



The Role of Patient Questionnaires

Why, how and where to find them

A. Introduction

MRS. STEINWAY HAS BEEN seeing you three times a week for the past month for neck pain following a motor vehicle accident. Mr. Gonzales has had similar treatment for back pain at work.

You have seen them improve, but they still have significant pain and some disability and, quite frankly, are discouraged. They are wondering if there has been much benefit and whether they should continue with chiropractic care. So do their employers, who have them on limited duties at work.

How do you demonstrate to them that they have improved? How do you document this for their employers and health insurance plans, justifying continued care? How do you know when you have reached the point of maximum therapeutic improvement?

Later, after Mr. Gonzales has been discharged from care, suffered deterioration and returned for supportive/maintenance care, how can you quickly and authoritatively demonstrate his relapse and need for ongoing care to avoid future pain and disability?

Very fortunately, there is now an easy, proven and acceptable way to do these things, ideally suited to chiropractic practice – using patient questionnaires that have been established as valid and reliable.

The July 2000 issue of *The Chiropractic Report* reviewed the clinical application of patient questionnaires, with examples, but in the last twelve years there have been significant advances in the understanding and use of outcome assessment tools (OATs) in general, specifically including patient questionnaires. For example:

- The Bournemouth Questionnaires for back, neck and general musculoskeletal complaints developed by UK chiroprac-

tic researchers. These are time-efficient in clinical practice, measure both physical and psychosocial factors, have been validated and are available on-line in several languages, and have gained international acceptance and popularity.

- During the past year an Industrial Insurance Chiropractic Advisory Committee to the Washington State Department of Labor and Industries has prepared an excellent new on-line resource with recommendations on how best to document and score functional improvement in chiropractic practice – with links to all of the outcome questionnaires or scales recommended.¹

- There is new knowledge not only on using questionnaires to track clinical change in practice, but also to predict results/outcomes.

Accordingly this issue of *The Chiropractic Report* reviews the current status and use of patient questionnaires, with a focus on what is appropriate and efficient in daily chiropractic practice.

B. Background

1. Historically, practitioner measurements of outcomes (e.g. spine motion and muscle strength using standard equipment such as goniometers and dynamometers, analysis of x-rays, etc.) were regarded as scientific and ‘hard data’, whereas subjective patient reports of symptoms, behavior and satisfaction were regarded as less scientific and ‘soft data’. That has all changed for two reasons. First, research has shown that carefully validated patient questionnaires and pain scales are every bit as scientific as practitioner measurements. Second, patient questionnaires go to the heart of the matter—actual improvements in pain levels and ability to perform daily functions including return to work, and overall satisfaction with care.

The Chiropractic Report would like to acknowledge and thank Dr Steven Yeomans of Ripon, Wisconsin, who served as a consultant for this issue. All opinions, facts and content, however, are the sole responsibility of this publication.

Dr Yeomans is editor of *The Clinical Application of Outcomes Assessment* (Appleton & Lange, 2000, 696 pages), a leading text on both subjective and objective outcome assessment scales, questionnaires and other tools. For purchase of this, or his new CD with numerous outcome tools including those developed since 2000 and those referred to in this Report, go to www.yeomansdc.com.

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This applies particularly to areas relevant to chiropractic practice—neck pain, headache, back pain and general health. As an example, Richard Deyo, MD, MPH, a respected authority in the field of back pain and an early champion of patient questionnaires, quotes these comparative rates for the reliability of different outcome measures in back pain trials—on a scale where 1.00 is fully reliable and perfect.²

Physical Measurements (By professionals)	Reliability
Anterior spine flexion	.50
Passive straight-leg raising	.78
Ankle dorsiflexion strength	.50
Patient Survey Instruments	
<i>Ability to perform daily activities</i>	
Sickness Impact Profile (SIP)	.90
<i>Pain Measurement</i>	
Visual Analogue Scale (VAS)	.94

In summary, the clear message from science, third party payers and clinical reality is that the primary outcome measures to be used in chiropractic practice should be patient questionnaires and pain scales.

2. This does not mean that objective outcome assessment tools (OATs) are unimportant and can be ignored. There are many important qualitative (non-scored tests, usually reported as “positive” or “negative”) and quantitative objective tests (measuring repetitions, hold time, ROM).

These tests measure the patient’s physical ability to perform specific tasks (e.g., getting out of a chair, walking), muscle length (eg. hamstrings, triceps surae, quadriceps, hip rotators), strength and/or endurance (low back, lateral trunk, abdominals, cervical spine strength, extremity strength). They measure balance/proprioception (timed test), aerobic capacity (pulse and/or respiratory rates), non-organic behavior (specifically neck and low back regions) and more.³

These tests become increasingly important after the acute stage of a condition, replacing the pain provocation orthopedic and neurological testing initially performed to establish diagnoses.

This is a topic for another Report - however, the focus of this Report is on subjective OATs.

These subjective questionnaires/tools are used to practice more efficiently and more cost effectively, and to demonstrate and document results for the ben-

efit of the practitioner, the patient and any third party payer involved. For the clinician, there are three necessary and important steps to become outcomes-based in practice:

i. Understand the value of OATs and choose the ones that you want to use (e.g. Bournemouth-neck/back, Oswestry Low-Back Disability Index (ODI), Neck Disability Index (NDI), Headache Disability Index (HDI), Patient Specific Functional Scale (PSFS), anchored numerical rating scales (NRS), pain diagram, etc.)

ii. Learn how to score the tool and write the score on an Outcomes Assessment Record or some other form of a score card so all the scores from multiple OATs are located on a single page that can be quickly reviewed in a busy clinical setting.

iii. Establish a system for repeated administration of OATs to a patient at appropriate times – usually at re-examinations and at discharge – and to review the score results to determine an updated treatment plan.

Data from the OATs or patient questionnaires, together with data on cost, duration of care and patient satisfaction, can be used to establish “best practices” in an individual practice or for a group of practitioners, and, when aggregated, can be used to identify clinicians with the best clinical outcomes.

3. **Step One – Choosing OATs.** There are now literally thousands of outcome tools or questionnaires. These may be placed in different categories or domains as in Table 1.

Those most important for neuromusculoskeletal disorders commonly seen in chiropractic practice, and capturing all three aspects of the biopsychosocial model of management (physical, psychological and social), are:

- Condition-specific questionnaires
- Pain-related questionnaires/scales
- Psychometric questionnaires

Specific recommendations are made below in this article. Patient satisfaction is another increasingly important domain. In choosing which OATs to use the challenge is to obtain all valuable and necessary information without subjecting the patient and the clinician to burdensome multiple questionnaires.

4. **Step Two – Scoring the OATs and interpreting the results.** Different questionnaires and pain scales are

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scored differently, as in the examples below. There are some established general principles with respect to interpretation of scores as follows:

i. A statistically significant improvement, as often reported in research studies, is not an important measure. The improvement needed to track patient care in a clinical setting is *meaningful clinical change*.

ii. The consensus in current research is that a 30-50% improvement is generally regarded by patients as a positive and satisfying level of improvement – and meaningful clinical change.^{4,5}

Researchers have reached this conclusion by comparing two types of questionnaire – the Patient’s Global Impression of Change (PGIC) and condition-specific questionnaires or pain scales. For example one form of PGIC asks patients to circle a number next to the following simple statements:

Table 1 Domains of OATs with examples

Domain	Outcomes Assessment Tools
Condition-Specific	
a. Back	a. Bournemouth-Back (BQ-Back); Oswestry Disability Index (ODI); Roland-Morris (RMQ); Functional Rating Index (FRI); and many others.
b. Neck	b. Bournemouth-Neck (BQ-Neck); Neck Disability Index (NDI); Headache Disability Index (HDI).
c. Extremities	c. Carpal Tunnel Syndrome (CTS); Upper Extremity & Lower Extremity Functional Scales, Shoulder, Ankle, Knee, Hip
Pain related tools	Numerical Pain Scales (0-10) for pain now, average pain when it hurts, worst pain, least pain; Visual Analogue Scales (10cm line); pain diagrams; McGill Pain Q; Pain Disability Q
Psychometric (usable)	Beck's Depression Inventory; Modified Zung; Modified Somatic Perception Q; Pain Catastrophizing Scale; Fear-Avoidance Belief Q (FABQ); Functional Recovery Q (FRQ); Generalized Anxiety Disorder-7 (GAD-7); STarT Back Screening Tool-9 (SBST-9); Tampa Scale for Kinesiophobia (TSK-11); Yellow Flag Q.
General Health	Health Status Questionnaire-12 and -36, Dartmouth COOP Health Charts
Patient Satisfaction	Chiropractic Satisfaction Q., Visit Specific Q.
Job Satisfaction	Work APGAR
Disability Prediction	Vermont Disability Prediction Q; Severity Index (Yellow Flag Q.)
Clinical Change	Global Impression of Change (several versions)
Work Task Assessment	Spinal Function Sort, Hand Function Sort
Hybrid Questionnaires	Bournemouth-Back and Neck

Modified with permission from Yeomans (2000)³

Note: Most of the above OATs are available, with descriptions on how to use and scientific references, at the Washington State Department of Labor and Industries website at <http://www.Lni.wa.gov/Claims/Ins/Providers/Treatment/IICAC/default.asp#5>.

Since the start of the treatment, my overall status is:

- 1 Very Much Improved
- 2 Much Improved
- 3 Minimally Improved
- 4 No Change
- 5 Minimally Worse
- 6 Much Worse
- 7 Very Much Worse

When patients circle a 1 or 2, this equates to a 50% or a 30% change in score respectively on a numerical 0-10 pain scale, and patients are generally satisfied. With a 3 or more they are not.

As another example, Hurst and Bolton have reported that changes of 17 points on the Bournemouth Questionnaire – Back (47%) and 13 points on the Bournemouth Questionnaire – Neck (34%) correlated well with the patients' global impression of meaningful improvement.⁶

5. Step Three – When to repeat use of OAT. The purpose of a patient questionnaire or other outcome assessment tool (OAT) is to measure change over time so it must be administered on a repeated basis. Unfortunately there is not much published about how often each OAT should be repeated. These are

the observations and recommendations of Dr Steven Yeomans, a doctor of chiropractic from Wisconsin and author of the leading text *The Clinical Application of Outcomes Assessment*.^{3,7}

- The table below (Table 2) is based on my clinical experience in an acute-care chiropractic setting, and having regard to utilization review as practiced by insurers and claims reviewers in the United States.
- In a setting when office visits are less frequent, as for example 6-12 visits per year, a clinician may elect to repeat the

OAT on each visit if each visit represents an exacerbation of the given condition. On the other hand, if the care is supportive or maintenance-oriented, once or twice a year – after each 6 visits – may be adequate. Everything depends upon what the treatment goals are for each individual case.

- General health questionnaires, such as the HSQ or SF-36 or -12, should only be repeated infrequently, once or a maximum of twice annually, because of their lack of sensitivity to change over a short time frame.
- Patient satisfaction measures may be administered once every 2-4 weeks and prior to discharge.

C. Back-Pain Questionnaires

6. Numerous patient questionnaires have been developed to measure levels of function and disability in patients with low-back pain and indicate the effectiveness of treatment. Classic gold standards include the Oswestry Low-Back Pain Disability Questionnaire or Index (ODI) and the Roland - Morris Questionnaire (RMQ) because these were initially published in 1980 and 1983 respectively, have been validated in many studies, and published in many languages. Currently there are multiple version of the ODI and three versions of the RMQ (24-, 18- and 11-items) that have been validated and released. These classic questionnaires have been joined more recently by the Bournemouth Questionnaire (BQ), which many now consider to have superior clinical value, and these are the three questionnaires recommended and discussed in detail.

7. **Oswestry Questionnaire.** The original Oswestry Questionnaire was devel-

Table 2

Test	First visit	Daily or weekly (Verbal)*	Return to work (2 weeks)	Re-exams (2-4 weeks)	Exacer-bations	Discharge	6-month follow-up
Pain Qs*	X	(Verbal)*	X	X	X	X	X
Pain drawing*	X		X	X	X	X	
Condition-specific/hybrid	X		X	X	X	X	X
Psychometric	Possibly (if BQ >6)			Possibly		Possibly	

*Asking for pain levels verbally or otherwise during the history on each visit may be excessive and once a week may be more practical. Since pain resolution drives 67% of patient satisfaction, asking the quadruple VAS/NPS 4 pain questions: (pain right now, on average, at best, at worst) fairly frequently is important for tracking treatment outcomes.

From Yeomans⁷

Figure 1

Revised Oswestry Disability Index (ODI)

Name: _____

Date: _____

*This questionnaire is designed to enable us to understand how much your back pain has affected your ability to manage 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 which closely describes your problem right now.***

SECTION 1 – Pain Intensity

- A. The pain comes and goes and is very mild
- B. The pain is mild and does not vary much.
- C. The pain comes and goes and is moderate.
- D. The pain is moderate and does not vary much.
- E. The pain is severe but comes and goes.
- F. The pain is severe and does not vary much.

SECTION 2 – Personal Care

- A. I would not have to change my way of washing or dressing in order to avoid pain.
- B. I do not normally change my way of washing or dressing even though it causes some pain.
- C. Washing and dressing increases the pain, but I manage not to change my way of doing it.
- D. Washing and dressing increases the pain, and I find it necessary to change my way of doing it.
- E. Because of the pain, I am unable to do some washing or dressing without help.
- F. Because of the pain, I am unable to do any washing and dressing without help.

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 if they are conveniently positioned, for example on a table.
- D. Pain prevents me from lifting heavy weights off of the floor.
- E. Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned
- F. I can only lift very light weights at the most.

SECTION 4 – Walking

- A. I have no pain walking.
- B. I have some pain walking, but I can still walk my required normal distances.
- C. Pain prevents me from walking long distances.
- D. Pain prevents me from walking intermediate distances.
- E. Pain prevents me from walking even short distances.
- F. Pain prevents me from walking at all.

SECTION 5 – Sitting

- A. Sitting does not cause me any pain.
- B. I can sit as long as I need provided I have my choice of sitting surfaces.
- C. Pain prevents me from sitting more than one hour.
- D. Pain prevents me from sitting more than 1/2 hour.
- E. Pain prevents me from sitting more than 10 minutes
- F. Pain prevents me from sitting at all.

SECTION 6 – Standing

- A. I can stand as long as I want without pain.
- B. I have some pain while standing, but it does not increase with time.
- C. I cannot stand for more than one hour without increasing pain.
- D. I cannot stand for more than ½ hour without increasing pain.
- E. I cannot stand for more than 10 minutes without increasing pain.
- F. I avoid standing because it increases my pain right away.

SECTION 7 – Sleeping

- A. I have no pain in bed.
- B. I have pain in bed but it does not prevent me from sleeping well.
- C. Because of pain I only sleep ¾ of normal time.
- D. Because of pain I only sleep ½ of normal time.
- E. Because of pain I only sleep ¼ of normal time.
- F. Pain prevents me from sleeping at all.

SECTION 8 – Social Life

- A. My social life is normal and gives me no pain.
- B. My social life is normal, but increases the degree of pain.
- C. Pain prevents me from participating in more energetic activities, eg sports, dancing.
- D. Pain prevents me from going out very often.
- E. Pain has restricted my social life to home.
- F. I hardly have any social life because of pain.

SECTION 9 – Traveling

- A. I get no pain while traveling.
- B. I get some pain while traveling but none of my usual forms of travel make it any worse.
- C. I get some pain while traveling, but it does not cause me to seek alternative forms of travel.
- D. I get extra pain from travel that causes me to seek alternative forms of travel.
- E. Pain restricts me from all forms of travel.
- F. Pain restricts me from all forms of travel, except that done lying down.

SECTION 10 – Employment / Homemaking

- A. My normal job/homemaking activities do not cause me pain.
- B. My normal job/homemaking activities cause me extra pain, but I can still perform all that is required of me.
- C. I can perform most of my job/homemaking duties, but pain prevents me from performing more physically stressful activities eg, lifting, vacuuming.
- D. Pain prevents me from doing anything but light duties.
- E. Pain prevents me from doing even light duties.
- F. Pain prevents me from performing any job or homemaking chore.

DISABILITY INDEX SCORE: % _____

Source: Fairbank JC, Couper J, Davies JB, O'Brien JP. The Oswestry low back pain disability questionnaire. *Physiotherapy* 1980;66(8):271-3.

oped in the 1970s by Fairbank et al in Oswestry, Shropshire, England.⁸ The Revised Oswestry Low-Back Pain Disability Questionnaire (Revised Oswestry), validated by research that now includes chiropractic studies by John Hsieh et al.⁹ and Mitchell Haas et al.,¹⁰ is shown in Figure 1. It is noted:

a. Format and scoring. There are 10 categories, each with six possible responses—the patient chooses one. Scores of 0 (Response 1) to 5 (Response 6) are possible. Thus if all sections are completed a score of 50 (100%) is possible.

Example: $\frac{16}{50}$ (total scored) \times 100 = 32%

If one section is not completed, score as follows:

Example: $\frac{16}{45}$ (total scored) \times 100 = 35.5%

b. When to use. The questionnaire is completed by the patient before treatment, usually at two week intervals during treatment, and at discharge from care. The consensus of expert opinion seems to be that the ODI is slightly superior to other questionnaires for measuring progress with sub-acute and chronic pain.

c. Who administers and scores. With simple directions this can be your staff. The questionnaire has printed directions for the patient and takes 3-5 minutes to complete. It can then be scored and filed. Ensure that the patient has answered all questions before he/she leaves. Patients do not get copies—when they complete a repeat questionnaire in two weeks they should obviously be unaware of their earlier answers.

d. How to use the information. Overall ratings on the ODI are:

0–20% Minimal disability

20–40% Moderate disability

40–60% Severe disability

60–80% Crippled

80–100% Bedbound or exaggerating

Greater than 26% is considered a high disability score. Minimal clinical change is considered to be 10%. However meaningful clinical change is typically considered to be 4-16 points or 30-50%.^{11, 12}

8. Roland-Morris Questionnaire (RMQ). The RMQ was originally a 24-item survey that was developed from the larger Sickness Impact Profile (136 items) to produce a more efficient survey for use in practice, specifically for patients with low-back pain.¹³

The patient simply check/marks which items or statements apply at the time. Added together answers yield a score on a range of 0 to 24. The higher the score the worse the function. As the patient's health status improves the score decreases. Subsequently there have been revised versions known as the RM-18 and RM - 11, deleting items to make the RMQ even simpler and clinically useful while remaining reliable and valid.

The consensus of expert opinion is that the RMQ may be slightly more effective and sensitive in measuring improvement in patients with acute low-back pain than the ODI.

For the RMQ-24 scores exceeding the sum of 13 are considered high disability. Again, meaningful change requires a 30-50% reduction in scores.^{14, 15}

9. Bournemouth Questionnaire (BQ). Downloadable at <http://www.aecc.ac.uk/research/bu-study.aspx>, the BQ was

created by Jennifer Bolton PhD, Alan Breen DC, PhD, and others at the Anglo-European College of Chiropractic in the UK from the mid 1990s. This was first for back-pain (1999)¹⁶, and the same questionnaire with changed title was then validated for neck-pain (2002)¹⁷ and musculoskeletal complaints generally (2004).⁶ See Figure 2 for the English version. The BQ is also available in Danish, Dutch, French and German.

It was created in response to the biopsychosocial model of back-pain advanced by Waddell in his 1987 award-winning paper in *Spine*¹⁸, which was soon broadly adopted and identified back-pain as a multi-layered problem with physical and psychological dimensions. This model gave clinicians and researchers this problem according to Bolton:

“It was not feasible to ask patients to fill out the plethora of patient report questionnaires that were available at the time covering all the physical, cognitive, affective and behavioural dimensions of LBP. Not only that, but each questionnaire was very lengthy. So I set about identifying the salient aspects of the BPS model, and what seemed to be important dimensions to measure. Then the trick was to reduce each dimension to a single scale, and validate each of these against the lengthy original questionnaire, which we did for back and then in neck pain patients. Finally we came up with a generic BQ that can be used across non-specific MSK conditions, and we made no distinction of its use in chronic or acute patients.”¹⁹

The BQ is only seven items in length and takes patients only 1-2 minutes to complete. It includes multiple domains, including pain, activity tolerance and psychosocial items. Because it is so brief, comprehensive and easy to use, the BQ is now being widely used internationally by clinicians in the chiropractic profession and beyond. In the UK, for example, it has been recommended for use in monitoring patient-reported health outcomes in the Any Qualified Provider (AQP) initiative launched by the Department of Health for back and neck-pain patients. In the US it is recommended in the Occupational Health Practice Resource published by the Washington State Department of Labor and Industries and already referenced.

According to Yeomans “the importance of including psychosocial questions cannot be over-emphasized as depression, anxiety and locus of control are considered yellow flags which are barriers to recovery. When identified early on the emphasis of a treatment plan can be changed from passive to active care, facilitating a reduction in chronic pain issues typical in this patient population.”

Yeomans advises, “For over a year, I ran the BQ OATs simultaneously with the Oswestry and Neck Disability Index OATs on my back and neck patients, respectively, to determine which of the two fit better into my private practice. It seemed when patients were acute and in significant pain and disability, the BQ scores reflected their acute status more accurately. When the patient was improving and nearing resolution, the BQ scores seemed to reflect that improvement with greater responsiveness and accuracy.

Most importantly, including the psychosocial questions has allowed me the ability to address the very sensitive subject of psychological status with my patients without alienating or upsetting them. I simply point out, “...Mr or Ms Smith, I see that you have scored yourself as depressed. Is this something that you have control over? Would you like me to facilitate in finding you some help for this?” The practicality and the

responsiveness of the tool make it my favorite condition-specific OAT for my back and neck patient population.”⁷

D. Neck-Pain Questionnaires

10. Neck Disability Index (NDI) and Bournemouth Questionnaire (BQ). The NDI was developed and first validated in 1990-91 by Howard Vernon, DC, PhD and Sil Mior, DC, PhD, of the Canadian Memorial Chiropractic College in Toronto.²⁰ It is based upon the Oswestry Questionnaire, has very similar format, scoring and use, and is now in wide clinical use for evaluation of results for patients with cervical spine complaints.

The NDI’s limitation is that, like the ODI, it only measures physical factors or domains. For reasons just discussed the BQ is more comprehensive and more sensitive to change in acute-pain patients.

E. Headache—Headache Disability Inventory (HDI)

11. The HDI, developed by Jacobsen et al.²¹ in the early 1990s and now available by googling Headache Disability Index, is a questionnaire used to assess the impact on daily living of headaches, and the effectiveness of treatment. It is used for patients with cervicogenic headache, often together with the

Figure 3 Pain Severity Scale

Rate your pain on average (typical pain level when it hurts) by circling one number on the following scale:

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

Neck Disability Index. Yeomans reports that it is also useful in cases of headache without a cervical component, such as vascular headaches.³

The HDI is a 25-question tool that includes 12 emotional and 13 functional questions. Possible responses to each question are no (0 points), sometimes (2) and yes (4) giving a total scale of 100% and two sub-scales for emotional and functional status.

F. Pain Scales

12. Degree of patient satisfaction is closely linked to reduction in pain. This means that the literature has consistently recommended the use of pain scales to measure the several dimensions of pain, including severity (intensity), duration and frequency. The most important and most commonly assessed dimension is severity. Common pain scales are:

a. Anchored Numerical Rating Scales (NRSs). These are the most common. In the example seen in Figure 3 the pain described and to be rated by the patient is “pain on average (typical pain level when it hurts)”. Other common descriptors used in these scales are pain right now, pain at its best (lowest amount) and pain at its worst (highest amount).

Von Korff et al studied the sensitivity and specificity of these 4 pain questions, reporting that pain on average was slightly superior to the other 3 questions in tracking outcomes.²²

These scales typically use an 11-point scale (0-10) in which the patient circles a number representing the pain level—high scores typically equal more pain. The Anchored Pain Interference Scale asks the patient to circle the amount of activity interference caused by pain, rather than grading pain itself, an approach reported to be useful in predicting chronicity for low-back and other musculoskeletal conditions especially in injured work populations.^{23,24}

Combining both a numerical pain intensity (on average) scale and an interference scale

Figure 2

Bournemouth Questionnaire Back Pain (BQ-back)

Name:

Date:

Please circle **ONE** number for each of the following statements that best describes your neck pain and how it is affecting you **NOW**. Please read each question carefully before answering:

1. Over the past few days, on average, how would you rate your back pain?	No Pain 0 1 2 3 4 5 6 7 8 9 10 Worst Possible Pain
2. Over the past few days, on average, how has your back pain interfered with your daily activities (housework, washing, dressing, lifting, reading, driving, sleeping)?	No Interference 0 1 2 3 4 5 6 7 8 9 10 Unable to carry-on with normal day-to-day activities
3. Over the past few days, on average, how has your back pain interfered with your normal social routine including recreational, social, and family activities?	No Interference 0 1 2 3 4 5 6 7 8 9 10 Unable to participate in any social and recreational activities
4. Over the past few days, on average, how anxious (uptight, tense, irritable, difficulty in relaxing/concentrating) have you been feeling?	Not Anxious At All 0 1 2 3 4 5 6 7 8 9 10 Extremely Anxious
5. Over the past few days, on average, how depressed (down-in-the-dumps, sad, in low spirits, pessimistic, lethargic) have you been feeling?	Not Depressed At All 0 1 2 3 4 5 6 7 8 9 10 Extremely Depressed
6. Over the past few days, how do you think your work (both inside the home and/or employed work) has affected your back pain?	Makes It No Worse 0 1 2 3 4 5 6 7 8 9 10 Makes It Very Much Worse
7. Over the past few days, on average, how much have you been able to control (help/reduce) and cope with your back pain on your own?	I Can Control My Pain Completely 0 1 2 3 4 5 6 7 8 9 10 I Have No Control Whatsoever

Source: 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(8):503-10.

over the past month yields a Graded Chronic Pain Scale. An Anchored Self Control of Pain Scale asking “in the past week, how much control were you able to have over your pain?” provides additional information. Table 3, taken from the Washington State Department of Labor and Industries website and the link <http://www.Lni.wa.gov/ClaimsIns/Providers/Treatment/IICAC/> combines pain interference and self control of pain scales and illustrates how progress can be recorded with repeated assessments over time.

Table 3 Pain Scale Progress Checklist

	Baseline	1-2 weeks	3-6 weeks	7-8 weeks	Beyond 8 weeks	
ASSESSMENT / PROGRESS	Date:	Date:	Date:	Date:	Date:	
	Baseline Function Score:	Baseline Function Score:	Baseline Function Score:	Baseline Function Score:	Baseline Function Score:	
	Pain Interference* 0 1 2 3 4 5 6 7 8 9 10 None Unable to do any activities	Pain Interference* 0 1 2 3 4 5 6 7 8 9 10 None Unable to do any activities	Pain Interference* 0 1 2 3 4 5 6 7 8 9 10 None Unable to do any activities	Pain Interference* 0 1 2 3 4 5 6 7 8 9 10 None Unable to do any activities	Pain Interference* 0 1 2 3 4 5 6 7 8 9 10 None Unable to do any activities	Pain Interference* 0 1 2 3 4 5 6 7 8 9 10 None Unable to do any activities
	Self-control of pain** 0 1 2 3 4 5 6 7 8 9 10 Complete No control of pain	Self-control of pain** 0 1 2 3 4 5 6 7 8 9 10 Complete No control of pain	Self-control of pain** 0 1 2 3 4 5 6 7 8 9 10 Complete No control of pain	Self-control of pain** 0 1 2 3 4 5 6 7 8 9 10 Complete No control of pain	Self-control of pain** 0 1 2 3 4 5 6 7 8 9 10 Complete No control of pain	Self-control of pain** 0 1 2 3 4 5 6 7 8 9 10 Complete No control of pain
	Work Status <input type="checkbox"/> Full Duty <input type="checkbox"/> Modified <input type="checkbox"/> None	Work Status <input type="checkbox"/> Full Duty <input type="checkbox"/> Modified <input type="checkbox"/> None	Work Status <input type="checkbox"/> Full Duty <input type="checkbox"/> Modified <input type="checkbox"/> None	Work Status <input type="checkbox"/> Full Duty <input type="checkbox"/> Modified <input type="checkbox"/> None	Work Status <input type="checkbox"/> Full Duty <input type="checkbox"/> Modified <input type="checkbox"/> None	Work Status <input type="checkbox"/> Full Duty <input type="checkbox"/> Modified <input type="checkbox"/> None

***Pain Interference:** “In the past week, how much did pain interfere with your daily activities?”

****Self-control:** “In the past week, how much control were you able to have over your pain?”

b. Visual Analogue Scales (VASs). These consist of a 10 cm line with a pain descriptor at each end. (e.g. ‘no pain’ to the left and ‘unbearable pain’ to the right). Patients are asked to mark the line at a point that represents their perceived pain intensity. These are popular but have the drawback that patients must be monitored carefully to ensure they use a perpendicular line rather than a circle or other invalid mark. These have for the most part been replaced now by anchored numerical scales.

c. Verbal Rating Scales (VRs). These use single word descriptors in 3, 4, 5 or more ranks. One commonly used scale from the McGill/Melzack Pain Questionnaire is called ‘Present Pain Intensity’ and uses the words “none, mild, discomforting, horrible, excruciating” in a five-level scale.

d. Behavioural Rating Scales (BRs). This type of scale typically has six levels, each with a description. The third level, for example, may be “pain present, cannot be ignored, but does not interfere with every day activities.”

Pure pain scales must be supplemented with questions about activity tolerance and disability, as in the BRS and more particularly the questionnaires already described, as pain does not interfere with function in many patients and there is no linear relationship.

G. General MSK Function-PSFS

13. The Patient Specific Functional Scale (PSFS) is a relatively recent and very useful assessment tool or OAT that is receiving a lot of attention and is recommended by both Yeomans and at the Washington State Department of Labor and Industries website at <http://www.Lni.wa.gov/ClaimsIns/Files/OMD/IICAC/FunctionalScales.pdf>. It is not condition-specific and has now been validated for several body regions including the neck, back, knee and a variety of upper-extremity problems.²⁵

It has been found to be more responsive than the Roland-Morris with back-pain patients when activity limitations are

low.²⁶ It has been validated as a useful tool to measure patient progress during rehabilitation in a physiotherapy setting²⁷, and is being used for many other conditions and regions despite lack of published evidence to support validity.²⁸

The majority of condition-specific OATs refer to activities of daily living (ADL) options, such as “throwing a ball” for a shoulder-specific OAT. Maybe an elderly patient completing the OAT has not thrown a ball in years and will leave this blank. The PSFS does not offer specific activities but rather asks the patient to write down up to 5 ADLs that bother them most, each of which is scored on an 11-item NRS (0-10). Upon re-administration the same ADLs initially chosen are re-calculated to see what improvements or changes have occurred.

Another particular strength of the PSFS is that it serves as an excellent patient “goal-setting” list or device, goal-setting being an important item requested by some third party payers including Medicare in the US.

H. Psychometric Scales

14. These scales measure psychosocial factors such as depression, anxiety and fear of pain and activity in patients with back-pain and other musculoskeletal complaints, and may be used to identify psychosocial factors, predict and prevent chronic pain and disability, and to monitor meaningful change.

Four validated and commonly used scales originally from the UK and USA are recommended by the Washington State 2012 Industrial Insurance Chiropractic Advisory Committee(IICAC):

- Fear Avoidance Belief Questionnaire (FABQ)
- STarT Back Screening Tool-9 (SBST-9)
- Tampa Scale for Kinesiophobia-11 (TSK-11)
- Yellow Flag Severity Questionnaire (YFDQ)

For each of these the IICAC gives research references and has summarized and tabulated the purpose, description, when to administer, scoring and interpretation, and where to find and download. Are all available without charge. The tabulated information for the TSK-11 is shown in Table 4.

Table 4 Tampa Scale for Kinesiophobia-11 (TSK-11)

Outcome scale	Description & purpose	Administration	Scoring & interpretation	Licensing
Tampa Scale for Kinesiophobia-11 (TSK-11)	For: Assesses pain-related fear in back patients. #Items: 11 Other: A shortened version of the TSK-17 and 13, using only the questions with best psychometrics. Appears useful in spine care settings. Link: http://www.Lni.wa.gov/ClaimsIns/Files/OMD/IICAC/FunctionalScales.pdf	Baseline: Optional at intake in acute care, but recommended if suspicion of chronicity risk exists or meaningful improvement does not occur within 2 weeks. Follow-up: After about 4 weeks following initiation of care. Completion time: Less than 5 minutes.	11 statements are answered on a 4 point scale (1-4 disagree – agree) and the point value is summed. Score may be between 11 and 44. Higher scores reflect more anxiety and fear avoidance and correlate with greater likelihood of developing chronicity. Meaningful change: A change of 4 points can be considered meaningful.	None

I. Patient Satisfaction

15. Compelling reasons for measuring patient satisfaction are that this is overall the most important outcome for patients and third party payers, the evidence is that chiropractic patients generally have high levels of satisfaction²⁹, and you as a clinician will want to know how satisfied your patients are. Different scales and questionnaires include:

i. A simple 6-point scale such as very satisfied, satisfied, somewhat satisfied, somewhat dissatisfied, dissatisfied and very dissatisfied, administered periodically during care and on discharge.

ii. A more detailed satisfaction questionnaire, filled out following a first visit or periodically during care, and rating many individual items on a 7-point scale such as very poor (1), poor, fair, good, very good, excellent, the best (7). Items might include:

- Willingness to listen to what you have to say.
- Answers given to your questions.
- Explanations of treatment.
- Skill and ability of the chiropractor.
- Courtesy, politeness and respect shown by the chiropractor.
- Care received overall.

Excellent sample forms appear in Yeomans (2000).³

J. Conclusion

16. Are you measuring results/outcomes in your practice? Are you using the most recommended and efficient pain scales and questionnaires? If not, discover how easy it is to do this and the new answers it gives you for Mrs. Steinberg, Mr. Gonzales, and their health insurance and workers' compensation claims managers. Discover how much it tells you about the quality of your care. **TCR**

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