The Presurgical Psychological Evaluation For Spinal Cord Stimulation

Daniel Bruns, PsyD  FAPA

Disclosures

• Coauthor of a published psychological test (BHI 2) used for the assessment of patients with pain and injury

• In the past, Dr. Bruns has worked as a consultant for SCS device manufacturers regarding spinal cord stimulators
Presentation Overview

• What is spinal cord stimulation (SCS)?
• SCS and guidelines
• Test selection for SCS
• Conducting the SCS evaluation
• Using the Medical Intervention Risk Report for SCS psych evals

It is more important to know what sort of person has a disease, than to know what sort of disease a person has.

Hippocrates, 400 BCE
1. SCS is an electrical treatment for pain, and an alternative to opioids.
2. SCS is most commonly used for non-spinal pain (i.e., arms, legs, gut).
Spinal Cord Stimulation

- SCS electrodes electrically interrupt pain signals and replaces them with a tingling sensation ("paresthesia")

SCS Involves a Pulse Generator
The SCS Pulse Generator Operates Electrodes That Stimulate The Nervous System

- 1 mm percutaneous lead, 8 electrodes
- 2 mm percutaneous lead, 8 electrodes
- Paddle lead, 20 electrodes

More Info on SCS

- More SCS info including
  - Bruns & Disorbio 2009 review article on assessing risk factors for SCS
  - Bruns & Disorbio 2017 article on SCS
  - Bruns & Disorbio 2017 primer on electrical treatments for pain and the biopsychosocial model (50+ pages)
  - Bruns 2016 NASS CME video for spinal surgeons on presurgical psych evals
- www.healthpsych.com/scs.html
- Go there later to avoid disconnecting from webinar!
### SCS Clinical Flowchart

- **Conservative Medical Care**
  - Medication, physical therapy, pain coping

- **Invasive Procedures**
  - Spinal surgery, injections or other invasive procedures

- **Spinal Cord Stimulation**
  - Medical assessment for SCS
  - **Presurgical psychological evaluation**
  - SCS trial
  - SCS implantation
  - SCS programming

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### A Multitude of Payers, Organizations and Guidelines Now Require Psychological Evaluations Prior to SCS

- Medicare/Medicaid
- Private Payers (Blue Cross, Cigna, United Healthcare, etc)
- American Pain Society
- International Society for Advancement of Spine Surgery
- MD Guidelines
- American College of Physicians
- North American Spine Society
- Official Disability Guidelines
- State and Federal Guidelines
How can a psychological evaluation predict SCS treatment outcome?

How does that work?

“SCS is a surgical treatment whose success is based on its ability to change the patient’s verbal behavior.”
(Bruns and Disorbio, 2017)

The goal of SCS is to reduce reports of pain, and produce patient satisfaction. Can we predict that?
What Predicts Surgical Outcome?

Psychological tests can outperform medical tests at predicting poor response to back surgery

(Carragee, et al, 2005; 2004)

Test Selection For SCS Evaluations
Test Selection for SCS

Psychiatric Tests

Pain/Health Psych Tests

Overlap

<table>
<thead>
<tr>
<th>Central Construct</th>
<th>Psychiatric Tests (assumption of psych dx)</th>
<th>BHI 2 (assumption of medical dx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>DSM disorder</td>
<td>Biopsychosocial disorder</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Mood disorder</td>
<td>“Medical reactive depression”</td>
</tr>
<tr>
<td>Chemical Dependency</td>
<td>Alcoholism</td>
<td>“Death Fears”</td>
</tr>
<tr>
<td>Physical symptoms</td>
<td>Suggest somatization?</td>
<td>Dependence on Prescribed Medication</td>
</tr>
<tr>
<td>Social</td>
<td>Conflict with spouse</td>
<td>Fit with medical disease/injury Dx?</td>
</tr>
</tbody>
</table>

Weakness

- No personality inventory includes pain ratings
- Doesn’t assess mood swings, OCD, etc.

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BHI 2 Has 27 Measures For Pain Disorders

<table>
<thead>
<tr>
<th>Pain Assessment Concerns</th>
<th>BHI 2 Pain Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 Pain Rating (13 pain ratings)</td>
<td>Pain in 10 body areas, highest, lowest, and overall pain</td>
</tr>
<tr>
<td>Pain variability</td>
<td>Pain range</td>
</tr>
<tr>
<td>Pain tolerance</td>
<td>Pain tolerance index</td>
</tr>
<tr>
<td>Pain cognitions (e.g. catastrophizing)</td>
<td>Catastrophizing</td>
</tr>
<tr>
<td></td>
<td>Dysfunctional Pain Cognitions</td>
</tr>
<tr>
<td></td>
<td>Dysfunctional Somatic Cognitions</td>
</tr>
<tr>
<td>Widespread pain?</td>
<td>Pain Complaints</td>
</tr>
<tr>
<td>Anatomic pain distribution (5 measures)</td>
<td>5 Pain Diagnosis Percent Fit Scores</td>
</tr>
<tr>
<td>“Pain sensitivity”</td>
<td>Somatic Complaints</td>
</tr>
<tr>
<td>Fear of painful exercise</td>
<td>Kinesiophobia</td>
</tr>
<tr>
<td>Perception of disability</td>
<td>Functional Complaints</td>
</tr>
</tbody>
</table>

Selecting tests for SCS

- **What are the norms?**
  - Normal
  - Psychiatric
  - Medical patient
  - Pain patient

- **What are the items?**
  - BHI 2 has no items about mood swings
  - No existing psychiatric tests includes pain ratings
The Psychological Fallacy

Psychiatric inventories generally score all physical symptoms as signs of psychiatric syndromes.

Interpreting Symptoms in Pain Evals

- Side effects of amitriptyline:
  - Fatigue
  - Weight gain
  - Loss of libido
  - Sleeping 12 hours

- In chronic illness, one third of psychiatric inventory variance may be due to disease severity (Nalibof, 1982)

- To address this, the BHI 2 assesses physical and psychological symptoms of depression on separate scales.
Interpreting Symptoms in Pain Evals

- **Somatization?**
  - Difficulty swallowing
    - Laryngeal cancer?
    - Complication of cervical fusion?

Possible Medical Explanations
- Laryngeal cancer
- Status post cervical fusion

Possible Psychological Explanations
- Somatization
- Conversion

To address this, the BHI 2 report lists both medical and psychological explanations.

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**Rule of thumb**

Select your tests based on the risk factors you are assessing, and how much time and resources you can devote.
Conducting Presurgical Psych Eval For SCS

What Does Research Suggest About Presurgical Psych Evals?

• Two-tier presurgical psychological assessment suggested by the literature
  • Bruns and Disorbio, 2009
  • Adopted by Colorado Guidelines 2012, 2017; MDGuidelines 2017

• **Primary risks**
  – Psychosocial **Red Flags**

• **Secondary risks**
  – Psychosocial **Yellow Flags**
Primary Psychosocial Risk Factors For Surgery

• “Red Flag” Risk Factors:
  – Suicidal, homicidal, psychotic, acute intoxication, etc.
  – Severe psychological instability
  – Stop and reassess before proceeding with elective surgery!

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Research on Primary Risk Factor Assessment

• Our group has conducted 12 research studies of patients with primary risk factors, using the BHI 2 to predict:
  – Plan for Suicide (N=80; Fishbain & Bruns, 2009)
  – Homicidal ideation (N=49; Bruns & Disorbio, 2000)
  – Suicide/homicide ideation (N=62; Fishbain & Bruns, 2011)
  – Thoughts of killing MD (N=71; Bruns & Fishbain, 2010)
  – Thoughts of suing MD (N=60; Fishbain & Bruns 2007)

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Primary Psychosocial Risks

Let’s stop and reassess. Why are you so angry?

I’m so furious I want to sue somebody.

Secondary Psychosocial Risk Factors For Surgery

• “Yellow Flag” risk factors
  
  – Depression, anxiety, pain coping, poor physical functioning, somatization, job dissatisfaction, etc.
  
  – Much more common!
    
    • Most research about surgical outcome is about this
  
  – More secondary risks => increase the odds that the patient will be unhappy with the outcome
Research on Secondary Risk Factor Assessment

- **Systematic reviews**
  - Den Boer (2006)
  - Celestin (2009)

- **Review of empirical and consensus risk factors for poor surgical outcome**
  - Bruns and Disorbio (2009)
  - Then used 1254 patients to test these risk factors ability to predict disability (unemployment) and with dissatisfaction with care

What is the Effect of Secondary Psychosocial Risk Factors?

- The presence of 4 or more secondary psychosocial risk factors can:
  - Increase the risk of the presence of a psychological disorder by a factor of 14
  - Double the risk of failure to return to work after medical treatment (Gatchel, 2006)

- These high risk patients can be treated successfully with interdisciplinary care (Dersh, 2007)
So you have been having a lot of back pain?

Can you increase my oxycodone dose? I REALLY like it!!!

Predicting Heart Disease

- Tobacco use
- Blood lipids
- Diabetes
- Exercise
- Obesity
- Blood pressure
- Family History
- Aspirin use, etc.
All of these variables can be entered into a regression equation to predict heart disease

The same thing could be done for spinal cord stimulation
BHI 2 MIR was developed that way

MEDICAL INTERVENTION RISK REPORT

<table>
<thead>
<tr>
<th>Patient Profile</th>
<th>MIR Scores</th>
<th>Raw</th>
<th>T</th>
<th>T-Score Profile</th>
<th>Rating</th>
<th>%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHI 2 Validity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Self-Disclosure</td>
<td>79</td>
<td>43</td>
<td></td>
<td></td>
<td>Average</td>
<td>24%</td>
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<td>Risk Factors</td>
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<td></td>
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<tr>
<td>Primary</td>
<td>1</td>
<td>61</td>
<td></td>
<td></td>
<td>High</td>
<td>86%</td>
</tr>
<tr>
<td>Presurgical</td>
<td>30</td>
<td>54</td>
<td></td>
<td></td>
<td>Average</td>
<td>69%</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>24</td>
<td>69</td>
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<td>Very High</td>
<td>94%</td>
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<tr>
<td>Addiction History</td>
<td>29</td>
<td>61</td>
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<td>High</td>
<td>86%</td>
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<tr>
<td>Addiction Potential</td>
<td>19</td>
<td>54</td>
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<td>Average</td>
<td>70%</td>
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<tr>
<td>Nonadaptive Coping Styles</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Catastrophizing</td>
<td>14</td>
<td>50</td>
<td></td>
<td></td>
<td>Average</td>
<td>53%</td>
</tr>
<tr>
<td>Kinesiophobia</td>
<td>6</td>
<td>41</td>
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<td></td>
<td>Low Average</td>
<td>21%</td>
</tr>
</tbody>
</table>

The BHI™ 2
Battery for Health Improvement 2

BHI™ 2 © 2003 by NCS Pearson
Battery for Health Improvement 2

- **BHI 2**
  - For comprehensive biopsychosocial assessments
  - 217 items
  - ~35 minutes
- Designed from its inception to assess chronic pain secondary to injury or illness
  - Bruns & Disorbio, 2003

10 BHI-2 Norm Groups

- **Subjects**
  - 1452 subjects from 106 sites in 36 US states
- **Norm Groups**
  - Typical patient in treatment for pain/injury
  - Typical community member
- **Pain Subgroup Norms**
  - Chronic pain
  - TBI/headache pain
  - Neck pain
  - Arm/hand pain
  - Back pain
  - Leg/foot pain
  - Fake health good
  - Fake health bad
BHI 2 is like two separate tests

• **The Original BHI 2** (Bruns & Disorbio, 2003)
  - 18 scales
  - 40 subscales
  - 27 pain-related measures

• **BHI 2 MIR** (Bruns & Disorbio, 2016)
  - Six additional scales related to Tx risk
  - More understandable to MDs
  - Like a second test that uses the same items
### BHI 2 Standard Scales

#### Battery for Health Improvement 2

<table>
<thead>
<tr>
<th>Scales</th>
<th>Raw Score</th>
<th>T-Score</th>
<th>Percentile</th>
<th>T-Score Profile</th>
<th>Rating</th>
<th>Percentile</th>
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<td>Validity</td>
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<td></td>
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<td>Self-Disclosure</td>
<td>140</td>
<td>60</td>
<td>63</td>
<td>90</td>
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<td>85%</td>
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<td>Depression</td>
<td>30</td>
<td>53</td>
<td>37</td>
<td>60</td>
<td>Low</td>
<td>14%</td>
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<td>Physical Symptom Scales</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Somatic Complaints</td>
<td>33</td>
<td>61</td>
<td>71</td>
<td>High</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>Pain Complaints</td>
<td>35</td>
<td>54</td>
<td>61</td>
<td>Mod. High</td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td>Functional Complaints</td>
<td>18</td>
<td>59</td>
<td>72</td>
<td>Mod. High</td>
<td>81%</td>
<td></td>
</tr>
<tr>
<td>Muscular Bracing</td>
<td>10</td>
<td>45</td>
<td>51</td>
<td>Average</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Affective Scales</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Depression</td>
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<td>59</td>
<td>65</td>
<td>Mod. High</td>
<td>83%</td>
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<td>Anxiety</td>
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<td>85%</td>
<td></td>
</tr>
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<td>Hostility</td>
<td>21</td>
<td>56</td>
<td>57</td>
<td>Average</td>
<td>78%</td>
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<tr>
<td>Character Scales</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Borderline</td>
<td>16</td>
<td>54</td>
<td>57</td>
<td>Average</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>Symptom Dependency</td>
<td>17</td>
<td>71</td>
<td>73</td>
<td>Very High</td>
<td>98%</td>
<td></td>
</tr>
<tr>
<td>Chronic Maladjustment</td>
<td>14</td>
<td>57</td>
<td>58</td>
<td>Average</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>9</td>
<td>61</td>
<td>65</td>
<td>High</td>
<td>86%</td>
<td></td>
</tr>
<tr>
<td>Perseverance</td>
<td>29</td>
<td>48</td>
<td>46</td>
<td>Average</td>
<td>39%</td>
<td></td>
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<tr>
<td>Psychosocial Scales</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Dysfunction</td>
<td>11</td>
<td>52</td>
<td>54</td>
<td>Average</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Survivor of Violence</td>
<td>9</td>
<td>54</td>
<td>58</td>
<td>Average</td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td>Doctor Dissatisfaction</td>
<td>9</td>
<td>50</td>
<td>55</td>
<td>Average</td>
<td>49%</td>
<td></td>
</tr>
<tr>
<td>Job Dissatisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Rated*</td>
<td>0%</td>
</tr>
</tbody>
</table>

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### BHI 2 Report Components

#### PATIENT SUMMARY

The following are the results of your BHI 2 test. These results were generated by a computer analysis, which compared your responses to the responses of national samples of rehabilitation/chronic pain patients and non-patients in the community. This analysis indicates that you reported the following significant information about yourself. It is important to remember that although the computer generated hypotheses about your condition, only your doctor can form a final opinion about what your results mean. If you think that any of the following statements are incorrect, you should discuss them with your medical caregivers. Additionally, if the following interpretation seems to miss important points about you that your doctor or other caregivers should know, be sure to share that information with them.

- Your report indicates that you feel burdened by problems in your life. It also indicates that you want to make it clear to others how serious your problems are. People who respond in this manner are often hoping that someone will listen to them and help them.
- You reported a high level of physical illness symptoms. There are a number of possible medical explanations for these symptoms, which should be discussed with your physician. The symptoms that you reported can also be produced by stress. Stress-related symptoms are very real and are no less important than other types of symptoms, and there are effective treatments for them. Lifestyle changes or treatments that lower your physical and emotional stress may be helpful for you.
- You reported a high level of anxious thoughts and feelings, indicating that you are very worried about your health or other areas of your life. There are many effective treatments for anxiety including medication and talking to a professional about your worries and fears. It is important to address your anxiety because it could complicate your recovery.
- You reported that you feel an increased need for the care and support of others. Although recovery often involves the support of family, friends, and the medical community, you are also an important part of the solution. There are some things that only you can do for yourself. Learning to work with your caregivers will be an important part of your recovery.
The BHI™ 2
Medical Intervention Risk (MIR) Report

What is the MIR?

- The BHI 2 MIR report identifies risk factors thought to negatively impact a patient’s response to medical treatments, and makes suggestions for behavioral alternatives

- Bruns & Disorbio, 2016
## MIR Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Disclosure</td>
<td>Over or under reporting of info</td>
</tr>
<tr>
<td>Primary Risk</td>
<td>Danger to self/others, Severe psychopathology</td>
</tr>
<tr>
<td>Presurgical Risk</td>
<td>Risk of poor outcome from surgery</td>
</tr>
<tr>
<td>Rehabilitation Risk</td>
<td>Broader set of predictors of poor Tx outcome</td>
</tr>
<tr>
<td>Addiction History</td>
<td>Antisocial pattern of behavior and addiction</td>
</tr>
<tr>
<td>Addiction Potential</td>
<td>Distressed patient with poor coping loves Rx</td>
</tr>
<tr>
<td>Catastrophizing</td>
<td>Exaggerating the negative aspects of life</td>
</tr>
<tr>
<td>Kinesiophobia</td>
<td>Fear that exercise/activity will cause injury</td>
</tr>
</tbody>
</table>

**Psychological Treatments**
- Education for the biopsychosocial nature of pain and stress symptoms and/or medication-based stress reduction
- Relaxation training or biofeedback
- Pain management training
- Cognitive-behavioral therapy for self-defeating cognitions related to health
- Viability
- Treatment for a high level of affective distress indicated for depression, anxiety
- Psychotherapy to determine if elevated level of death fears are rational or medical phobias
- Treatment for acceptance of chronic symptoms should be considered
- Explore reasons for medical frustrations

**Patient Strengths**
- No indication of report bias
- Below average level of problems with functioning
- Stable life history

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The MIR Report is a computerized analysis of risk factors for poor response to medical interventions, that was derived from the BHI 2 questionnaire.

**NOTE:** This and previous pages of this report contain trade secrets and are not to be released in response to requests under HIPAA (or any other data disclosure law that exempts trade secret information from release). Further, release in response to litigation discovery demands should be made only in accordance with your profession’s ethical guidelines and under an appropriate protective order.
Case 1: Low Risk Patient

- 59 yo male
- Loved outdoors, hiking
- Lumbar injury when skiing
- Chronic sciatic pain radiating into his leg
- SCS?
### BHI 2 MIR Profile: Low Risk

- **Profile:** Low Risk
- **Percentile:** 2%
- **Rating:** CBC (Normal = 50)

#### MIR Scores
- **BHI 2 Validity**
  - Self-Disclosure: 96, T = 46
- **Risk Factors**
  - Primary: 0, T = 50
  - Presurgical: 27, T = 51
  - Rehabilitation: 2, T = 41
  - Addiction History: 12, T = 43
  - Addiction Potential: 16, T = 49
- **Nonadaptive Coping Styles**
  - Catastrophizing: 14, T = 50
  - Kinesiophobia: 10, T = 52

#### T-Score Profile
- **Scale:** Std T Score
- **Average Range Like CBC Normal = 50**
- **Rating:** Average
- **Percentile:** 42%

#### MIR Recommendations

**RECOMMENDED RISK REDUCTION INTERVENTIONS AND PATIENT STRENGTHS**

- Elevated risk scores on the MIR are based to a significant extent on modifiable behavioral variables, which can often be decreased with effective psychological treatments. This patient's MIR report results suggest the following actions and/or treatment plans should be considered, while also taking into account his strengths.

#### Recommended Actions
- No actions indicated.

#### Psychological Treatments
- Pain management training

#### Patient Strengths
- No indication of report bias
- No indications of severe psychological difficulties
- Below average level of problems with functioning
- Below average level of emotional distress
- Positive relationship with: family, employer

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Case 2: Phantom pain

- 44 yo male
- Traumatic amputation of hand in work-related accident
- Phantom pain: Felt like missing fingers were bent back to the breaking point.
- Taking high doses of opioids
- SCS?
Case 2: MIR Profile

Not an “addict” profile
Likes opioids too much
Surgical risk in the average range
Catastrophizes

<table>
<thead>
<tr>
<th>MIR Scores</th>
<th>Raw T</th>
<th>T-Score Profile</th>
<th>QOL: High Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHI 2 Validity</td>
<td>54 36</td>
<td></td>
<td>Low 9%</td>
</tr>
<tr>
<td>Self-Disclosure</td>
<td>0 50</td>
<td></td>
<td>Average 50%</td>
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<tr>
<td>Primary</td>
<td>0 50</td>
<td></td>
<td>High Average 81%</td>
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<tr>
<td>Prosurgical</td>
<td>35 58</td>
<td></td>
<td></td>
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<tr>
<td>Rehabilitation</td>
<td>15 57</td>
<td></td>
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</tr>
<tr>
<td>Addiction History</td>
<td>5 36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addiction Potential</td>
<td>26 64</td>
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<td>High 91%</td>
</tr>
<tr>
<td>Nonaddictive Coping Styles</td>
<td>21 63</td>
<td></td>
<td>High 91%</td>
</tr>
<tr>
<td>Catastrophizing</td>
<td>11 55</td>
<td></td>
<td>High Average 74%</td>
</tr>
</tbody>
</table>

Rx: SCS plus multidisciplinary care

- Is an OK candidate for SCS
  - Most patient have some risk factors
  - Likely to feel SCS helped
  - Likely to still want opioids
  - Likely to still have suboptimal coping

- SCS does not change how you think, and does not prevent opioid withdrawal
  - Psych treatment for catastrophizing and opioid dependence may be able to lower the risk factors further and improve outcome
Case 3: Gunshot Wound

- 37 yo Female
- Gunshot wound to the right upper arm in drive by shooting targeting somebody else
- Second time she had been shot in high crime neighborhood!
- CRPS (chronic regional pain syndrome)
- SCS?

### Five Elevated “Yellow Flag” Scores

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>MIR Scores</th>
<th>T-Score Profile</th>
<th>Rating</th>
<th>%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHI 2 Validity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Disclosure</td>
<td>178</td>
<td>71</td>
<td>Very High</td>
<td>98%</td>
</tr>
<tr>
<td>Risk Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>4</td>
<td>67</td>
<td>Very High</td>
<td>95%</td>
</tr>
<tr>
<td>Presurgical</td>
<td>51</td>
<td>73</td>
<td>Ext. High</td>
<td>98%</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>24</td>
<td>69</td>
<td>Very High</td>
<td>94%</td>
</tr>
<tr>
<td>Addiction History</td>
<td>23</td>
<td>55</td>
<td>High Average</td>
<td>71%</td>
</tr>
<tr>
<td>Addiction Potential</td>
<td>36</td>
<td>79</td>
<td>Ext. High</td>
<td>99%</td>
</tr>
<tr>
<td>Nonadaptive Coping Styles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catastrophizing</td>
<td>28</td>
<td>76</td>
<td>Ext. High</td>
<td>99%</td>
</tr>
<tr>
<td>Kinesiophobia</td>
<td>20</td>
<td>78</td>
<td>Ext. High</td>
<td>&gt;99%</td>
</tr>
</tbody>
</table>

Primary Risk Score Is Elevated
This Patient Has
4 Primary Risk Factors

- Primary risk factors on this profile were extreme scores (> 99th %):
  - Extreme depression
  - Extreme anxiety
    - Measures of panic, worries, death fears all highly elevated
  - Extreme problems with functioning
  - Signs of extreme stress reactions
Patient's pain reports

<table>
<thead>
<tr>
<th>Pain Complaints Items</th>
<th>Patient</th>
<th>Median*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head (headache pain)</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Jaw or face</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Neck or shoulders</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Arms or hands</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Chest</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Abdomen or stomach</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middle back</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Lower back</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Genital area</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Legs or feet</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Overall highest level of pain in the past month</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Overall lowest level of pain in the past month</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Overall pain at time of testing</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Maximum Tolerable Pain</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

*Based on a sample of 200 patients with upper extremity and pelvic pain.

How does the patient’s pain distribution compare to the typical patient with that diagnosis?
What is the percent match* between the distribution of pain symptoms and common diagnostic categories?

* This analysis is generated by 10 cross-validated discriminant functions
How much of this is CRPS?

• CRPS + headache pain pattern with extreme anxiety, stress symptoms and muscular bracing.

• Being patient-centered. What is the best thing to do? SCS will not make her safe

• Had begun living with her boyfriend during medical treatment. Is that a safer place to be?

• Will reassess when her stress is lower

Case 4

• 58 yo female
• Professional with a masters degree
• Staff infection following total knee replacement, chronic leg pain
• Has been talking to an attorney about healthcare, but has not retained one
### MEDICAL INTERVENTION RISK REPORT

#### Patient Profile

<table>
<thead>
<tr>
<th>MIR Scores</th>
<th>Raw T</th>
<th>T-Score Profile</th>
<th>Rating</th>
<th>%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHI 2 Validity</td>
<td>Self-Disclosure 110 52</td>
<td></td>
<td>Average</td>
<td>59%</td>
</tr>
<tr>
<td>Risk Factors</td>
<td>Primary 2 63</td>
<td></td>
<td>High</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>Presurgical 34 57</td>
<td></td>
<td>High Average</td>
<td>77%</td>
</tr>
<tr>
<td></td>
<td>Rehabilitation 14 56</td>
<td></td>
<td>High Average</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>Addiction History 9 40</td>
<td></td>
<td>Low</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Addiction Potential 20 55</td>
<td></td>
<td>High Average</td>
<td>72%</td>
</tr>
<tr>
<td>Nonadaptive Coping Styles</td>
<td>Catastrophizing 16 53</td>
<td></td>
<td>Average</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>Kinesiophobia 9 49</td>
<td></td>
<td>Average</td>
<td>51%</td>
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</tbody>
</table>

### Battery for Health Improvement 2

#### Scales

<table>
<thead>
<tr>
<th>Scales</th>
<th>Raw Score</th>
<th>T Scores</th>
<th>T-Score Profile</th>
<th>Rating</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity Scales</td>
<td></td>
<td></td>
<td>Alpha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Disclosure</td>
<td>110</td>
<td>52</td>
<td>55</td>
<td>Average</td>
<td>50%</td>
</tr>
<tr>
<td>Defensiveness</td>
<td>8</td>
<td>38</td>
<td>31</td>
<td>Low</td>
<td>11%</td>
</tr>
<tr>
<td>Physical Symptom Scales</td>
<td></td>
<td></td>
<td>Alpha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somatic Complaints</td>
<td>25</td>
<td>55</td>
<td>64</td>
<td>Mod. High</td>
<td>75%</td>
</tr>
<tr>
<td>Pain Complaints</td>
<td>45</td>
<td>59</td>
<td>68</td>
<td>Mod. High</td>
<td>81%</td>
</tr>
<tr>
<td>Functional Complaints</td>
<td>21</td>
<td>64</td>
<td>78</td>
<td>High</td>
<td>92%</td>
</tr>
<tr>
<td>Muscular Bracing</td>
<td>10</td>
<td>46</td>
<td>51</td>
<td>Average</td>
<td>33%</td>
</tr>
<tr>
<td>Affective Scales</td>
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<td></td>
<td>Alpha</td>
<td></td>
<td></td>
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<tr>
<td>Depression</td>
<td>23</td>
<td>59</td>
<td>65</td>
<td>Mod. High</td>
<td>82%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>13</td>
<td>47</td>
<td>50</td>
<td>Average</td>
<td>36%</td>
</tr>
<tr>
<td>Hostility</td>
<td>14</td>
<td>47</td>
<td>48</td>
<td>Average</td>
<td>36%</td>
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<tr>
<td>Character Scales</td>
<td></td>
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<td>Alpha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borderline</td>
<td>20</td>
<td>61</td>
<td>63</td>
<td>High</td>
<td>67%</td>
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<tr>
<td>Symptom Dependency</td>
<td>9</td>
<td>50</td>
<td>55</td>
<td>Average</td>
<td>45%</td>
</tr>
<tr>
<td>Chronic Maladjustment</td>
<td>4</td>
<td>35</td>
<td>37</td>
<td>Low</td>
<td>8%</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>2</td>
<td>44</td>
<td>44</td>
<td>Average</td>
<td>34%</td>
</tr>
<tr>
<td>Perseverance</td>
<td>23</td>
<td>40</td>
<td>38</td>
<td>Low</td>
<td>15%</td>
</tr>
<tr>
<td>Psychosocial Scales</td>
<td></td>
<td></td>
<td>Alpha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Dysfunction</td>
<td>13</td>
<td>55</td>
<td>57</td>
<td>Average</td>
<td>74%</td>
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<tr>
<td>Survivor of Violence</td>
<td>0</td>
<td>36</td>
<td>37</td>
<td>Low</td>
<td>4%</td>
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<tr>
<td>Doctor Dissatisfaction</td>
<td>26</td>
<td>88</td>
<td>93</td>
<td>Extreme High</td>
<td>99%</td>
</tr>
<tr>
<td>Job Dissatisfaction</td>
<td>24</td>
<td>62</td>
<td>69</td>
<td>High</td>
<td>90%</td>
</tr>
</tbody>
</table>
Quote from MIR report:

“This patient reported severe conflicts with the medical profession, including reports of dissatisfaction with medical care, a history of emotional instability, and feeling entitled to financial compensation. This patient's profile is also associated with thoughts of nonviolent retribution directed towards physicians.”

What to do?

- This patient may or may not have a valid complaint about one or more physicians, and she is extremely angry with physicians and suicidal.
  - First manage suicide risk
  - High risk at this time that her response to SCS would be problematic
  - Explore alternative low-risk interdisciplinary treatments
• Some MDs only want a yes or no.

• Better: What is the best thing to do for the patient?

Questions?

More info at:
www.healthpsych.com/scs.html