



Questionnaire: Fear Avoidance Beliefs (FABQ)

Introduction

An essential aspect to effective management of patients with spinal complaints includes the identification of risk factors for chronic pain and dysfunction. Fear-avoidance beliefs may lead people to avoid normal activities when they anticipate that these activities will be painful. Avoidance behavior suggests a passive coping style, and it may lead susceptible patients into a vicious cycle of inactivity triggering prolonged pain and disability. As such, fear-avoidance beliefs are considered by some to be a psychosocial *yellow flag* that has been implicated in the development of chronic musculoskeletal pain.

Fear avoidance, however, is only one of many factors that may affect an individual patient's prognosis. Isolated risk factors, like fear-avoidance beliefs, do not fully explain anyone's recovery or decline. In evaluating an individual patient's needs, it is important to create a comprehensive clinical picture that includes both the psychosocial and anatomic factors which interact to explain personal experiences of illness.

FABQ

This questionnaire consists of 16 statements concerning a patient's beliefs about their back pain. There are five general statements about the patient's pain, and the remaining 11 statements are about how work or other activities impact their pain. These items are graded on a zero to six point Likert** scale. An example is provided below:

	Completely disagree		Unsure		Completely agree		
1. My pain was caused by physical activity	0	1	2	3	4	5	6

* Psychosocial yellow flags are risk factors associated with chronic pain or disability. They include illness behaviors such as fear-avoidance behavior, anxiety, passivity, loss of sense of control and catastrophization. For further information on psychosocial yellow flags see: Hansen DT. Psychosocial predictors in spine care. *Top Clin Chiro* 1999;6(2):38-50 and Liebenson C. Improving activity tolerance in pain patients: A cognitive behavioral approach to reactivation. *Top Clin Chiro* 2000;7(4):6-14.

** A Likert scale is a psychometric scale commonly used in questionnaires where respondents rate their level of agreement with a statement (e.g., 0-6).

When to Administer the Test

The FABQ can be used to aid in patient management. As a screening tool, it may help to identify patients with a poorer prognosis.

Screening Option 1

Administer the questionnaire to all patients and then use the work scale to assess risk for chronicity.

Screening Option 2

Administer the questionnaire only to patients who openly display fear of movement, passive coping behaviors, exaggerated response to physical exam procedures, elevated ROQ or NDI scores, very low PSFS scores, or Waddell's signs and other illness behaviors.

Screening Option 3

Administer the questionnaire only to patients who fail to improve at the rate anticipated. The FABQ can be useful for determining possible reasons for a lack of response to care.

Scoring the Fear-Avoidance Beliefs Questionnaire (FABQ)

The FABQ contains 2 scales: a work scale (FABQ-W) composed of 7 items and a physical activity scale composed of 4 items. The two scales are scored separately. Another 5 additional items, which are not part of the scoring, complete the questionnaire. Higher FABQ scores indicate elevated fear-avoidance beliefs.

Work scale (FABQ-W)

The 7-item work scale has a point score that ranges from 0-42 points. It can be calculated as follows:

$$(\text{Total points for items 6, 7, 9, 10, 11, 12 and 15}) = \underline{\text{Work scale score.}}$$

Physical activity scale (FABQ-PA)

The physical activity scale (items 2, 3, 4 and 5) can range from 0-24 points. Scores are calculated as follows:

$$(\text{Total points for items 2, 3, 4 and 5}) = \underline{\text{Physical activity scale score.}}$$

Additional questions

Items 1, 8, 13, 14 and 16 are not part of either scale and their scores are not factored into the patient's total scores.

Items not factored into the composite score, such as the additional questions and the physical activity scale, still can provide information about patients' beliefs about the cause of their pain, their physical limitations from pain, their expectations of treatment and, specifically, if they have a claim for compensation.

Using Fear-Avoidance Beliefs as a Prognostic Tool

FABQ scores, when combined with other patient characteristics, may be useful for predicting recovery.

Some combination of high baseline pain intensity, high FABQ scores (Turner et al. 2008), radiculopathy (Dionne et al. 2007, Turner et al. 2008) or high levels of somatization combine to predict a high likelihood of therapeutic failure (Chou and Shekelle 2010, Thomas 1999). Inversely, some combination of low baseline pain intensity, low FABQ scores, absence of radiculopathy or low levels of somatization combine to predict a high likelihood of recovery.

Fear-avoidance beliefs about back trouble are important modifiable risk factors for chronic and disabling back pain. Both individual (Von Korff 2005) and community (Buchbinder and Jolley 2005) interventions aimed at changing fear-avoidance beliefs in people with back pain have been effective.

A number of investigations have shown that scores on the FABQ are associated with severity of back pain and are predictive for chronicity or delayed recovery (Murphy 2008, Woby 2004). Although the majority of investigations of fear avoidance have evaluated the relationship between fear and lower back pain, some studies have focused on fear-avoidance beliefs in people with other musculoskeletal conditions. According to a 2009 retrospective study (Hart 2009) including 17,804 subjects:

Evidence supported the possible existence of fear-avoidance beliefs or pain-related fear in people who have other impairments or who may not have pain, perhaps because of learned behavior after previous painful episodes or misconceptions about pain. Pain-related fear scales, including the FABQ scales, have been used to assess the levels of fear in people with acute and chronic low back pain syndromes, cervical spine pain syndromes, cervical spine and shoulder pain syndromes, hip impairments, knee impairments, chronic headache, fibromyalgia, and chronic fatigue syndrome.

The Fear-Avoidance Beliefs Questionnaire (FABQ) (Waddell 1993) is one of several instruments designed to measure this tendency.

The work scale (FABQ-W) appears to be the most useful portion of the questionnaire. Several studies have demonstrated that high scores on FABQ-W predict a poorer prognosis in working populations. The FABQ-W has been found to be a better predictor of disability than the physical activity scale, apparently even in patients without work-related LBP (George 2008). In a 2008 secondary analysis (George 2008) of people *without* work-related low back pain, the FABQ-W was a better predictor of 6-month outcomes. A number of clinical studies (Flynn 2002, Fritz and George 2002, Hicks 2005, Turner 2006, Waddell 1993) have come to the comparable conclusion that the FABQ work scale is a better predictor of future disability.

NOTE: The higher the score, the greater the probability that the fear-avoidance behavior may affect the clinical outcome. There is a variety of opinions as to what would be the best cut point.

The following table compares the positive and negative likelihood ratios for scores from the FABQ work scale.

FABQ-W Score	Effect on Outcome	Comments
> 34	Increased risk of not returning to work (+LR = 3.33, 95% CI 1.65- 6.77)	
< 29	Decreased risk for not returning to work (LR = 0.08, 95% CI 0.01- 0.54)	The use of a double negative here coupled with a low LR can be confusing. Not returning to work is a negative outcome and the low LR reflects that the odds of this negative outcome occurring are significantly lower. Also note that there is an equivocal range where if the score is between 20 and 29, one study reflects an improved probability of returning to work but another study indicates an increased risk of persistent problems at 6 months.
> 20	Increased risk of reporting no improvement in 6-month ODI scores or persistent problems. (+LR = 2.3-5.1)	George and Fritz (2001, 2008) performed a secondary analysis of 160 LBP patients. Patients with FABQ-W scores greater than 20 had an increase in odds 2 to 5 times to be more likely to experience persistent problems at 6 months (compared to patients with scores below 20).
< 20	Decreased risk of persistent problems. (-LR = 0.31)	George and Fritz (2001, 2008) performed a secondary analysis of 160 LBP patients. Patients with FABQ-W scores less than 5 increased their odds 3 times that they would improve at 6 months.

There is no clear consensus about when or whether to separate the different scales of the questionnaire in a clinical setting. It is reasonable to administer the FABQ and separate out the work scale to calculate a specific fear-avoidance score as a prognostic indicator and to use the physical activity scale and other items to offer additional insight into the patient. One advantage of using the whole FABQ is that single items can be used as a starting point to discuss patients' attitudes about their problem.

Validity¹, Reliability², and Responsiveness³ of the FABQ

The FABQ has good internal consistency, reliability and test-retest reliability (Waddell et al. 1993). Test-retest validation studies of the FABQ have demonstrated high internal consistency results for both the work scale ($\alpha = 0.88$) and for the physical activity scale ($\alpha = 0.77$).

¹ **Test Validity** is crucial for establishing the clinical usefulness of an assessment instrument. Validity refers to how accurately an assessment procedure measures the clinical state of a patient as compared to a gold standard. In the absence of a gold standard, construct validity serves as a suitable surrogate. Construct validity is established through comparison with other measures that are theoretically related to the clinical condition being evaluated. Functional status questionnaires are tested for construct validity by comparison with other instruments and with other clinical features that would be expected to correlate with physical function.

² **Reliability** refers to the repeatability of a test and it indicates precision and consistency. A reliable test is repeatable, precise and consistent.

³ **Responsiveness** refers to a test's ability to measure change over time. Responsiveness is defined as the ability of an instrument to detect clinically important changes. The responsiveness of an instrument describes its ability to detect improvement or nonimprovement as compared to an external criterion.

Use of the FABQ to predict chronic, disabling back pain

Since the publication of the original FABQ paper in 1993, numerous investigations of the utility of the FABQ have been conducted. The evidence for the ability of FABQ scores to predict risk for chronicity and disability is mixed.

Two serial, systematic reviews (Pincus 2002 and 2006) of prospective studies of LBP patient cohorts did not find evidence that fear avoidance is a predictor for poor outcomes. The majority of the studies published between 1999 and 2006 did not show a strong relationship between measures of fear at baseline and various short and long-term outcomes. In their analysis, the authors point to both a lack of statistical power for most of the studies and the possible shared variance with other factors such as distress, depression and catastrophizing.

This finding stands in contrast to the individual findings from several prospective studies:

- Fear-avoidance beliefs have been shown to be associated with work absence and with work related disability (Asmundson 1997, Crombez 1999, George 2001).
- Grotle et al. (2005) found that high (21-42) FABQ-W scores had a 1.2 LR for non-recovery vs. low (0-20) scores which had a 0.92 LR.
- Likewise, Dionne (2007) found that high FABQ-W scores had a 2.8 LR for not returning to work at 1 year compared to a 0.38 LR for low scores.
- In a trial with 42 subjects with LBP, Al-Obaidi (2005) concluded that high initial scores on the FABQ-PA had a 3.78 LR for predicting a lack of clinically meaningful outcome after a 10-week exercise intervention.
- Fear-avoidance belief was one of five elements used by Flynn et al. (2002) to formulate a clinical prediction rule for classifying patients with low back pain who are likely to improve with spinal manipulation. They found that any four out of five variables (symptom duration, fear-avoidance beliefs, lumbar hypomobility, hip internal rotation, and symptoms proximal to the knee)^{*} had a positive likelihood ratio of 24. This clinical prediction rule has not been subjected to further rigorous testing and consequently has not been validated.

A more recent systematic review (Chou and Shekelle 2010) considered prospective studies for the development of chronic, disabling LBP in subjects with less than 8 weeks of LBP. They found that patients with a mixture of maladaptive coping behaviors (e.g., elevated fear-avoidance beliefs, catastrophizing) were more likely to have worse outcomes at 3 to 6 months (*LR 2.2, range 1.5-4.9*) and at 1 year (*LR 2.5, range 2.2-2.8*). On the other hand, low levels of fear avoidance were among the more useful predictors of recovery at 1 year with a small increase in the odds of a successful outcome (*negative LR of 0.39, range 0.38-0.40*) (Chou 2010).

^{*} More specifically, these variables were the following: duration of symptoms < 16 days, at least one hip with > 35° of internal rotation, hypomobility with lumbar spring testing, FABQ work subscale score < 19, and no symptoms distal to the knee.

Clinical Application

The presence of fear-avoidance behavior, along with other similar yellow flags, may be predictive of poor therapeutic outcomes. In addition, patients with elevated fear-avoidance beliefs may benefit from an approach that incorporates the following principles:

- **Address** patient fears directly.
- **Assure** patients with simple mechanical low back pain that there is no sign of serious disease or suggestion of permanent damage.
- **Inform** patients that the spine is strong and pain does not necessarily mean that their back has any serious damage.
- **Instruct** patients that while a number of treatments can help to control the pain, lasting relief depends on their effort.
- **Advise** patients that normal exercise and activity will have a positive rather than a negative effect.
- **Focus** treatment on activity or exercise to restore normal function and fitness.
- **Provide** supervised exercises or slow graded exposure to the activity that the patient fears.
- **Encourage** positive attitudes and coping mechanisms.

The Back Book (Royal College 2002) is an educational pamphlet that was designed to reduce avoidance behaviors by fostering positive beliefs about back pain. It's been used to good effect to alter people's beliefs about back pain in both clinical (Burton 1999) and public health settings (Buchbinder and Jolley 2005). Examples of the statements used in *The Back Book* include:

- Usually back pain has a simple cause and often gets better quickly of its own accord.
- Keep up daily activities. They will not do damage. Just avoid really strenuous activities.
- Do not just rely on medication--remain positive and take control of the pain.

Note: These important patient messages should be delivered clearly, explicitly and *often*.

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Primary author: Owen T. Lynch, DC

Secondary authors

- Ronald LeFebvre, DC
- Steven Rash, DC

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|-------------------------------------|-----------------------|
| ▫ J. Michael Burke, DC, DABCO | ▫ Ryan Ondick, DC |
| ▫ Daniel DeLapp, DC, DABCO, LAc, ND | ▫ Jeremiah Patton, DC |
| ▫ Lorraine Ginter, DC | ▫ Anita Roberts, DC |
| ▫ Ronald LeFebvre, DC | ▫ Devin Williams, DC |
| ▫ Owen T. Lynch, DC | ▫ Laurel Yancey, DC |

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