

# Norm-referenced tests provide scientific backing for neuropsychology and medical psychology evaluations

Since 2005, Jeffrey Cory, PhD, has operated a private practice in Bozeman, Montana, that focuses exclusively on assessment and consultation. Trained in both neuropsychology and medical psychology, Cory evaluates a wide range of patients. He receives referrals from neurologists, primary care physicians, and professionals in the general mental health, rehabilitation, and physical medicine arenas.

Cory sees patients aged 6 and older for neuropsychological evaluations and aged 13 and older for psychodiagnostic/personality assessments. He employs two psychometric technicians plus administrative support and looks forward to building a multidisciplinary team in the future.

“This practice is a wonderful combination for someone like me,” says Cory. “I am trained as a scientist practitioner; I enjoy the intellectual stimulation of the science, and I enjoy working with people, helping them understand their situation and the steps they can take to improve their health. When a patient says to me, ‘Wow, no one has ever explained it that way to me before ... I don’t feel like I’m going crazy... I know what to do now to get better’, that is a good feeling.”

This article will focus on Cory’s psychological evaluation of candidates for spine surgery and neuropsychological evaluation of patients with brain injury.

## Getting closer to the truth of the matter

Cory is a strong advocate for the use of standardized, norm-referenced tests in conducting psychological assessments. “We have no crystal ball to tell us the exact truth; we are trying to get as close as we can,” he says. “Standardized tests are relatively more objective than our clinical observations in getting us closer to being right than being wrong. Tests that are norm-referenced enable us to compare the patient to other patients with similar issues. Tests with proven validity scales tell us whether patients are giving their best effort in cognitive testing and are presenting their self-reported symptoms validly, so that we know whether we have a forthright, credible set of data upon which to base our judgment. Such tests are invaluable in helping us delve beyond our own observations to get closer to the truth of the matter. They provide a wealth of information that I couldn’t obtain simply through even a very extensive clinical interview.”

Cory cites the example of a patient who had been treated with a medication to which he had a bad reaction. “He was admitted to the hospital in a delirious state,” says Cory. “Once the patient recovered from the drug reaction, he was referred to a neurologist, who screened his cognitive abilities. After seeing the test results, the neurologist contacted me and said, ‘The patient did pretty well on the cognitive tests, but I still think there may be something going on.’ So I conducted additional testing.”

“The tests I administered showed that the patient was at the fifth percentile on an overall memory battery, and he was below the first percentile on abstract reasoning and problem-solving,” says Cory. “Simply based on how the patient had presented in my office, I would not have predicted that he was as impaired as he was. Based on the test results, we recognized that he needed specific therapies to enhance his thinking abilities as well as more disability time away from his intellectually demanding job.”

## Tests help predict outcomes for spine surgery candidates

Cory conducts evaluations for spine surgery candidates as part of his practice—and he expects that his work in this area will continue to increase.

“Research shows that psychological tests are highly predictive of spine surgery outcomes when the goal is to ameliorate or eliminate chronic pain, more so than x-rays on the wall,” he says. “Surgeons and other medical professionals are recognizing the usefulness of psychological evaluations in telling them how likely a patient is to benefit from a particular surgery, in identifying comorbid issues that need to be addressed along with the medical issues, and in guiding treatment recommendations.”

Cory also notes that payor and state guidelines are changing across the country to recommend or require psychological evaluations for pre-surgical candidates. For example, the workers' compensation system in Montana, Cory's home state, recently adopted empirically supported utilization guidelines recommending psychological evaluation for workers recovering from injury, which often takes the form of chronic low back pain.

"Pre-surgical psychological evaluations are becoming much more common because the science is good, the evaluations answer useful clinical questions, and it saves money in the long run for the healthcare system," says Cory.

### **Overcoming the cowboy-up mentality**

To describe the biggest issue he faces in conducting psychological assessments, Cory refers to a common Montana expression: to cowboy-up. "It means be tough, don't complain, get back on the horse, so to speak," he says. "In this kind of culture, you can be very stigmatized by seeking help for psychological issues. The problem is that even with mild psychological distress, when you keep it all inside, it will find a way to come out—often as the exacerbation of physical symptoms such as fatigue or pain, which is a more acceptable way to talk about distress. Particularly with injured workers, the cowboy-up mentality is strongly embedded in the culture. So when a spine surgeon refers a patient to me, the patient may become defensive, thinking, 'Are you telling me it's all in my head?' I usually tell the patient, 'Some of this may be mental, but that doesn't mean it's not real. The pain is real. The disability is real. And if you want the best outcome from a spine surgery for your pain, we need to treat these psychological issues as well as the physical ones.'"

Cory explains to his patients that his assessment is simply one component of the pre-surgical preparation, much like ordering a blood test. "When I talk to patients about looking at factors like depression and stress, they nod their heads up and down like crazy. They will say, 'Yes, I have been feeling a lot of this or that'—and it opens the door for me to talk to them about the importance of treating these issues."

Cory points out that his pre-surgical evaluations do not result in Yes/No recommendations. He uses a decision-making algorithm developed by Andrew Block, PhD,\* that includes five categories of prognosis for successful consideration of elective spine surgery to treat chronic pain, from "Good" to "Poor". In many cases, the patient's rating does not fall at either extreme but somewhere in the middle. For these patients, Cory will recommend steps that can be taken to better prepare them for the surgery and/or post-surgical steps to help them recover more effectively.

### **Protocol for pre-surgical evaluations**

Cory's pre-surgical evaluations begin with a focused interview that usually takes an hour or an hour and a half. He administers two standardized tests: the BHI™ 2 (Battery for Health Improvement 2), which helps quickly assess biopsychosocial factors that can affect medical treatment; and the MMPI-2-RF® (Minnesota Multiphasic Personality Inventory-2-Restructured Form™). The patients take these tests using Q Local™ software, which Cory finds offers greater efficiency and accuracy than hand-scoring.

He also uses one or more pain coping questionnaires and a pain drawing. After reviewing his notes and all test results, Cory writes a one-page summary for the surgeon. "They want my recommendations as soon as possible and they don't want to read a long report," he says. He then writes a full report to document the full scope of the evaluation.

### **Using MMPI-2-RF and BHI 2 to evaluate spine surgery candidates**

Cory uses the MMPI-2-RF and BHI 2 as complementary tools for his pre-surgical assessments. He prefers the MMPI-2-RF to the MMPI®-2 for these evaluations because the former is composed of only 338 items, taking less than half the time to administer. He emphasizes that it's important for professionals to receive training so that they have the level of expertise needed to interpret these tests. "Such training is overwhelmingly most common to licensed doctoral-level psychologists," he says.

"The MMPI-2-RF is grounded on really solid research, the foundation of which is increasing very rapidly, and this test provides a number of validity indexes that are especially useful to me," says Cory. "The Fs Scale (Infrequent-Somatic Responses) shows me if the patient is overreporting, exaggerating, or possibly even feigning somatic symptoms. The K-r Scale (Adjustment Validity) gives me information on the patient's ego strength. A patient with a very low score on this scale typically has a default modality of 'I can't' and is not optimally

able to be an active participant in dealing with chronic pain. Conversely, patients who score high on the L-r Scale (Uncommon Virtues) are often minimizing symptoms; patients who are eager to have spine surgery may want to present themselves in the most favorable light. These and other validity scales on the MMPI-2-RF are extremely valuable in telling us whether the patient is giving us credible information on the test—and they may point to psychological issues for which we can recommend treatment.”

Cory also likes the fact that the MMPI-2-RF provides a variety of normative comparison groups, including ones for male and female spine surgery candidates. “When you can compare apples to apples, you can know with much greater probability what the patient is truly experiencing,” he says.

The BHI 2 test, which Cory has been using since he started his practice, provides additional information that supplements his findings from the MMPI-2-RF. “The BHI 2 is normed on both a community sample and a sample of medical patients, enabling me to make an appropriate comparison,” he notes. “It provides excellent scales on pain, somatic complaints, and functional complaints, including scales to assess pain in a number of different body areas. One of the risk factors for suboptimal outcome from spine surgery to treat chronic pain is whether the patient is endorsing pain at very high levels or in multiple body areas.”

Cory mentions several other useful scales on the BHI 2. “The Survivor of Violence Scale is particularly relevant because it helps us determine whether the patient has suffered child abuse,” he says. “Research shows that victims of child abuse can develop a physiological vulnerability to developing chronic pain, which may significantly affect their surgical outcomes.” He also finds that the Doctor Dissatisfaction Scale and the Substance Abuse Scale yield pertinent information for pre-surgical evaluations.

### **Evaluating post-concussive syndrome**

Another area of Cory’s practice is assessing patients with traumatic brain injury (TBI), which he has been doing since his pre-doctoral work. He conducts about 40 such evaluations per year. The majority of the cases he evaluates are for mild brain injury. Since Bozeman doesn’t have a brain rehabilitation program, patients with more severe brain injuries travel to larger communities for treatment, although Cory often provides the initial evaluation and rehabilitation recommendations for these patients as well.

“Recently, there has been a great deal of press coverage on TBI and this is both good news and bad news,” Cory says. “On the one hand, it’s good that we are raising awareness that people who have suffered concussions shouldn’t be sent back in to play sports too quickly, when their brains are vulnerable to even further injury. On the other hand, I think the press coverage has led many people to think that every brain injury lasts forever. But concussion is generally just a shake-up of the chemicals in your brain; your brain doesn’t have a bruise. Most concussions resolve spontaneously; and for the minority of people who continue to have symptoms beyond two or three months, it is largely due to psychological issues. My biggest challenge is in educating both patients and medical providers about this, so that we can focus on providing psychological treatment to help these patients fully recover. Formal neuropsychological evaluation helps objectively document the typically full cognitive recovery that has occurred, as well as the psychological symptoms and vulnerabilities that are present. Fortunately, the neurologists with whom I work are on board with recognizing that the root issues with post-concussive syndrome are psychological. They tell me they are pleased with the evaluations I provide because it helps them design treatment appropriately.”

Cory’s assessment for TBI patients includes administration of the MMPI-2-RF. “Even for patients with mild impairment, you need an objective, sensitive measure to scratch below the surface,” he says. “The MMPI-2-RF helps us distinguish whether the patient’s symptoms are due to organic brain injury—or to pre-existing or resultant psychological issues.”

He appreciates the RC (Restructured Clinical) Scales, which form the core of the MMPI-2-RF. “The RCd Scale (Demoralization) is very useful in helping me to separate out demoralization from other psychological issues the patient might report,” he says. “The RCI Scale (Somatic Complaints) helps me assess whether the patient has a tendency to develop somatic symptoms on response to psychological stress.” He also looks closely at the Somatic/Cognitive Scales, which are provided only on the MMPI-2-RF, not the MMPI-2. These include the MLS (Malaise), HPC (Head Pain Complaints), and COG (Cognitive Complaints) Scales.

Several of the MMPI-2-RF validity scales are particularly helpful in Cory's assessment of patients with TBI. "The FBS-r Scale (Symptom Validity) helps me determine whether the patient is minimizing psychological issues and emphasizing a high degree of disability due to physical and cognitive symptoms; this scale was normed on people in litigation for brain injury and cognitive problems," he says. "The RBS Scale (Response Bias Scale), which helps assess whether a patient is overreporting memory and other cognitive complaints, and the Fs Scale (Infrequent Somatic Responses) are also useful to me with TBI patients."

"In communicating with both physicians and payors, I can rely on the MMPI-2-RF to give me strong objective evidence to back up my recommendations," Cory says. "I can tell them, 'The reason I know this is because it's indicated by a test that is as sensitive and scientifically valid as a medical test.'"

### **Building relationships with medical colleagues**

In the future, Cory hopes to create a multidisciplinary team comprising his practice and other collaborating practices and professionals, including psychologists who specialize in chronic pain, health psychology, psychotherapy, and cognitive behavioral treatment, along with other team members such as physical therapists, speech therapists, psychiatrists, and neurologists. "A team approach is best, but it's a challenge to create this in a state as sparsely populated with mental health professionals as Montana," he says.

For other psychologists who are considering developing relationships with medical practitioners, Cory says: "If you build it, they will come. There is such a need for psychologists to share our expertise with medical teams. We have methods to answer questions that will help patients achieve better outcomes." He also comments that to be successful in this arena, the psychologist must communicate effectively with medical professionals. "Tell physicians succinctly what they need to know — and back it up with objective evidence," he advises.

### **BIO:**

**Jeffrey Cory, PhD**, is a licensed psychologist in Montana, Colorado, Utah, and California with a specialty in clinical neuropsychology and medical psychology. His private practice is Rocky Mountain Neuropsychology in Bozeman, Montana. Cory received a Bachelor of Arts in psychology from Stanford University and a Master's and PhD from Colorado State University. He completed a postdoctoral fellowship in clinical neuropsychology at UCLA Semel Institute for Neuroscience and Human Behavior and Resnick Neuropsychiatric Hospital. His training includes pre- and post-doctoral clinical training and research in cross-cultural and Spanish-language neuropsychology.

### **Footnote:**

\* For more information on the algorithm developed by Andrew Block, PhD, see "Global leader on chronic pain psychology discusses his use of the MMPI-2-RF for patient evaluations," Bridging the Gap, September 2009.