

Outcomes Assessment

APPENDIX OF FORMS

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Please note that permission has been granted from the original authors of the outcomes assessment tools included in this appendix for use in clinical setting to track outcomes on patient populations. These may be reproduced and utilized in your clinic.

H-2 (Interview checklist)

Red Flags: AHCPR, (Bigos, 1994)
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Check-off list:

CANCER

- ÿ History of cancer
- ÿ Unexplained weight loss
- ÿ Pain not improved with rest
- ÿ Age > 50
- ÿ Failure to respond to a course of conservative care (4 weeks)
- ÿ LBP > 4 weeks

INFECTION

- ÿ Prolonged use of corticosteroids (such as organ transplant Rx)
- ÿ Intravenous drug use
- ÿ Urinary tract, respiratory tract or other infection
- ÿ Immunosuppression medication &/or condition

SPINAL FRACTURE

- ÿ History of significant trauma
- ÿ Minor trauma in person >50 years old or osteoporotic
- ÿ Age >70 years old
- ÿ Prolonged use of corticosteroids

CAUDA EQUINA

- ÿ Acute onset urinary retention or overflow incontinence
- ÿ Loss of anal sphincter tone or fecal incontinence
- ÿ Saddle anesthesia
- ÿ Global or progressive motor weakness in lower limbs

RED FLAG QUESTIONNAIRE

NAME _____ DATE _____ AGE _____

Please check the appropriate response. If "yes", please explain. If you are not sure, check the "?" box.

THANK YOU!

NO YES ?

☐	☐	☐	Do you have a past history of cancer?
☐	☐	☐	Have you had any unexplained weight loss?
☐	☐	☐	Does your pain improve with rest?
☐	☐	☐	Are you over 50 years old?
☐	☐	☐	Failure to respond to a course of conservative care (4-6 weeks)?
☐	☐	☐	Have you had spinal pain greater than 4 weeks?

NO YES ?

☐	☐	☐	Prolonged use of corticosteroids (such as organ transplant Rx)?
☐	☐	☐	Intravenous drug use?
☐	☐	☐	Current or recent urinary tract, respiratory tract or other infection?
☐	☐	☐	Immunosuppression medication &/or condition?

NO YES ?

☐	☐	☐	History of significant trauma?
☐	☐	☐	Minor trauma in person >50 years old?
☐	☐	☐	Do you have osteoporosis (weak bones)?
☐	☐	☐	Are you over 70 years old?
☐	☐	☐	Any history of prolonged use of corticosteroids?

NO YES ?

☐	☐	☐	Acute onset urinary retention or overflow incontinence (wet underwear)
☐	☐	☐	Loss of anal sphincter tone or fecal incontinence (bowel accidents)
☐	☐	☐	Saddle anesthesia (numbness in the groin region)
☐	☐	☐	Global or progressive muscle weakness in the legs (legs give out)

COMMENTS: _____

YELLOW-FLAG QUESTIONNAIRE

NAME _____ Primary complaint - _____

1. Please indicate your usual level of pain during **the past week**:

No pain 0 1 2 3 4 5 6 7 8 9 10 **Worst possible pain**

2. Does pain, numbness, tingling or weakness extend into your leg (from the low back) &/or arm (from the neck)?

None of the time 0 1 2 3 4 5 6 7 8 9 10 **All of the time**

3. How would you **rate your general health?** (10-x)

Poor 0 1 2 3 4 5 6 7 8 9 10 **Excellent**

4. If you had to spend the rest of your life with your condition as it is right now, how would you feel about it?

Delighted 0 1 2 3 4 5 6 7 8 9 10 **Terrible**

5. How anxious (eg. tense, uptight, irritable, fearful, difficulty in concentrating / relaxing) you have been feeling during **the past week**:

Not at all 0 1 2 3 4 5 6 7 8 9 10 **Extremely anxious**

6. How much you have been able to control (i.e., reduce/help) your pain/complaint on your own during **the past week**:

I can reduce it 0 1 2 3 4 5 6 7 8 9 10 **I can't reduce it at all**

7. Please indicate how depressed (eg. Down-in-the-dumps, sad, downhearted, in low spirits, pessimistic, feelings of hopelessness) you have been feeling in **the past week**:

Not depressed at all 0 1 2 3 4 5 6 7 8 9 10 **Extremely depressed**

8. On a scale of 0 to 10, how certain are you that you will be doing normal activities or working in six months?

Very certain 0 1 2 3 4 5 6 7 8 9 10 **Not certain at all**

9. I can do light work for an hour?

Completely agree 0 1 2 3 4 5 6 7 8 9 10 **Completely disagree**

10. I can sleep at night

Completely agree 0 1 2 3 4 5 6 7 8 9 10 **Completely disagree**

11. An increase in pain is an indication that I should stop what I am doing until the pain decreases.

Completely disagree 0 1 2 3 4 5 6 7 8 9 10 **Completely agree**

12. Physical activity makes my pain worse?

Completely disagree 0 1 2 3 4 5 6 7 8 9 10 **Completely agree**

13. I should not do my normal activities including work with my present pain.

Completely disagree 0 1 2 3 4 5 6 7 8 9 10 **Completely agree**

Please sign your name _____ Date _____

Yellow-Flag Score Summary

NAME _____ DOB / AGE _____

Question		Score					
	Dates:						
	PAIN						
1	Usual level of pain (0-10) this week (score is # circled)						
2	Frequency of radiating pain (0-10) (score is # circled)						
	PSYCHO-SOCIAL						
3	Self-rated health (0-10) (score is 10 - # circled)						
4	Symptom satisfaction (0-10) (score is # circled)						
5	Anxiety (0-10) (score is # circled)						
6	Locus of control (0-10) (score is # circled)						
7	Depression (0-10) (score is # circled)						
8	Ability to work 6 mo. from now (0-10) (score is # circled)						
	FUNCTION						
9	Light work tolerant for 1 hour (0-10) (score is # circled)						
10	Can sleep at night (0-10) (score is 10 - # circled)						
	PSYCHO-SOCIAL (Fear-avoidance)						
11	Pain = stop activity (0-10) (score is # circled)						
12	Physical activity = worse pain (0-10) (score is # circled)						
13	Should not do normal duty? (0-10) (score is # circled)						
	TOTAL PAIN SCORE						
	TOTAL PSYCHO-SOCIAL SCORE						
	TOTAL FUNCTION SCORE						
	TOTAL FEAR-AVOIDANCE SCORE						
	CORE TOTAL SCORE						

Scoring & Risk (Core Total):

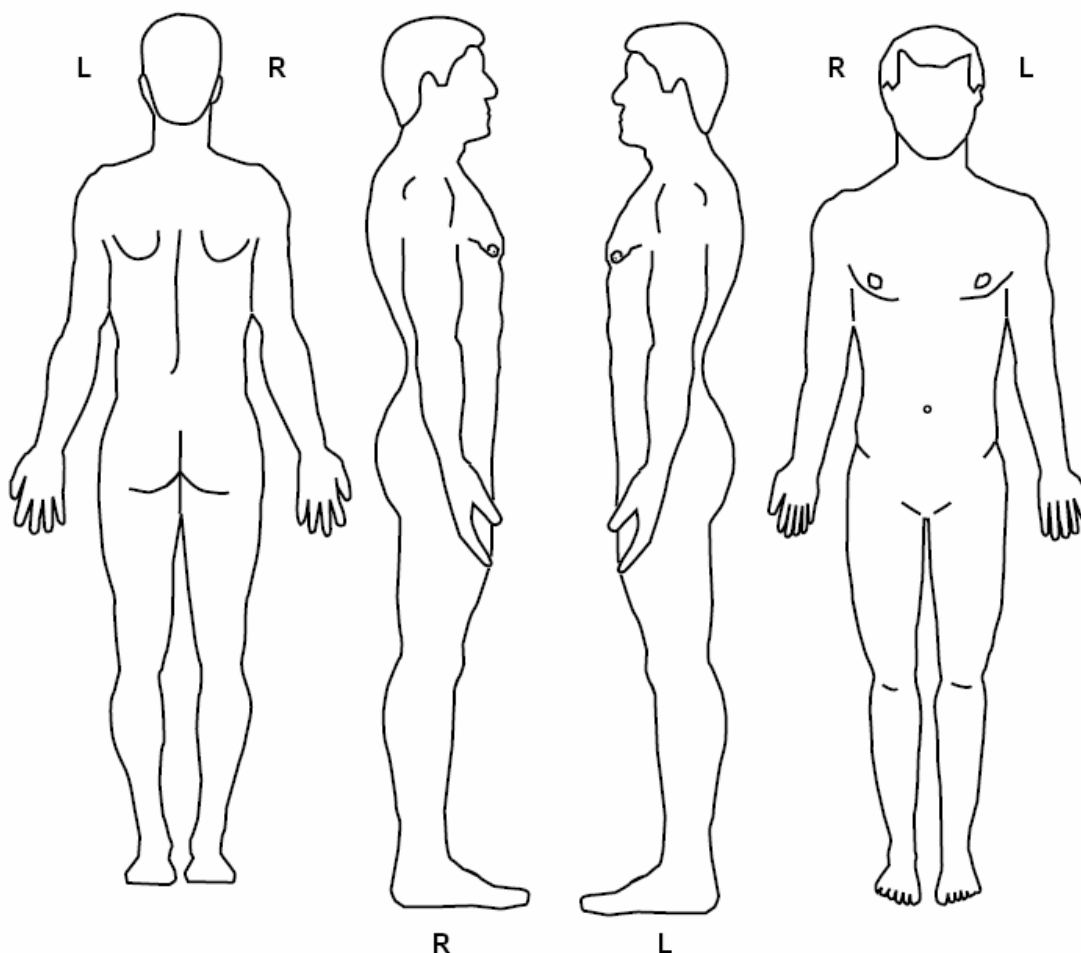
Low risk of chronic disability – Under 55 points
 Moderate risk of chronic disability – 55 to 65 points
 High risk of chronic pain and disability – Over 65 points

PAIN DRAWING

Name: _____ Date: _____

Please be sure to fill this out extremely accurately. Mark the area on your body where you feel the described sensation(s). Use the appropriate symbol(s), mark areas of radiating pain, and include all affected areas. You may draw in the face as well.

Numbness -----	Pins & 0000000	Burning xxxxxxxxx	Stabbing //////////////	Aching (((((((((
-----	Needles 0000000	Pain xxxxxxxxx	Pain //////////////	Pain (((((((((



VISUAL ANALOGUE SCALE

Please mark on the line the pain level that most accurately represents your pain:

NO PAIN: 0 1 2 3 4 5 6 7 8 9 10 UNBEARABLE PAIN

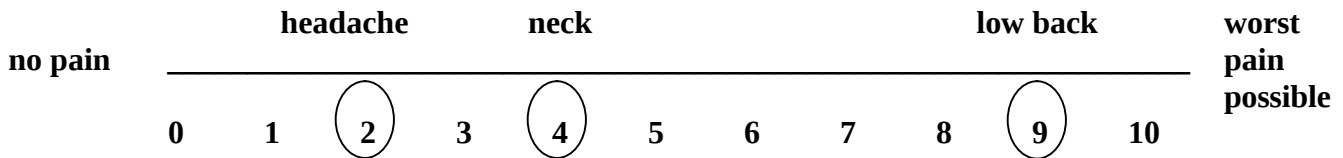
a) Right Now:----	0	1	2	3	4	5	6	7	8	9	10	_____
b) Average Pain	0	1	2	3	4	5	6	7	8	9	10	_____
c) At Best -----	0	1	2	3	4	5	6	7	8	9	10	_____
d) At Worst-----	0	1	2	3	4	5	6	7	8	9	10	_____

QUADRUPLE VISUAL ANALOGUE SCALE

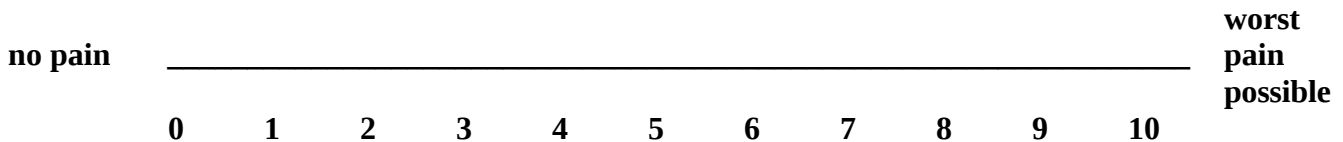
INSTRUCTIONS: Please circle the number that best describes the question being asked.

NOTE: If you have more than one complaint, please answer each question for each individual complaint and indicate the score for each complaint. Please indicate your average pain levels and pain at minimum / maximum using the last 3 months as your reference. If you have completed this form before, indicate your average pain level since the last time you completed this form.

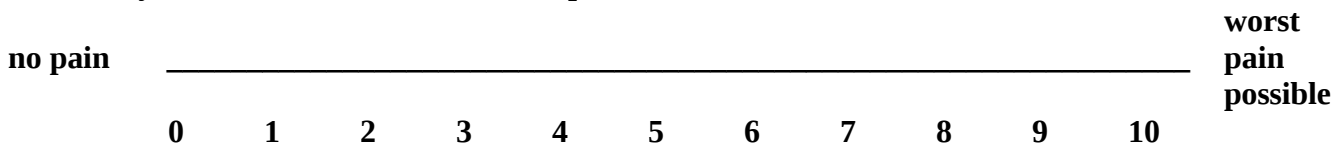
EXAMPLE:



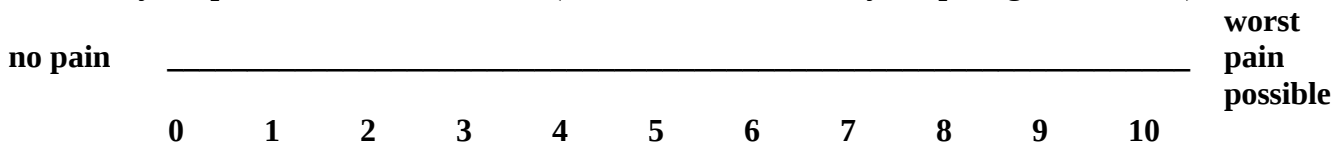
1. What is your pain RIGHT NOW?



2. What is your TYPICAL or AVERAGE pain?



3. What is your pain level AT ITS BEST (How close to “0” does your pain get at its best)?



What percentage of your awake hours is your pain at its best? _____%

4. What is your pain level AT ITS WORST (How close to “10” does your pain get at its worst)?



What percentage of your awake hours is your pain at its worst? _____%

NAME _____ AGE _____ DATE _____ SCORE _____

SCORE: #1 ____ + #2 ____ + #4 ____ = ____ / 3 x 10 = ____ (Low intensity = <50; High intensity = >50)

The BACK Bournemouth Questionnaire

The following scales have been designed to find out about your back pain and how it is affecting you. Please answer ALL the scales by circling ONE number on EACH scale that best describes how you feel:

1. Over the past week, on average, how would you rate your back pain?

No pain											Worst pain possible
0	1	2	3	4	5	6	7	8	9	10	

2. Over the past week, how much has your back pain interfered with your daily activities (housework, washing, dressing, walking, climbing stairs, getting in/out of bed/chair)?

No interference											Unable to carry out activity
0	1	2	3	4	5	6	7	8	9	10	

3. Over the past week, how much has your back pain interfered with your ability to take part in recreational, social, and family activities?

No interference											Unable to carry out activity
0	1	2	3	4	5	6	7	8	9	10	

4. Over the past week, how anxious (tense, uptight, irritable, difficulty in concentrating/relaxing) have you been feeling?

Not at all anxious											Extremely anxious
0	1	2	3	4	5	6	7	8	9	10	

5. Over the past week, how depressed (down-in-the-dumps, sad, in low spirits, pessimistic, unhappy) have you been feeling?

Not at all depressed											Extremely depressed
0	1	2	3	4	5	6	7	8	9	10	

6. Over the past week, how have you felt your work (both inside and outside the home) has affected (or would affect) your back pain?

Have made it no worse											Have made it much worse
0	1	2	3	4	5	6	7	8	9	10	

7. Over the past week, how much have you been able to control (reduce/help) your back pain on your own?

Completely control it											No control whatsoever
0	1	2	3	4	5	6	7	8	9	10	

Patient name _____ Patient signature _____ Date _____

Bolton JE, Breen AC. The Bournemouth Questionnaire: a short-form comprehensive outcome measure. I. Psychometric properties in back pain patients. J Manipulative Physiol Ther 1999;22:503-10.

The NECK Bournemouth Questionnaire

The following scales have been designed to find out about your neck pain and how it is affecting you. Please answer ALL the scales by circling ONE number on EACH scale that best describes how you feel:

1. Over the past week, on average, how would you rate your neck pain?

No pain											Worst pain possible
0	1	2	3	4	5	6	7	8	9	10	

2. Over the past week, how much has your neck pain interfered with your daily activities (housework, washing, dressing, lifting, reading, driving)?

No interference											Unable to carry out activity
0	1	2	3	4	5	6	7	8	9	10	

3. Over the past week, how much has your neck pain interfered with your ability to take part in recreational, social, and family activities?

No interference											Unable to carry out activity
0	1	2	3	4	5	6	7	8	9	10	

4. Over the past week, how anxious (tense, uptight, irritable, difficulty in concentrating/relaxing) have you been feeling?

Not at all anxious											Extremely anxious
0	1	2	3	4	5	6	7	8	9	10	

5. Over the past week, how depressed (down-in-the-dumps, sad, in low spirits, pessimistic, unhappy) have you been feeling?

Not at all depressed											Extremely depressed
0	1	2	3	4	5	6	7	8	9	10	

6. Over the past week, how have you felt your work (both inside and outside the home) has affected (or would affect) your neck pain?

Have made it no worse											Have made it much worse
0	1	2	3	4	5	6	7	8	9	10	

7. Over the past week, how much have you been able to control (reduce/help) your neck pain on your own?

Completely control it											No control whatsoever
0	1	2	3	4	5	6	7	8	9	10	

Patient name _____ Patient signature _____ Date _____

Patients' Global Impression of Change (PGIC) scale.

Name: _____ Date: _____ DOB: _____

Chief Complaint: _____

Since beginning treatment at this clinic, how would you describe the change (if any) in **ACTIVITY LIMITATIONS, SYMPTOMS, EMOTIONS, and OVERALL QUALITY OF LIFE**, related to your painful condition? (circle one number):

**Much
Better**

**No
Change**

**Much
Worse**

0 1 2 3 4 5 6 7 8 9 10

Patient's signature: _____ Date: _____

Reference: Hurst H, Bolton J. Assessing the clinical significance of change scores recorded on subjective outcome measures. J Manipulative Physiol Ther 2004;27:26-35.

OUTCOMES ASSESSMENT RECORD

NAME _____

DOB/AGE _____

DATE	PAIN			FUNCTION			
	VAS (Miscell.) a. Now b. Ave. c. Range CC _____	Pain Drawing	Options: 1. UE 2. CTS 3. Shoulder 4. Knee	Options: 1. Headache 2. Dizziness 3. SCL-90R 4. _____	VAS & · Neck Disability (NDI) · C- BQ	VAS & LB Disability: · Oswestry · Roland M • LB - BQ	Patient Global Impression Of Change
BASELINE							
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	
PROGRESS							
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	_____ %
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	_____ %
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	_____ %
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	_____ %
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	_____ %
DISCHARGE							
___/___/___	a. ___/10 b. ___/10 c. ___ - ___/10	Physiological 1. Yes 2. No	1. ___ % 2. Sx ___ % Fn ___ % 3. ___ % 4. ___ %	1. T ___; E ___ Fnctn ___ 2. T ___; P ___ F ___; E ___ 3. A ___; D ___ 4. _____	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	a. ___/10 b. ___/10 c. ___ - ___/10 _____ %	_____ %

Key: VAS visual analogue scale; CC Chief complaint; UE upper extremity; CTS carpal tunnel syndrome; SCL-90-R Symptom checklist 90-revised; NDI Neck disability index; LB low back; Sx Symptoms; Fn Function

OUTCOMES ASSESSMENT RECORD (Example)

DATE	PAIN			FUNCTION			
	VAS Cervical a. Now b. Ave. c. Range	Drawing	VAS a. Now b. Ave. c. Range	Health Status Circle: SF-36 HSQ, COOP	Neck Disability (NDI)	% Improve- ment (subj)	Patient Satisfaction
BASELINE							
Initial Presentation 3/17/97	Cervical a. 4-5/10 b. 4-5/10 c. 0-5/10	Physiological 1. Yes	R-Knee a. 2/10 b. 2/10 c. 0-6/10	See separate report <u>Knee Q.= 35%</u> <u>Shlder Q=28%</u>	26 %	NA	
PROGRESS							
4/16/97	a. 0/10 b. 0-2/10 c. 0-5/10	Physiological 1. Yes	R-Knee a. 0/10 b. 0-2/10 c. 0-3/10	See separate report <u>Knee Q.= 30%</u> <u>Shlder Q=22%</u>	22 %	1. C-30% 2. R Shlder 20% 3. R Knee 60-70%	NA
6-2-97 Knee is reported as primary complaint	a. 0/10 b. 0-2/10 c. 0-2/10	Physiological 1. Yes	R-Knee a. 0/10 b. 4-6/10 c. 0-8/10	See separate report <u>Knee Q.= 56%</u> <u>Shlder Q=18%</u>	(6-19-97) 18%	1. C-50% 2. R Shlder 30% 3. R Knee 20%	100 %
7-16-97 Pt received cortisone shot in knee	a. 0/10 b. 0-1/10 c. 0-2/10	Physiological 1. Yes	R-Knee a. 0/10 b. 2-4/10 c. 0-5/10	See separate report <u>Knee Q.= 32%</u> <u>Shlder Q=15%</u>	14%	1. C-60% 2. R Shlder 50% 3. R Knee 40%	100 %
8-15-97	a. 0/10 b. 0-1/10 c. 0-2/10	Physiological 1. Yes	R-Knee a. 0/10 b. 2-3/10 c. 0-4/10	See separate report <u>Knee Q.= 22%</u> <u>Shlder Q=12%</u>	10%	1. C-70% 2. R Shlder 50% 3. R Knee 50%	100 %
10-22-97 Sent for cortisone shot shoulder	a. 0/10 b. 0-1/10 c. 0-2/10	Physiological 1. Yes	R-Knee a. 0/10 b. 2-3/10 c. 0-4/10	See separate report <u>Knee Q.= 20%</u> <u>Shlder Q=18%</u>	8%	1. C-75% 2. R Shlder 40% 3. R Knee 40%	100 %
DISCHARGE							
2-4-98 D/C with PI=14% WP	a. 0/10 b. 0-1/10 c. 0-2/10	Physiological 1. Yes	R-Knee a. 0/10 b. 3-4/10 c. 0-5/10	See separate report <u>Knee Q.= 18%</u> <u>Shlder Q=12%</u>	10%	1. C-75% 2. R Shlder 50-60% 3. R Knee 50%	100 %

NAME: _____ DATE: _____ DOA: _____ AGE/BD _____

II. OUTCOMES ASSESSMENT (OBJECTIVE)

QUANTITATIVE FUNCTIONAL CAPACITY EVALUATION

NAME _____ DATE _____ DOB _____ DOI _____ TIME IN _____

Dx: _____

TEST <i>Standing</i>	INITIAL Date:	1st Re-exam Date:	2nd Re-exam Date:	3rd Re-exam Date:				
1. Pre-Test VAS	_____/10	_____/10	_____/10	_____/10				
2. 3-minute Step Test (pulse)	____pre____post-	____pre____post-	____pre____post-	____pre____post-				
3. ROM: PAIN SCALE:								
LUMBAR EXTREMITY (L/R)								
FLEXION (FORW.FLEX)	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2				
EXTENSION (BACKWARD EXT)	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2				
RT. LAT. FLEX (ABDUCTION)	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2				
LT. LAT. FLEX (ADDUCTION)	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2				
4. PAIN (Superficial): Waddell #1	+ / -	+ / -	+ / -	+ / -				
5. SIMULATION: Waddell #2								
a. Trunk Rotation	+ / -	+ / -	+ / -	+ / -				
b. Axial Compression (5 kg)	+ / -	+ / -	+ / -	+ / -				
TESTS	L	R	L	R	L	R	L	R
6. Horizontal Side Bridge (record in seconds)	Time/sec _____	Time/sec _____	Time/sec _____	Time/sec _____	Time/sec _____	Time/sec _____	Time/sec _____	Time/sec _____
7. Gastroc/Ankle DF (Knee extd)	____°	____°	____°	____°	____°	____°	____°	____°
8. Soleus/Ankle DF (Knee flexed)	____°	____°	____°	____°	____°	____°	____°	____°
9a.* One-Leg Stand (eyes open)	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.
9b.* One-Leg Stand (eyes closed)	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.	____Sec.
10. Exaggeration (Waddell #5)	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -
11. Rep. Squat (feet 15cm apart) - Thigh horizontal, 1 rep/2-3 sec. - Report # of reps; max. reps 50	____ # of reps.	____ # of reps.	____ # of reps.	____ # of reps.	____ # of reps.	____ # of reps.	____ # of reps.	____ # of reps.

Seated TESTS	_ L	_ R	L	_ R	L	R	L	R
12. Sitting SLR / DISTRACTION (Waddell #3; see #13) - LBP: (circle)	LBP: yes/no	LBP: yes/no	LBP: yes/no	LBP: yes/no	LBP: yes/no	LBP: Yes/no	LBP: yes/no	LBP: yes/no
13. Regional Neuro. (Waddell #4)	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -
14. ROM: PAIN SCALE:								
CERVICAL EXTREMITY (L/R)								
FLEXION (FORW.FLEX)	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2	FL ____ +2,1,0,-1,2
EXTENSION (BACKWARD EXT)	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2	EXT ____ +2,1,0,-1,2
RT. LAT. FLEX (ABDUCTION)	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2	RLF ____ +2,1,0,-1,2
LT. LAT. FLEX (ADDUCTION)	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2	LLF ____ +2,1,0,-1,2
RT. ROTATION (EXT. ROT.)	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2	RR ____ +2,1,0,-1,2
LT. ROTATION (INT. ROT.)	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2	LR ____ +2,1,0,-1,2

ROM PAIN SCALE: -2 = centralization; -1 = decreased pain; 0 = no change in pain;
+1 = increased pain; +2 = peripheralization

GO ONTO PAGE 2 p p p p

NAME _____ DATE _____ DOI _____

Supine TESTS	L	R	L	R	L	R	L	R
15.* (2 methods) CERVICAL STRENGTH – mmHg (dynamometer) CHIN FLEXION TEST Time to the point of Drops head	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.	Fl _____ RLF _____ Ext _____ LLF _____ C-Flexion Test: _____/_____. Sec.
16. Repetitive Sit-up Test • Sit-up, knees 90°, feet anchored, 1 rep/2-3 sec, touch thenar to patella, curl back down; max.50 reps	Endurance reps _____ / 50	Endurance reps _____ / 50	Endurance reps _____ / 50	Endurance reps _____ / 50	Endurance reps _____ / 50	Endurance reps _____ / 50	Endurance reps _____ / 50	Endurance reps _____ / 50
17. Hip Flexion Test / Modified Thomas • Measure: Passive Hip extension (psoas tension)	a. _____°	a. _____°	a. _____°	a. _____°	a. _____°	a. _____°	a. _____°	a. _____°
18. Hip Flexion/Supine SLR a. Waddell #3: supine + vs. sit- SLR b. Measure °: at point of knee flexion	a. + / - b. _____°	a. + / - b. _____°	a. + / - b. _____°	a. + / - b. _____°	a. + / - b. _____°	a. + / - b. _____°	a. + / - b. _____°	a. + / - b. _____°
19. Double Leg Lowering (maintain lordosis < 65°)	_____ degrees	_____ degrees	_____ degrees	_____ degrees	_____ degrees	_____ degrees	_____ degrees	_____ degrees

Prone TESTS	L	R	L	R	L	R	L	R
20. Static Back Endurance • Static Back Endurance: Pt holds trunk horizontal up to max. of 240 sec.	_____/240 sec.	_____/240 sec.	_____/240 sec.	_____/240 sec.	_____/240 sec.	_____/240 sec.	_____/240 sec.	_____/240 sec.
21. Knee Flexion Test / Modified Nachlas Test	_____°	_____°	_____°	_____°	_____°	_____°	_____°	_____°
22. Hip ROM • Internal Rotation • External Rotation	IR _____° ER _____°	IR _____° ER _____°	IR _____° ER _____°	IR _____° ER _____°	IR _____° ER _____°	IR _____° ER _____°	IR _____° ER _____°	IR _____° ER _____°

TESTS	L	R	L	R	L	R	L	R
23. Grip Dynamometry Dominant: Left / Right (circle) • Use Jamar • Use Position 1 or 2 • Three trials (average)	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____	1. _____ 2. _____ 3. _____ ave _____
24. Repetitive Arch Up Test • Repetitive arch up: Waist at table's edge fixed at ankle flexed 45° raises up to horizontal; 1 rep/2-3 seconds; max. 50reps	Reps _____/50	Reps _____/50	Reps _____/50	Reps _____/50	Reps _____/50	Reps _____/50	Reps _____/50	Reps _____/50
25. Post-Test VAS	_____/10	_____/10	_____/10	_____/10	_____/10	_____/10	_____/10	_____/10

SIGNED _____ DATE _____ TIME OUT _____
 SIGNED _____ DATE _____ TIME OUT _____
 SIGNED _____ DATE _____ TIME OUT _____
 SIGNED _____ DATE _____ TIME OUT _____

QUANTITATIVE FUNCTIONAL CAPACITY RESULTS

NAME: _____ Occupation: WC / BC* DATE: _____ BD: _____ AGE: _____
 Dx: _____ Test #: 1, 2, 3, 4 Symptom Duration: _____ Prior Episodes: YES / NO

TEST NAME	NORMAL	PATIENT RESULT		PERCENT OF NORMAL	
1. Pre-test VAS	0/10	_____/10			
2. 3-minute Step Test (pulse)	_____/____yo F M	____ Pre-____ Post-		%	
3. ROM / Lumbar Spine					
Flexion	65°	____°		%	
Extension	30°	____°		%	
Rt. Lateral Flexion	25°	____°		%	
Lt. Lateral Flexion	25°	____°		%	
4. Waddell #1: Pain	Negative	Positive / Negative		NA	
5. Waddell #2: Simulation	Negative	Positive / Negative		NA	
6. Gastrocnemius / Ankle DF	23°	Lt.:	Rt.:	%	%
7. Soleus / Ankle DF	25°	Lt.:	Rt.:	%	%
8a & b. One leg standing test	EO ____ sec. EC ____	L ____ / ____	R ____ / ____	L ____ / ____	R ____ / ____
9. Waddell #5: Exaggeration	Negative	Positive / Negative		NA	
10. Repetitive Squat *	____ / (max 50)	____ / ()		%	
11. Sitting SLR/ Distraction w/ #17a	LBP: YES / NO	LBP: YES / NO		NA	
12. Waddell #4: Regional Neuro	Negative	Positive / Negative		NA	
13. ROM / Cervical					
Flexion	50°	____°		%	
Extension	63°	____°		%	
Rt. Lateral Flexion	45°	____°		%	
Lt. Lateral Flexion	45°	____°		%	
Rt Rotation	85°	____°		%	
Lt Rotation	85°	____°		%	
14. Repetitive Sit-Up *	____ (max. 50)	____ / ()		%	
15. Cervical spine strength 2 methods: 1) Sphyg; 2) C-Flex T	1) See table 2) 39 sec.	Fl ____ RLF ____ Ext ____ LLF ____	C-Flexion Test: Shake/drop ____/____Sec.		
16. Hip flexion/Modified Thomas					
Iliopsoas	84°	Lt.:	Rt.:	%	%
17a. Waddell #3: Distraction/SLR	Negative	Positive / Negative		NA	
17b. Straight Leg Raise *	80°	Lt.:	Rt.:	%	%
18. Double leg lowering	<65 degrees w/ pelvic tilt	____ degrees		%	
19. Repetitive Arch-Up *	____ (max. 50)	____ / ()		%	
20. Knee Flexion	147 +/- 1.6	Lt.:	Rt.:	%	%
21. Hip Rotation ROM					
Internal Rotation ROM	41-45 (43)	Lt.:	Rt.:	%	%
External Rotation ROM	41-43 (42)	Lt.:	Rt.:	%	%
22. Horizontal Side Bridge	____ (max. 240 sec.)	____ sec.		%	
23. Grip Strength (Kg) *	Lt.:	Rt.:	Lt.:	Rt.:	%
24. Static Back Endurance *	____ (max. 240 sec.)	____ seconds		%	
25. Post-test VAS	0/10	____/10			
	AGE years	EYES OPEN (seconds)		EYES CLOSED (seconds)	
	20-59	29-30		21-28.8 (25 Sec. ave.)	
	60-69	22.5 ave		10	
	70-79	14.2		4.3	

* Normative data is determined by age, sex and occupation (Blue vs. white collar: BC / WC)

** A positive test #17b (Supine SLR) and a negative sitting / distracted SLR (test #11)= +Waddell sign for Distraction

QUANTITATIVE FUNCTIONAL CAPACITY RESULTS

NAME: Keann Esthetic Occupation: WC DATE: 10-30-98 BD: 1-19-58 AGE: 40
 Dx: LBP w/o leg pain Test #: 1, 2, 3, 4 Symptom Duration: 3 weeks Prior Episodes: YES/ NO

TEST NAME	NORMAL	PATIENT RESULT		PERCENT OF NORMAL	
1. Pre-test VAS	0/10	<u>2</u> /10		80%	
2. 3-minute Step Test (pulse)	<u>40</u> yo F M	<u>81</u> Pre- <u>92</u> Post-		78%	
3. ROM / Lumbar Spine					
Flexion	65°	<u>56</u> °		86%	
Extension	30°	<u>25</u> °		83%	
Rt. Lateral Flexion	25°	<u>27</u> °		108%	
Lt. Lateral Flexion	25°	<u>28</u> °		112 %	
4. Waddell #1: Pain	Negative	Positive / Negative		NA	
5. Waddell #2: Simulation	Negative	Positive / Negative		NA	
6. Horizontal Side Bridge	96M, 75W(max. 240sec.)	Lt <u>89</u> /Rt <u>91</u> sec.		93%	95 %
7. Gastrocnemius /Ankle DF	23°	Lt.: 21	Rt.: 24	91%	104%
8. Soleus / Ankle DF	25°	Lt.: 23	Rt.: 26	92%	104%
9a & b. One leg standing test	EO <u>30</u> sec. EC <u>30</u>	L <u>30/17</u> R <u>28/13</u>		L 100% / 57% R 93% / 43%	
10. Waddell #5: Exaggeration	Negative	Positive / Negative		NA	
11. Repetitive Squat *	<u>45</u> / (max 50)	<u>42</u> / (45)		93%	
12. Sitting SLR/ Distraction w/ #18a	LBP: YES / NO	LBP: YES / NO		NA	
13. Waddell #4: Regional Neuro	Negative	Positive / Negative		NA	
14. ROM / Cervical					
Flexion	50°	<u>56</u> °		112%	
Extension	63°	<u>58</u> °		92%	
Rt. Lateral Flexion	45°	<u>44</u> °		98%	
Lt. Lateral Flexion	45°	<u>42</u> °		93%	
Rt Rotation	85°	<u>78</u> °		92%	
Lt Rotation	85°	<u>82</u> °		96%	
15. Cervical spine strength 2 methods: 1) Sphyg; 2) C-Flex T.	39 sec.	Fl <u>8</u> RLF <u>6</u> Ext <u>16</u> LLF <u>6</u>		C-Flexion Test: Shake/drop <u>15/35</u> Sec	
16. Repetitive Sit-Up *	<u>34</u> (max. 50)	<u>46</u> / (34)		125 %	
17. Hip flexion/Modified Thomas					
Iliopsoas	84°	Lt.: 76	Rt.: 64	90 %	76 %
18a. Waddell #3: Distraction/SLR	Negative	Positive / Negative		NA	
18b. Straight Leg Raise *	80°	Lt.: 76	Rt.: 70	100 %	100 %
19. Double leg lowering	<65 degrees w/ pelvic tilt	<u>76</u> degrees		86%	
20. Static Back Endurance *	<u>129</u> (max. 240 sec.)	<u>96</u> seconds		74%	
21. Knee Flexion	147 +/- 1.6	Lt.: 126	Rt.: 135	86 %	92 %
22. Hip Rotation ROM					
Internal Rotation ROM	41-45 (43)	Lt.: 40	Rt.: 43	93 %	100 %
External Rotation ROM	41-43 (42)	Lt.: 41	Rt.: 43	98 %	102 %
23. Grip Strength (Kg) *	Lt.: 47 Rt.: 49	Lt.: 52	Rt.: 58	111 %	118 %
24. Repetitive Arch-Up *	<u>36</u> (max. 50)	<u>45</u> / (36)		125 %	
25. Post-test VAS	0/10	<u>1</u> /10		90%	
	AGE years	EYES OPEN (seconds)		EYES CLOSED (seconds)	
	20-59	29-30		21-28.8 (25 Sec. ave.)	
	60-69	22.5 ave		10	
	70-79	14.2		4.3	

* Normative data is determined by age, sex and occupation (Blue vs. white collar: BC / WC)

** A positive test #18a (Supine SLR) and a negative sitting / distracted SLR (test #12)= +Waddell sign for Distraction

Normative Data Charts

Please refer to the following charts for the normative data of the tests that vary due to age &/or gender tests (tests 2, 9, 11, 16, 20, 23, & 24). The norms for the other tests (not broken down by age/gender/work classification) are listed in the left of the 3 columns to right of the test name in the QFCE Summary Chart (in the “Normal” column).

STRENGTH AND ENDURANCE NORMATIVE DATA

1. Repetitive Squatting Test

AGE	MALES (n=242)						FEMALES (n=233)					
	Blue Collar		White Collar		All		Blue Collar		White Collar		All	
	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD
35-39	39	13	46	8	42	12	24	11	27	12	26	12
40-44	34	14	45	9	38	13	22	13	18	8	20	12
45-49	30	12	40	11	33	13	19	12	26	13	22	13
50-54	28	14	41	11	33	14	13	10	18	14	14	11
35-54	33	14	43	10	37	13	20	12	23	12	21	12

2. Repetitive Sit-up Test

AGE	MALES (n=242)						FEMALES (n=233)					
	Blue Collar		White Collar		All		Blue Collar		White Collar		All	
	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD
35-39	29	13	35	13	32	13	24	12	30	16	27	14
40-44	22	11	34	12	27	13	18	12	19	13	19	12
45-49	19	11	33	15	24	14	17	14	22	15	19	14
50-54	17	13	36	16	23	16	9	10	20	13	11	11
35-54	23	13	35	13	27	14	17	13	24	15	19	14

3. Repetitive Arch-up Test

AGE	MALES (n=242)						FEMALES (n=233)					
	Blue Collar		White Collar		All		Blue Collar		White Collar		All	
	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD
35-39	26	11	34	14	29	13	28	13	27	11	27	12
40-44	23	12	36	14	28	14	25	14	20	11	23	13
45-49	24	13	34	16	28	15	25	15	31	16	27	15
50-54	21	11	35	17	26	15	18	14	26	14	19	14
35-54	24	12	35	15	28	14	24	14	26	13	24	14

4. Static back endurance test (sec)

AGE	MALES (n=242)						FEMALES (n=233)					
	Blue Collar		White Collar		All		Blue Collar		White Collar		All	
	x	SD	x	SD	x	SD	x	SD	x	SD	x	SD

35-39	87	38	113	47	97	43	91	61	95	48	93	55
40-44	83	51	129	57	101	57	89	57	67	51	80	55
45-49	81	45	131	64	99	58	90	55	122	73	102	64
50-54	73	47	121	56	89	55	62	55	99	78	69	60
35-54	82	45	123	55	97	53	82	58	94	62	87	59

X = AVERAGE; SD = Standard deviation; Note: The last row represents the average of all the ages (35-54)

REFERENCES

1. Alaranta H, Hurri H, Heliovaara M, et al. Non-dynamometric trunk performance tests: Reliability and normative data. *Scand J Rehab Med* 1994; 26:211-215.
2. The Clinical Application of Outcomes Assessment. Ed.: Yeomans, SG. (Stamford, CT:) Appleton & Lange. 2000; chapters 12 & 16. ISBN #: 0-8385-1528-2.
3. Yeomans S, Liebenson C. Quantitative functional Capacity Evaluation: The Missing Link to Outcomes Assessment. *Top Clin Chiro* 1996; 3(1): 32-43.

TEST 15 Cervical spine strength

Method 1. Use of the modified Nexerciser with a sphyg head (use mmHg column)

	Normal $\pm$ SD (KPa)	Norm $\pm$ SD (mmHg) (KPa x .0075)	CV (%)	Lower cutoff (mean-1) (KPa/mmHg)	Reliab il-ity Coeffi - cient	Average % difference Trial 1 vs. 2	Intraclass correlation coefficient Trial 1 vs. 2
Flexion	4615 $\pm$ 1317	34.61 $\pm$ 9.88	28	3300 / 24.75	.93	10.4	0.98
Extension	7927 $\pm$ 2128	59.45 $\pm$ 15.96	27	5800 / 43.5	.97	7.0	0.95
R Lat Flex	7930 $\pm$ 1995	59.48 $\pm$ 14.96	25	6200 / 46.5	.87	6.4	0.99
L Lat Flex	8512 $\pm$ 2261	63.84 $\pm$ 16.95	27	6200 / 46.5	.95	NA	NA
R Rotation	7315 $\pm$ 1862	54.86 $\pm$ 13.97	26	5200 / 39.0	.79	4.0	0.98
L Rotation	6783 $\pm$ 1859	46.37 $\pm$ 13.94	28	5200 / 39.0	.79	NA	NA
Total	NA	NA	NA	NA	NA	7.0	0.98

SD = standard deviation; KPa = Kilopascals; mmHg = millimeter of mercury; CV = coefficient of variation

Table 16.17 The normative data and standard deviations of cervical spine strength are converted from kilopascals to mmHg by multiplying the KPa by a factor of 0.0075 (columns 2 & 3). The lower cutoff was computed by subtracting 1 SD from the mean. The reliability coefficient values reveals moderate to high reliability was obtained by this testing approach.

Modified with permission from Vernon HT, Aker P, Aramenko M, Battershill D, Alepin A, Penner T. Evaluation of neck muscle strength with a modified sphygmomanometer dynamometer: Reliability and validity. J Manipulative Physiol Ther 1992;15:343-349.

Method 2. Neck Flexion Test

Reference: Harris KD, Heer DM, Roy TC, Santos DM, Whitman JM, Wainner RS. Reliability of a measurement of neck flexor muscle endurance. PhysTher 2005;85(12):1349-1355.

PURPOSE: To determine the rater reliability in 41 subjects with and without neck pain enrolled in a repeated-measures reliability study. **METHODS:** Two raters used an isometric neck retraction test to assess neck flexor muscle endurance for all subjects during an initial session, and those without neck pain returned for testing one week later. **RESULTS:** good to excellent (intraclass correlation coefficient [(ICC(3,1) = .67, SEM = 11.5).

Subjects without pain averaged 38.95 sec, SD= 26.4. The group with neck pain averaged 24.1 seconds, SD = 12.8. Reliability coefficients differed between the 2 groups and ranged from moderate to excellent and improved after the first test session. The interrater reliability of data obtained with the neck flexor muscle endurance test in people with neck pain must be improved in order for clinicians to distinguish a clinically meaningful change from measurement error. The test was both statistically and clinically greater for subjects without neck pain.

TEST DIRECTIONS: Hook lying supine, chin maximally retracted and maintained isometrically, the subject lifted the head & neck approximately 2.5 cm (1 inch) above the plinth/table keeping the chin retracted to the chest. Once in position, a line was drawn across 2 approximated skin folds along the neck and the rater placed the left hand on the table just below the occipital bone. Verbal commands, "Tuck your chin" or "Hold your head

up” were given when either the line edges began to separate (chin poking) or, the subject touched the rater’s hand for more than 1 second.

2nd reference & Norms for the Neck Flexion Test:

Olson LE, Millar AL, Dunker J, Hicks J, Glanz D. Reliability of a Clinical Test for Deep Cervical Flexor Endurance. J Manip Physio 2006; 29(2):134-138.

	Mean	SD	Minimum	Maximum
Male (n = 6)	24.51	15.92	12.67	55.59
Female (n = 21)	20.18	8.80	9.94	47.32
Total	21.14	10.57	9.94	55.59

The Horizontal Side-bridge

McGill SM, Childs A, Leibenson C. endurance times for stabilization exercises: clinical targets for testing and training from a normal database. Arch Phys Med Rehabil 1999; 80:941-4.

Abstract:

Objective: to establish isometric endurance holding times, as well as ratios between torso extensors, flexors, and lateral flexors (stabilizers), for clinical assessment and rehabilitation targets.

Design: simple measurement of endurance times in four tests performed in random order by a healthy cohort. To measure reliability, a subsample also perform the tests again 8 weeks later.

Setting: university laboratory.

Participants: 75 young healthy subjects (31 men, 44 women).

Results: women had longer endurance times than men for torso extension, but not for torso flexion or for the "side bridge" exercise, which challenges the lateral flexors (stabilizers). Men could sustain the "side bridge" for 65 percent of the extensor time and 99 percent of the flexion time, whereas women could sustain the "side bridge" for only 39 percent of the extensor time and 79 percent of the flexion time. The tests proved to be reliable, with reliability coefficients of > 0.97 for the repeated tests on five consecutive days and again 8 weeks later.

Conclusion: healthy young men and women possess different endurance profiles for the spine stabilizing musculature. Given the growing support for quantification of endurance, these data of endurance times and thigh ratios between extensor, flexors, and lateral flexors groups in healthy normal subjects are useful for patient evaluation and providing clinical training targets.

The Horizontal Side Bridge

Task	Men			Women			All		
	Mean	SD	Ratio	Mean	SD	Ratio	Mean	SD	Ratio
Extensor	146	51	1.0	189	60	1.0	177	60	1.0
Flexor	144	76	0.99	149	99	0.79	147	90	0.86
Side Bridge, Rt	94	34	0.64	72	31	0.38	81	34	0.47
Side Bridge, Lt	97	35	0.66	77	35	0.40	85	36	0.5

Average: 95 (Males) 75 (Females)

Patient position: side lateral, top leg in front of lower leg resting on lower hip/thigh and elbow. The upper arm is placed against chest with the hand touching the anterior lower shoulder. The pelvis is raised off the table and held in a line with a long axis of the body supporting the weight between the feet and elbow. The down side QL is being tested.

GRIP AND PINCH STRENGTH NORMATIVE DATA

TABLE 1

Grip Strength (Kg)	MALES		FEMALES	
OCCUPATION	Major hand	Minor hand	Major hand	Minor hand
Skilled	47.0	45.4	26.8	24.4
Sedentary	47.2	44.1	23.1	21.1
Manual	48.5	44.6	24.2	22.0
Average	47.6	45.0	24.6	22.4

Table 1. The normative data for dominant (“major hand”) and non-dominant (“minor hand”) grip strength (in kilograms) broken down by occupation (left hand column) and gender.

TABLE 2

Grip Strength (Kg)	MALES		FEMALES	
AGE GROUP	Major hand	Minor hand	Major hand	Minor hand
<20	45.2	42.6	23.8	22.8
20-29	48.5	46.2	24.6	22.7
30-39	49.2	44.5	30.8	28.0
40-49	49.0	47.3	23.4	21.5
50-59	45.9	43.5	22.3	18.2

Table 2. The normative data for dominant (“major hand”) and non-dominant (“minor hand”) grip strength (in kilograms) broken down by age (left hand column) and gender.

TABLE 3

PINCH Strength (Kg)	MALES		FEMALES	
OCCUPATION	Major hand	Minor hand	Major hand	Minor hand
Skilled	6.6	6.4	4.4	4.3
Sedentary	6.3	6.1	4.1	3.9
Manual	8.5	7.7	6.0	5.5
Average	7.5	7.1	4.9	4.7

Table 3. The normative data for dominant (“major hand”) and non-dominant (“minor hand”) pinch strength (in kilograms) broken down by occupation (left hand column) and gender.

Reprinted with permission from Swanson AB, Matev IB, de Groot Swanson G. The strength of the hand. AMA Guides, 1993, 4th edition, pg. 64, Table 31; p. 65, Table 32; pg. 65, Table 33.

Physical Activity Readiness Questionnaire

(PAR-Q)

For most people physical activity should not pose any problem or hazard. PAR-Q has been designed to identify the small number of adults for whom physical activity might be inappropriate or those who should have medical advice concerning the type of activity most suitable for them.

Common sense is your best guide in answering these few questions. Please read them carefully and check the yes or no opposite the question if it applies to you.

YES NO

1. ☐ ☐ Has your doctor ever said you have heart trouble?
2. ☐ ☐ Do you frequently have pains in your heart and chest?
3. ☐ ☐ Do you often feel faint or have spells of severe dizziness?
4. ☐ ☐ Has a doctor ever said your blood pressure was too high?
5. ☐ ☐ Has your doctor ever told you that you have a bone or joint problem such as arthritis that has been aggravated by exercise, or might be made worse with exercise?
6. ☐ ☐ Is there a good physical reason not mentioned here why you should not follow an activity program even if you wanted to?
7. ☐ ☐ Are you over age 65 and not accustomed to vigorous exercise?

If you answered YES to one or more questions...

if you have not recently done so, consult with your personal physician by telephone or in person before increasing your physical activity and/or taking a fitness test.

If you answered NO to all questions...

If you answered PAR-Q accurately, you have reasonable assurance of your present suitability for an exercise test.

(PERMISSION GRANTED BUT ONLY IF THE ENTIRE FORM IS USED)

PAR-Q & YOU

You are encouraged to photocopy the **PAR-Q** but only if you use the entire form. ... ages of 15 and 69, the **PAR-Q** will tell you if you should check with your physician

uwfitness.uwaterloo.ca/PDF/par-q.pdf

uwfitness.uwaterloo.ca/PDF/parmedx.pdf

3-MINUTE STEP TEST

- Check the patient's pre-test pulse (30 x 2 standing): R/O Tachycardia (>100b/m)
- Patient steps up and down off of a 12" bench at the rate of 24 steps per minute for 3-minutes (Metronome 96 b/m) "up, up, down, down"
- Immediately (within 5 seconds), sit patient down and recheck the patient's pulse for a full minute and compare to the normative data

3 Minute Step Test Normative Data for Men

Rating	% ranking	Men Age 18-25	Men Age 26-35	Men Age 36-45	Men Age 46-55	Men Age 56-65	Men Age >65
Excellent	100 95 90	70 bpm 72 78	73 76 79	72 74 81	78 81 84	72 74 82	72 74 86
Good	85 80 75	82 85 88	83 85 88	86 90 94	89 93 96	89 93 97	89 92 95
Above Avg	70 65 60	91 94 97	91 94 97	98 100 102	99 101 103	98 100 101	97 100 102
Average	55 50 45	101 102 104	101 103 106	105 108 111	109 113 115	105 109 111	104 109 113
Below Avg	40 35 30	107 110 114	109 113 116	113 116 118	118 120 121	113 116 118	114 116 119
Poor	25 20 15	118 121 126	119 122 126	120 124 128	124 126 130	122 125 128	122 126 128
Very Poor	10 5 0	131 137 164	130 140 164	132 142 168	135 145 158	131 136 150	133 140 152

Aerobic capacity values and rankings for 3-minute step test for men.

(Adapted from Y's Way to physical Fitness with permission of the YMCA of the USA, 101 N. Wacker Drive, Chicago, Il 60606.)

3 Minute Step Test Normative Data for Women

Rating	% ranking	Women Age 18-25	Women Age 26-35	Women Age 36-45	Women Age 46-55	Women Age 56-65	Women Age >65
Excellent	100 95 90	72 bpm 79 83	72 80 86	74 80 87	76 88 93	74 83 92	73 83 86
Good	85 80 75	88 93 97	91 93 97	93 97 101	96 100 102	97 99 103	93 97 100
Above Avg	70 65 60	100 103 106	103 106 110	104 106 109	106 111 113	106 109 111	104 108 114
Average	55 50 45	110 112 116	112 116 118	111 114 117	117 118 120	113 116 117	117 120 121
Below Avg	40 35 30	118 122 124	121 124 127	120 122 127	121 124 126	119 123 127	123 126 127
Poor	25 20 15	128 133 137	129 131 135	130 135 138	127 131 133	129 132 136	129 132 134
Very Poor	10 5 0	142 149 155	141 148 154	143 146 152	138 147 152	142 148 151	135 149 151

Aerobic capacity values and rankings for 3-minute step test for women.

REHAB OPTIONS

QFCE Tests	Exercise CD: Table of Contents (Partial)
1. VAS	NA: note if pain > 6 / 10, consider safety in QFCE/Rehab, catastrophization/chronic pain
2. 3-minute Step Test	1) Exercise Log – a form for home-documenting the exercises utilized 2) Exercise Options Sheet: includes a method for calculating the 85% Max. Heart Reserve (exercise examples include): Running, Walking, Stepper, Jump rope, Treadmill, Cross-country ski machine, Cycling, Rowing
3. ROM / Lumbar Spine	Use: L-ROM exercise Master Sheet.doc Exercises: Consider the following for <u>ALL</u> L-ROM impairments after the acute stage. 1) Pelvic Stabilization – Gym Ball – pelvic tilts, bridge, sit-backs/abds, wall-squats, superman, see-saw (levels I, II, III) Use with the companion Pelvic stab Gym Ball documentation form 2) Pelvic Stabilization – Floor pelvic tilt, 4-point, lunges, dead-bug, swimmers, bridges, curl-ups; Use with the companion Pelvic stab floor documentation form 3) Proprioception exercises – see test 9 exercise form
Flexion	1) Flexion biased exercises - Include 11 exercises – Williams; <u>Stretch</u> : hamstrings (2 methods), adductors, lumbar erector spinae, piriformis, and trunk rotators; <u>Strengthen</u> : abdominal muscles, squats
Extension	1) Extension biased exercises – McKenzie – Include 6 methods of self-extension, side-gliding, and the hand-heel rock exercise
Lateral Flexion	1) Lat flexion & rotation Floor exerc – include Lat. fl / scoliosis, Lat fl w/ hand wts, chair twists, knee to floor supine rotations 2) Lat flexors & rotators GBall exercise – include trunk rotations, lat fl side-lying
4. Waddell #1: Pain	When 3 of 5 positive signs – consider Psychometrics: promote active care / minimize passive care, emphasize work return; consider co-management if off work > 4 weeks; identify early! See files in folder for further discussion.
5. Waddell #2: Simulation	SEE #4
6. Horizontal Side-bridge	1) Side Bridge Exercises 2) See Test 3, Pelvic Stabilization – Floor
7. Gastrocnemius /Ankle DF	1) Calf Stretch Options - Stretch gastroc/soleus muscles: calf-wall stretch, heels off step - ankle DF/PF stretch, rocker and wobble board with appropriate balance challenges
8. Soleus / Ankle DF	SEE #7
9a & b. One leg standing test	1) Balance challenge exercise options - Proprioception exercises: ball, one-leg stand, rocker and wobble boards, balance sandals; playing catch during trunk curl
10. Waddell #5: Exaggeration	SEE #4
11. Repetitive Squat	Lunges; wall squats; quad. Sets; muscle stretch of hamstrings, iliopsoas, gastroc/soleus; proprioception exercises ball, one-leg stand, rocker and wobble boards, balance sandals
12. Waddell #3: Distraction	SEE #4 (see test 18a for supine SLR Waddell Sign portion of the test)
13. Waddell #4: Regional Neuro	SEE #4
14. ROM / Cervical	1) Test 14 & 15 Cervical spine ROM & strength – circle exercises that are indicated for each individual patient
Flexion	Stretch extensors, strengthen flexors, promote chin retraction posture correction
Extension	Stretch flexors, strengthen extensors, promote chin retraction posture correction
Lateral Flexion	Stretch contralateral lateral flexors (LF), strengthen homolateral LF, promote chin retraction posture correction
Rotation	Circumduction, stretch and strengthen appropriate muscles (based on exam findings)
15. Cervical spine strength	1) Test 14 & 15 Cervical spine ROM & strength - Use slightly deflated beach ball with isometric resistance in frontal & sagittal planes; PIR, self-stretches, self-strengthening exercises
16. Repetitive Sit-Up	1) Abdominal Strengthening Exercises - Strengthen: abdominals (obliques > rectus) curl-ups, GM; QL; Stretch: Iliopsoas, L-erector spinae; side-bridge (see Figure 16-34)
17. Modified Thomas Iliopsoas	1) Psoas stretch exercises - Stretch iliopsoas
18a. Waddell #3: Distraction	SEE #4
18b. Straight Leg Raise	Stretch hamstrings, adductors, TFL, iliopsoas, MRTs
19. Double leg lowering	1) Abdominal Strengthening Exercises Lower abdominal strengthening; sit-up track
20. Static Back Endurance	Extensor Strengthening exercises : Strengthen: Lumbar extensors-see pelvic stabilization: superman, see-saw, Lumbar extensions; reps of arch-ups, or from floor, reverse sit-up, side-bridge
21. Knee Flexion	1) Quadriceps femoris stretch Quadriceps stretch and strengthening (emphasize last 5° of extension-VMO); stretch Hamstrings
22. Hip Rotation ROM	1) Hip ROM Exercises
Internal Rotation ROM	Stretch tight external rotators (piriformis, GMed), hip capsule stretch)
External Rotation ROM	Stretch tight internal rotators, hip capsule stretch
23. Grip Strength	1) Grip & wrist strength exercises 2) Grip & wrist stretch – CTS exercises 3) Thera-tube Grip & wrist strength exercises
24. Repetitive Arch-Up	1) Extensor Strengthening Strengthen: Lumbar extensors-see pelvic stabilization; reverse sit-ups; side-bridge
25. Post-test VAS	Compare to initial score, give home instructions of appropriate item such as ice, rest

Additional resources to consider:

- 1) www.yeomansdc.com : The QFCE specific exercise manual/CD for rehabilitation options. In addition, **Phases Rehab** offers QFCE specific protocols that can be printed individually and given to the patient as the patient is being trained. Please contact this author directly for more information (920-748-3644; sgyeomans@charter.net).
- 2) Text books:
 - a. “Rehabilitation of the Spine – A Practitioner’s Manual” released in 2006 is an excellent resource (available from www.lww.com, ISBN #: 0-7817-2997-1).
- 3) www.caretrak-outcomes.com: A website where input of the QFCE results can be completed so that no manual calculations of % norms is required & a report is generated.
- 4) www.gymballstore.com : Offers gymballs, books, DVDs, and more..