ☐ Because of my back, I have to hold onto something to get out of an easy chair.

7. ☐ Because of my back, I try to get other people to do things for me.

8. ☐ I get dressed more slowly than usual because of my back.

9. ☐ I stand up only for short periods of time because of my back.

10. ☐ Because of my back, I try not to bend or kneel down.

11. ☐ I find it difficult to get out of a chair because of my back.

12. ☐ My back or leg is painful almost all of the time.

13. ☐ I find it difficult to turn over in bed because of my back.

14. ☐ I have trouble putting on my socks (or stockings) because of pain in my back.

15. ☐ I sleep less well because of my back.

16. ☐ I avoid heavy jobs around the house because of my back.

17. ☐ Because of back pain, I am more irritable and bad tempered with people than usual.

18. ☐ Because of my back, I go upstairs more slowly than usual.

*Roland Morris Citation info - Roland, M. and J. Fairbank (2000). "The Roland-Morris Disability Questionnaire and the Oswestry Disability Questionnaire." Spine **25**(24): 3115-24.*

NECK DISABILITY INDEX QUESTIONNAIRE

NAME_____ AGE_____ DATE_____ SCORE_____

PLEASE READ: This questionnaire is designed to enable us to understand how much your neck pain has affected your ability to manage your everyday activities. Please answer each section by circling the ONE CHOICE that most applies to you. We realize that you may feel that more than one statement may relate to you, but ***PLEASE JUST CIRCLE THE ONE CHOICE THAT MOST CLOSELY DESCRIBES YOUR PROBLEM RIGHT NOW.***

SECTION 1 - Pain Intensity A. I have no pain at the moment. B. The pain is very mild at the moment. C. The pain is moderate at the moment. D. The pain is fairly severe at the moment. E. The pain is very severe at the moment. F. The pain is the worst imaginable at the moment.	*SECTION 6 - Concentration/* A. I can concentrate fully when I want to with no difficulty. B. I can concentrate fully when I want to with slight difficulty. C. I have a fair degree of difficulty in concentrating when I want to. D. I have a lot of difficulty in concentrating when I want to. E. I have a great deal of difficulty in concentrating when I want to. F. I cannot concentrate at all.
SECTION 2 -Personal Care (Washing, Dressing, etc.) A. I can look after myself normally without causing extra pain. B. I can look after myself normally, but it causes extra pain. C. It is painful to look after myself and I am slow and careful. D. I need some help, but manage most of my personal care. E. I need help every day in most aspects of self care. F. I do not get dressed, I wash with difficulty and stay in bed.	*SECTION 7 - Work* A. I can do as much work as I want to. B. I can only do my usual work, but no more. C. I can do most of my usual work, but no more. D. I cannot do my usual work. E. I can hardly do any work at all. F. I cannot do any work at all.
SECTION 3 - Lifting A. I can lift heavy weights without extra pain. B. I can lift heavy weights, but it gives extra pain. C. Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, for example, on a table. D. Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned. E. I can lift very light weights. F. I cannot lift or carry anything at all.	*SECTION 8 – Driving* A. I can drive my car without any neck pain. B. I can drive my car as long as I want with slight pain in my neck. C. I can drive my car as long as I want with moderate pain in my neck. D. I cannot drive my car as long as I want because of moderate pain in my neck. E. I can hardly drive at all because of severe pain in my neck. F. I cannot drive my car at all.
SECTION 4 - Reading A. I can read as much as I want to with no pain in my neck. B. I can read as much as I want to with slight pain in my neck. C. I can read as much as I want to with moderate pain in my neck. D. I cannot read as much as I want because of moderate pain in my neck. E. I cannot read as much as I want because of severe pain in my neck. F. I cannot read at all.	*SECTION 9 – Sleeping* A. I have no trouble sleeping. B. My sleep is slightly disturbed (less than 1 hour sleepless). C .My sleep is mildly disturbed (1-2 hours sleepless). D. My sleep is moderately disturbed (2-3 hours sleepless). E. My sleep is greatly disturbed (3-5 hours sleepless). F. My sleep is completely disturbed (5-7 hours)
SECTION 5 – Headaches A. I have no headaches at all. B. I have slight headaches which come infrequently. C. I have moderate headaches which come infrequently. D. I have moderate headaches which come frequently. E. I have severe headaches which come frequently. F. I have headaches almost all the time.	*SECTION 10 – Recreation* A. I am able to engage in all of my recreational activities with no neck pain at all. B. I am able to engage in all of my recreational activities with some pain in my neck. C. I am able to engage in most, but not all of my recreational activities because of pain in my neck. D. I am able to engage in a few of my recreational activities because of pain in my neck. E. I can hardly do any recreational activities because of pain in my neck. F. I cannot do any recreational activities at all.

COMMENTS: _____

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Vernon H, Mior S. The Neck Disability Index: A study of reliability and validity. J Manipulative Physiol Ther 1991;14:409-415.

SCORING METHOD FOR THE NECK DISABILITY INDEX

1. Each of the 10 sections is scored separately (0 to 5 points each) and then added up (max. total = 50).

   EXAMPLE:

Section 1. Pain Intensity	Point Value
A. _____ I have no pain at the moment	0
B. _____ The pain is very mild at the moment	1
C. _____ The pain is moderate at the moment	2
D. _____ The pain is fairly severe at the moment	3
E. _____ The pain is very severe at the moment	4
F. _____ The pain is the worst imaginable	5

2. If all 10 sections are completed, simply double the patients score.

3. If a section is omitted, divide the patient's total score by the number of sections completed times 5.

   FORMULA: $$\frac{\text{PATIENT'S SCORE}}{\text{\# OF SECTIONS COMPLETED} \times 5} \times 100 = \underline{\qquad} \% \text{ DISABILITY}$$

   EXAMPLE:
   If 9 of 10 sections are completed, divide the patient's score by 9 X 5 = 45; if
   Patient's Score: 22
   Number of sections completed: 9 (9 X 5 = 45)
                                  22/45 X 100 = 48 % disability

4. Interpretation of disability scores:

SCORE
0-20% Minimal Disability
20-40% Moderate Disability
40-60% Severe Disability
60-80% Crippled
80-100% Bed-bound or exaggerating

THE LOWER EXTREMITY FUNCTIONAL SCALE

We are interested in knowing whether you are having any difficulty at all with the activities listed below <u>because of your lower limb</u> problem for which you are currently seeking attention. Please provide an answer for **each** activity.

Today, do you or would you have any difficulty at all with:

	Activities	Extreme Difficulty or Unable to Perform Activity	Quite a Bit of Difficulty	Moderate Difficulty	A Little Bit of Difficulty	No Difficulty
1	Any of your usual work, housework, or school activities.	0	1	2	3	4
2	Your usual hobbies, re creational or sporting activities.	0	1	2	3	4
3	Getting into or out of the bath.	0	1	2	3	4
4	Walking between rooms.	0	1	2	3	4
5	Putting on your shoes or socks.	0	1	2	3	4
6	Squatting.	0	1	2	3	4
7	Lifting an object, like a bag of groceries from the floor.	0	1	2	3	4
8	Performing light activities around your home.	0	1	2	3	4
9	Performing heavy activities around your home.	0	1	2	3	4
10	Getting into or out of a car.	0	1	2	3	4
11	Walking 2 blocks.	0	1	2	3	4
12	Walking a mile.	0	1	2	3	4
13	Going up or down 10 stairs (about 1 flight of stairs).	0	1	2	3	4
14	Standing for 1 hour.	0	1	2	3	4
15	Sitting for 1 hour.	0	1	2	3	4
16	Running on even ground.	0	1	2	3	4
17	Running on uneven ground.	0	1	2	3	4
18	Making sharp turns while running fast.	0	1	2	3	4
19	Hopping.	0	1	2	3	4
20	Rolling over in bed.	0	1	2	3	4
	Column Totals:					

Minimum Level of Detectable Change (90% Confidence): 9 points

SCORE: _____/ 80

Please submit the sum of responses to ASH

SCORING METHOD FOR LOWER EXTREMITY FUNCTIONAL SCALE

The Lower Extremity Functional Scale (LEFS) is an easily administered and scored functional outcome tool. It can be utilized for lower extremity conditions and is sensitive enough for a wide range of functional disability levels. It can and should be used on the initial visit and subsequently on a 2-4 week basis to measure patient's progress. The tool has a sufficient measure of reliability, variability, and sensitivity to change for determining minimally clinically important score differences, on a test to re-test basis.

Scoring

LEFS is scored by adding of all responses (one answer per section) and compared to a total possible score of 80.

$$(\text{Score} = \frac{\text{sum of responses}}{80})$$

Error + / - 5 points; therefore test score is within 5 points of a patients "true" score.

Minimum detectable change (MDC) is 9 points; or, a change of more than 9 points on the LEFS represents a true change in the patient's level of function.

DISABILITIES OF THE ARM, SHOULDER AND HAND

Please rate your ability to do the following activities in the last week by circling the number below the appropriate response.

	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	UNABLE
1. Open a tight or new jar.	1	2	3	4	5
2. Write.	1	2	3	4	5
3. Turn a key.	1	2	3	4	5
4. Prepare a meal.	1	2	3	4	5
5. Push open a heavy door.	1	2	3	4	5
6. Place an object on a shelf above your head.	1	2	3	4	5
7. Do heavy household chores (e.g., wash walls, wash floors).	1	2	3	4	5
8. Garden or do yard work.	1	2	3	4	5
9. Make a bed.	1	2	3	4	5
10. Carry a shopping bag or briefcase.	1	2	3	4	5
11. Carry a heavy object (over 10 lbs).	1	2	3	4	5
12. Change a lightbulb overhead.	1	2	3	4	5
13. Wash or blow dry your hair.	1	2	3	4	5
14. Wash your back.	1	2	3	4	5
15. Put on a pullover sweater.	1	2	3	4	5
16. Use a knife to cut food.	1	2	3	4	5
17. Recreational activities which require little effort (e.g., cardplaying, knitting, etc.).	1	2	3	4	5
18. Recreational activities in which you take some force or impact through your arm, shoulder or hand (e.g., golf, hammering, tennis, etc.).	1	2	3	4	5
19. Recreational activities in which you move your arm freely (e.g., playing frisbee, badminton, etc.).	1	2	3	4	5
20. Manage transportation needs (getting from one place to another).	1	2	3	4	5
21. Sexual activities.	1	2	3	4	5

DISABILITIES OF THE ARM, SHOULDER AND HAND

	NOT AT ALL	SLIGHTLY	MODERATELY	QUITE A BIT	EXTREMELY
22. During the past week, *to what extent* has your arm, shoulder or hand problem interfered with your normal social activities with family, friends, neighbours or groups? *(circle number)*	1	2	3	4	5

	NOT LIMITED AT ALL	SLIGHTLY LIMITED	MODERATELY LIMITED	VERY LIMITED	UNABLE
23. During the past week, were you limited in your work or other regular daily activities as a result of your arm, shoulder or hand problem? *(circle number)*	1	2	3	4	5

Please rate the severity of the following symptoms in the last week. *(circle number)*

	NONE	MILD	MODERATE	SEVERE	EXTREME
24. Arm, shoulder or hand pain.	1	2	3	4	5
25. Arm, shoulder or hand pain when you performed any specific activity.	1	2	3	4	5
26. Tingling (pins and needles) in your arm, shoulder or hand.	1	2	3	4	5
27. Weakness in your arm, shoulder or hand.	1	2	3	4	5
28. Stiffness in your arm, shoulder or hand.	1	2	3	4	5

	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	SO MUCH DIFFICULTY THAT I CAN'T SLEEP
29. During the past week, how much difficulty have you had sleeping because of the pain in your arm, shoulder or hand? *(circle number)*	1	2	3	4	5

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE
30. I feel less capable, less confident or less useful because of my arm, shoulder or hand problem. *(circle number)*	1	2	3	4	5

DASH DISABILITY/SYMPTOM SCORE = _____ ([(sum of n responses / n) - 1] x 25, where n is the number of completed responses.)

A DASH score may <u>not</u> be calculated if there are greater than 3 missing items.

THE DASH

INSTRUCTIONS

This questionnaire asks about your symptoms as well as your ability to perform certain activities.

Please answer *every question*, based on your condition in the last week, by circling the appropriate number.

If you did not have the opportunity to perform an activity in the past week, please make your *best estimate* on which response would be the most accurate.

It doesn't matter which hand or arm you use to perform the activity; please answer based on your ability regardless of how you perform the task.
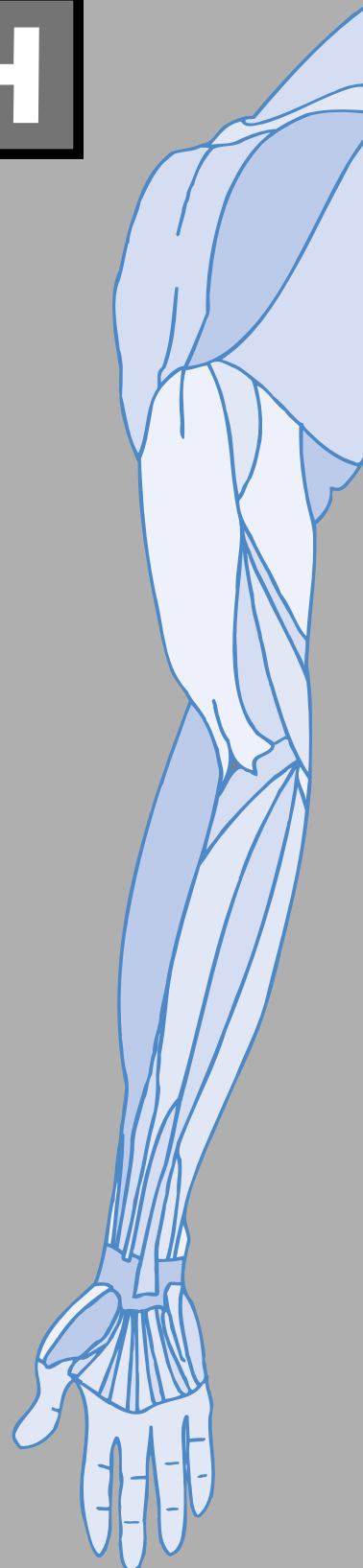
DISABILITIES OF THE ARM, SHOULDER AND HAND

WORK MODULE (OPTIONAL)

The following questions ask about the impact of your arm, shoulder or hand problem on your ability to work (including homemaking if that is your main work role).

Please indicate what your job/work is:_____

❐ I do not work. (You may skip this section.)

Please circle the number that best describes your physical ability in the past week. Did you have any difficulty:

	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	UNABLE
1. using your usual technique for your work?	1	2	3	4	5
2. doing your usual work because of arm, shoulder or hand pain?	1	2	3	4	5
3. doing your work as well as you would like?	1	2	3	4	5
4. spending your usual amount of time doing your work?	1	2	3	4	5

SPORTS/PERFORMING ARTS MODULE (OPTIONAL)

The following questions relate to the impact of your arm, shoulder or hand problem on playing *your musical instrument or sport or both*.
If you play more than one sport or instrument (or play both), please answer with respect to that activity which is most important to you.

Please indicate the sport or instrument which is most important to you:_____
❏ I do not play a sport or an instrument. (You may skip this section.)

Please circle the number that best describes your physical ability in the past week. Did you have any difficulty:

	NO DIFFICULTY	MILD DIFFICULTY	MODERATE DIFFICULTY	SEVERE DIFFICULTY	UNABLE
1. using your usual technique for playing your instrument or sport?	1	2	3	4	5
2. playing your musical instrument or sport because of arm, shoulder or hand pain?	1	2	3	4	5
3. playing your musical instrument or sport as well as you would like?	1	2	3	4	5
4. spending your usual amount of time practising or playing your instrument or sport?	1	2	3	4	5

SCORING THE OPTIONAL MODULES: Add up assigned values for each response; divide by 4 (number of items); subtract 1; multiply by 25.
An optional module score may not be calculated if there are any missing items.

INSTITUTE FOR WORK & HEALTH
INSTITUT DE RECHERCHE SUR LE TRAVAIL ET LA SANTÉ

AMERICAN ACADEMY of ORTHOPAEDIC SURGEONS
Ορθον Παιδίον
MCMXXXIII

A AOS COMSS

Scoring Method for
Disability of the Arm, Shoulder and Hand

The Disability of the Arm, Shoulder and Hand (DASH) is designed to measure multiple symptom items (6) across physical functions and role functions. It is applicable to patient populations that place low, moderate or high demands on their upper limbs during work or leisure as well as people with upper-extremity conditions/disorders.

SCORING

Please have patients answer every section according to their ability to perform activities during the past week. Only one answer per question is allowed. In order for the test to be valid at least 27 of the 30 items must be completed for scoring.

The values associated with the selected answers are summed and divided by the number of questions answered. In order to make this score 'out of 100' you subtract 1 and multiplying the resultant number by 25 and divided by the number of questions answered.

$$DASH = \left\{ \frac{(\underline{\text{sum of n responses}})}{n} - 1 \right\} \times 25$$

Note: n = total number of questions answered

Minimum detectable change (MDC) @ P=.05 is 12.7 points

Minimum clinically important difference (MCID): 15 points; this represents the change in the score needed to be considered clinically significant.

BERG BALANCE SCALE*

Name _____   **Date** _____

Location _____   **Rater** _____

ITEM	DESCRIPTION	SCORE (0-4)
1.	Sitting to standing	_____
2.	Standing unsupported	_____
3.	Sitting unsupported	_____
4.	Standing to sitting	_____
5.	Transfers	_____
6.	Standing with eyes closed	_____
7.	Standing with feet together	_____
8.	Reaching forward with outstretched arm	_____
9.	Retrieving object from floor	_____
10.	Turning to look behind	_____
11.	Turning 360 degrees	_____
12.	Placing alternate foot on stool	_____
13.	Standing with one foot in front	_____
14.	Standing on one foot	_____
	TOTAL	_____

GENERAL INSTRUCTIONS
Please demonstrate each task and/or give instructions as written. When scoring, please record the lowest response category that applies for each item.

In most items, the subject is asked to maintain a given position for specific time. Progressively more points are deducted if the time or distance requirements are not met, if the subject's performance warrants supervision, or if the subject touches an external support or receives assistance from the examiner. Subjects should understand that they must maintain their balance while attempting the tasks. The choices of which leg to stand on or how far to reach are left to the subject. Poor judgment will adversely influence the performance and the scoring.

Equipment required for testing are a stopwatch or watch with a second hand, and a ruler or other indicator of 2, 5 and 10 inches (5, 12.5 and 25 cm). Chairs used during testing should be of reasonable height. Either a step or a stool (of average step height) may be used for item #12.

1. **SITTING TO STANDING**
   INSTRUCTIONS: Please stand up. Try not to use your hands for support.

   (   ) 4 able to stand without using hands and stabilize independently
   (   ) 3 able to stand independently using hands
   (   ) 2 able to stand using hands after several tries
   (   ) 1 needs minimal aid to stand or to stabilize
   (   ) 0 needs moderate or maximal assist to stand

2. **STANDING UNSUPPORTED**
   INSTRUCTIONS: Please stand for two minutes without holding.

   (   ) 4 able to stand safely 2 minutes
   (   ) 3 able to stand 2 minutes with supervision
   (   ) 2 able to stand 30 seconds unsupported
   (   ) 1 needs several tries to stand 30 seconds unsupported
   (   ) 0 unable to stand 30 seconds unassisted

If a subject is able to stand 2 minutes unsupported, score full points for sitting unsupported. Proceed to item #4.

3. **SITTING WITH BACK UNSUPPORTED BUT FEET SUPPORTED ON FLOOR OR ON A STOOL**
   INSTRUCTIONS: Please sit with arms folded for 2 minutes.

   (   ) 4 able to sit safely and securely 2 minutes
   (   ) 3 able to sit 2 minutes under supervision
   (   ) 2 able to sit 30 seconds
   (   ) 1 able to sit 10 seconds
   (   ) 0 unable to sit without support 10 seconds

4. **STANDING TO SITTING**
   INSTRUCTIONS: Please sit down.

   (   ) 4 sits safely with minimal use of hands
   (   ) 3 controls descent by using hands
   (   ) 2 uses back of legs against chair to control descent
   (   ) 1 sits independently but has uncontrolled descent
   (   ) 0 needs assistance to sit

5. **TRANSFERS**
   INSTRUCTIONS: Arrange chairs(s) for a pivot transfer. Ask subject to transfer one way toward a seat with armrests and one way toward a seat without armrests. You may use two chairs (one with and one without armrests) or a bed and a chair.

   ( ) 4 able to transfer safely with minor use of hands
   ( ) 3 able to transfer safely definite need of hands
   ( ) 2 able to transfer with verbal cueing and/or supervision
   ( ) 1 needs one person to assist
   ( ) 0 needs two people to assist or supervise to be safe

6. **STANDING UNSUPPORTED WITH EYES CLOSED**
   INSTRUCTIONS: Please close your eyes and stand still for 10 seconds.

   ( ) 4 able to stand 10 seconds safely
   ( ) 3 able to stand 10 seconds with supervision
   ( ) 2 able to stand 3 seconds
   ( ) 1 unable to keep eyes closed 3 seconds but stays steady
   ( ) 0 needs help to keep from falling

7. **STANDING UNSUPPORTED WITH FEET TOGETHER**
   INSTRUCTIONS: Place your feet together and stand without holding.

   ( ) 4 able to place feet together independently and stand 1 minute safely
   ( ) 3 able to place feet together independently and stand for 1 minute with
              supervision
   ( ) 2 able to place feet together independently and to hold for 30 seconds
   ( ) 1 needs help to attain position but able to stand 15 seconds feet together
   ( ) 0 needs help to attain position and unable to hold for 15 seconds

8. **REACHING FORWARD WITH OUTSTRETCHED ARM WHILE STANDING**
   INSTRUCTIONS: Lift arm to 90 degrees. Stretch out your fingers and reach forward as far as you can. (Examiner places a ruler at end of fingertips when arm is at 90 degrees. Fingers should not touch the ruler while reaching forward. The recorded measure is the distance forward that the finger reach while the subject is in the most forward lean position. When possible, ask subject to use both arms when reaching to avoid rotation of the trunk.)

   ( ) 4 can reach forward confidently >25 cm (10 inches)
   ( ) 3 can reach forward >12.5 cm safely (5 inches)
   ( ) 2 can reach forward >5 cm safely (2 inches)
   ( ) 1 reaches forward but needs supervision
   ( ) 0 loses balance while trying/ requires external support

9.   **PICK UP OBJECT FROM THE FLOOR FROM A STANDING POSITION**
      INSTRUCTIONS: Pick up the shoe/slipper which is placed in front of your feet.

      ( ) 4 able to pick up slipper safely and easily
      ( ) 3 able to pick up slipper but needs supervision
      ( ) 2 unable to pick up but reaches 2-5cm (1-2 inches) from slipper and keeps
            balance independently
      ( ) 1 unable to pick up and needs supervision while trying
      ( ) 0 unable to try/needs assist to keep from losing balance or falling

10.   **TURNING TO LOOK BEHIND OVER LEFT AND RIGHT SHOULDERS WHILE STANDING**
      INSTRUCTIONS: Turn to look **directly** behind you over toward left shoulder. Repeat to the right.
      Examiner may pick an object to look at directly behind the subject to encourage a better twist turn.

      ( ) 4 looks behind from both sides and weight shifts well
      ( ) 3 looks behind one side only other side shows less weight shift
      ( ) 2 turns sideways only but maintains balance
      ( ) 1 needs supervision when turning
      ( ) 0 needs assist to keep from losing balance or falling

11.   **TURN 360 DEGREES**
      INSTRUCTIONS: Turn completely around in a full circle. Pause. Then turn a full circle in the other direction.

      ( ) 4 able to turn 360 degrees safely in 4 seconds or less
      ( ) 3 able to turn 360 degrees safely one side only in 4 seconds or less
      ( ) 2 able to turn 360 degrees safely but slowly
      ( ) 1 needs close supervision or verbal cueing
      ( ) 0 needs assistance while turning

12.   **PLACING ALTERNATE FOOT ON STEP OR STOOL WHILE STANDING UNSUPPORTED**
      INSTRUCTIONS: Place each foot alternately on the step/stool. Continue until each foot has touched the step/stool four times.

      ( ) 4 able to stand independently and safely and complete 8 steps in 20 seconds
      ( ) 3 able to stand independently and complete 8 steps >20 seconds
      ( ) 2 able to complete 4 steps without aid with supervision
      ( ) 1 able to complete >2 steps needs minimal assist
      ( ) 0 needs assistance to keep from falling/unable to try

13. **STANDING UNSUPPORTED ONE FOOT IN FRONT**
INSTRUCTIONS: (DEMONSTRATE TO SUBJECT)
Place one foot directly in front of the other. If you feel that you cannot place your foot directly in front, try to step far enough ahead that the heel of your forward foot is ahead of the toes of the other foot. (To score 3 points, the length of the step should exceed the length of the other foot and the width of the stance should approximate the subject's normal stride width)

( ) 4 able to place foot tandem independently and hold 30 seconds
( ) 3 able to place foot ahead of other independently and hold 30 seconds
( ) 2 able to take small step independently and hold 30 seconds
( ) 1 needs help to step but can hold 15 seconds
( ) 0 loses balance while stepping or standing

14. **STANDING ON ONE LEG**
INSTRUCTIONS: Stand on one leg as long as you can without holding.
( ) 4 able to lift leg independently and hold >10 seconds
( ) 3 able to lift leg independently and hold 5-10 seconds
( ) 2 able to lift leg independently and hold = or >3 seconds
( ) 1 tries to lift leg unable to hold 3 seconds but remains standing
        independently
( ) 0 unable to try or needs assist to prevent fall

(   ) TOTAL SCORE (Maximum = 56)

*References
Wood-Dauphinee S, Berg K, Bravo G, Williams JI: The Balance Scale: Responding to clinically meaningful changes. Canadian Journal of Rehabilitation 10: 35-50,1997

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Berg K, Maki B, Williams JI, Holliday P, Wood-Dauphinee S: A comparison of clinical and laboratory measures of postural balance in an elderly population. Arch Phys Med Rehabil 73: 1073-1083, 1992

Berg K, Wood-Dauphinee S, Williams JI, Maki, B: Measuring balance in the elderly: validation of an instrument. Can. J. Pub. Health July/August supplement 2:S7-11, 1992

Berg K, Wood-Dauphinee S, Williams JI, Gayton D: Measuring balance in the elderly: preliminary development of an instrument. Physiotherapy Canada 41:304-311, 1989

BERG BALANCE SCALE*

Description
The Berg Balance Scale is an objective measure of balance abilities. The test has been used to identify and evaluate balance impairment in the elderly.

Population
The elderly client with stroke, Parkinson's disease and other causes of balance impairment.

Time to Complete
15 to 20 minutes

Cost
Nominal

Training
None required

INSTRUCTIONS
The directions for items are provided on the scoring sheet.

SCALING
Format
Task performance

Subscales
The scale consists of 14 tasks common in everyday life. The items test the subject's ability to maintain positions or movements of increasing difficulty by diminishing the base of support form sitting, standing, to single leg stance. The ability to change positions is also assessed. Each item is scored on a scale from 0-4, for a minimum of 56 points.

Scoring
Scoring is based on a 5-point ordinal scale.

A score of 4 – performs movements independently and holds position for the prescribed time or performed within a set time frame. 0 – unable to perform item. A description of the criteria for scoring each level is provided.

RELIABILITY
Internet Consistency
Fourteen clients aged 65 and over displaying varying degrees of balance impairment were videotaped while performing the 14 movements on the scale. Cronbach's alpha for the total score 0.96. Individual items ranged from 0.72 to 0.90. Correlations ranged from 0.38 to 0.94.
Intra-rater Reliability
Four therapists rated the same videotape again, one week later. The ICC for the total score was 0.99, ranging from 0.71 to 0.99 for the individual items.

Inter-rater Reliability
Five physiotherapists and one test administrator rated the evaluations of the same 14 clients. The ICC for the total score was excellent (0.99), and was good to excellent for the individual items (0.71-0.99).

VALIDITY
Content (Domain or face)
The items were selected based on interview with 10 professionals and 12 geriatric clients. The list of items was revised following a pretest of all preliminary items.

Construct
Seventy acute stroke clients were tested on the Berg Balance Scale, the Barthel, and the Fugl-Meyer Scale at 4, 6 and 12 weeks post-stroke. Correlations between the Berg scale and the Barthel were 0.80 to 0.94, and 0.62 to 0.94 for the Fugl-Meyer.

Concurrent
The score of 23 clients on the Berg Balance Scale were correlated with the global ratings provided by caregivers (poor, fair, good). Spearman correlations were significant, with only 4 pairs of observation not corresponding.

Correlations between scores on the Berg Balance Scale and ratings of 113 residents of a home for the elderly and their caregivers ranged from poor to good (elderly: 0.39 to 0.41; caregivers: 0.47 to 0.61).

Thirty-one elderly clients were measured on the Berg Balance Scale, lab measures of postural sway and clinical measures of balance and mobility. Correlations for sway were -0.55, clinical measures -0.46 to -0.67, Tinetti balance subscale 0.91, Barthel mobility subscale 0.67, Up and Go Test -0.76

Predictive
One hundred and thirteen elderly were followed for 12 months, and were classified as having 0, 1, =>2 falls during that time. A Berg Balance Scale of <45 was predictive of multiple falls.

Responsiveness
The Berg Balance Scale discriminated between subjects according to their use of mobility aids (walker, cane, none). It was also found to differentiate between outcomes for groups of stroke clients. At 12 weeks post-stroke, scores were highest for those at home, lowest for those still in hospital and intermediate for clients in rehabilitation centres.

Tinetti Assessment Tool: Balance

Patient: _____   **Date:** _____

Location: _____   **Rater:** _____

Initial Instructions: Subject is seated in a hard, armless chair. The following maneuvers are tested.

<u>Task</u>	<u>Description of Balance</u>	<u>Score</u>
1. <u>Sitting balance:</u>	Leans or slides in chair	=0
	Steady, safe	=1 _____
2. <u>Arises:</u>	Unable without help	=0
	Able, uses arms to help	=1
	Able without using arms	=2 _____
3. <u>Attempts to arise:</u>	Unable without help	=0
	Able, requires> 1 attempt	=1
	Able to arise, 1 attempt	=2 _____
4. <u>Immediate standing balance</u> (first five seconds)<u>:</u>		
	Unsteady (swaggers, moves feet, trunk sway	=0
	Steady but uses walker or other support	=1
	Steady without walker or other support	=2 _____
5. <u>Standing balance</u>	Unsteady	=0
	Steady but wide stance (medial heels >4 in. apart) and uses cane or other support	=1
	Narrow stance without support	=2 _____
6. <u>Nudged</u>	(subject at maximum position with feet as close together as possible, examiner pushes lightly on subject's sternum with palm of hand 3 times):	
	Begins to fall	=0
	Staggers, grabs, catches self	=1
	Steady	=2 _____
7. <u>Eyes Closed</u>	(at maximum position No. 6)	
	Unsteady	=0
	Steady	=1 _____
8. <u>Turning 360 degrees</u>	Discontinuous Steps	=0
	Continuous	=1
	Unsteady (grabs, staggers)	=0
	Steady	=1 _____
9. <u>Sitting down</u>	Unsafe (misjudges distance, falls into chair)	=0
	Uses arms or not a smooth motion	=1
	Safe, smooth motion	=2 _____

Balance Score: _____ /16

Tinetti Assessment Tool: Gait

Patient: _____ **Date:** _____

Location: _____ **Rater:** _____

Initial instructions: Subject stands with examiner, walks down hallway or across room, first at "usual" pace, then back at "rapid, but safe" pace (using usual walking aids).

<u>Task</u>	<u>Description of Gait</u>	<u>Score</u>
10. <u>Initiation of gait</u>	(immediately after told to "go")	
	Any hesitancy or multiple attempts to start	=0
	No hesitancy	=1_____
11. <u>Step length and height</u>		
a. <u>Right swing foot</u>:	does not pass left stance foot with step	=0
	passes left stance foot	=1
	right foot does not clear floor completely with step	=0
	right foot completely clears floor	=1
b. <u>Left swing foot</u>:	does not pass right stance foot with step	=0
	passes right stance foot	=1
	left foot does not clear floor completely with step	=0
	left foot completely clears floor	=1_____
12. <u>Step Symmetry</u>		
	Right and left step length not equal (estimate)	=0
	Right and left step appear equal	=1_____
13. <u>Step Continuity</u>		
	Stopping or discontinuity between steps	=0
	Steps appear continuous	=1_____
14. <u>Path</u>	(estimated in relation to floor tiles, 12-inch diameter; observe excursion of 1 foot over about 10 ft. of the course.)	
	Marked deviation	=0
	Mild/moderate deviator or uses walking aid	=1
	Straight without walking aid	=2_____
15. <u>Trunk</u>	Marked sway or uses walking aid	=0
	No sway but flexion of knees or back or spreads arms out while walking	=1
	No sway, no flexion, no use of arms, and not use of walking aid	=2_____
16. <u>Walking Time</u>	Heels apart	=0
	Heels almost touching while walking	=1_____

Gait Score: _____ /12

Balance + Gait Score: _____ /28

Source: The Journal of the American Geriatric Society by Carole Lewis Ph.D, PT

TIMED UP AND GO TEST

The timed "Up & Go" (TUG) test measures, in seconds, the time taken by an individual to stand up from a standard arm chair (approximate seat height of 46 cm, arm height 65 cm), walk a distance of 3 meters (approximately 10 feet), turn, walk back to the chair, and sit down again.

The subject wears his/her regular footwear. If participant's usually use assistive devices such as canes or walkers, they **should** use them during the test, but this should be indicated on the data collection form. No physical assistance is given.

Setting Up the Test Area

- Determine a path free from obstruction
- Place a chair with arms at one end of the path.
- Mark off a 3 m (10 ft.) distance using tape or a cone or other clear marking.

Start the Test

- Speak clearly and slowly.
    - Inform participant of sequence and outcome
        - "When I say go, you will stand up from the chair, walk to the mark (cone) on the floor, turn around, walk back to the chair and sit down." "I will be timing you using the stopwatch." Ask participants to repeat the instructions to make sure they understand.
- Participant starts with their back against the chair, their arms resting on the arm rests, and their walking aid at hand
- Using a cue like "Ready, set, go" might be useful.
- Either a wrist-watch with a second hand or a stop-watch can be used to time the performance.

FEAR-AVOIDANCE BELIEFS QUESTIONNAIRE (FABQ)

NAME _____ DATE _____ AGE ____ Birthdate: ____ - ____ - ____ .

Here are some of the things that other patients have told us about their pain. For each statement please circle and number from 0 to 6 to say how much physical activity such as bending, lifting, walking or driving affect or would affect *your* back pain.

		Completely Disagree			Unsure			Completely Agree
1.	My pain was caused by physical activity	0	1	2	3	4	5	6
2.	Physical activity makes my pain worse	0	1	2	3	4	5	6
3.	Physical activity might harm my back	0	1	2	3	4	5	6
4.	I should not do physical activities which (might) make my pain worse	0	1	2	3	4	5	6
5.	I cannot do physical activities which (might) make my pain worse	0	1	2	3	4	5	6

The following statements are about how your normal work affects or would affect your back pain.

		Completely Disagree			Unsure			Completely Agree
6.	My pain was caused by work or by an accident at work	0	1	2	3	4	5	6
7.	My work aggravated my pain	0	1	2	3	4	5	6
8.	I have a claim for compensation for my pain	0	1	2	3	4	5	6
9.	My work is too heavy for me	0	1	2	3	4	5	6
10.	My work makes or would make my pain worse	0	1	2	3	4	5	6
11.	My work might harm my back	0	1	2	3	4	5	6
12.	I should not do my normal work with my present pain	0	1	2	3	4	5	6
13.	I cannot do my normal work with my present pain	0	1	2	3	4	5	6
14.	I cannot do my normal work till my pain is treated	0	1	2	3	4	5	6
15.	I do not think that I will be back to my normal work within 3 months	0	1	2	3	4	5	6
16.	I do not think that I will ever be able to go back to that work	0	1	2	3	4	5	6

Waddell G, Newton M, Henderson I, somerville D, Main CJ. A Fear-Avoidance Beleifs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. Pain. 1993 Feb; 52(2): 157-68

For Doctor Use Only:

Scoring

Scale 1: fear-avoidance beliefs about work - items 6,7,9,10,11,12,15 or 16. Add responses, divide by
Scale 2: fear-avoidance beliefs about physical activity - items 2,3,4,5

Waddell G, Newton M, Henderson I, somerville D, Main CJ. A Fear-Avoidance Beleifs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. Pain. 1993 Feb; 52(2): 157-68