The MMPI-2-RF (Restructured Form) in Medical Settings

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Disclosure

Yossef Ben-Porath is a paid consultant to the MMPI publisher, the University of Minnesota, and distributor, Pearson. As co-author of the MMPI-2-RF he receives royalties on sales of the test.
Agenda

- Using the MMPI/MMPI-2 in Medical Settings
- MMPI-2-RF Overview
- Using the MMPI-2-RF in Medical Settings

Using the MMPI/MMPI-2 in Medical Settings

- Developed for use with mental health and medical patients
- Differential diagnosis of eight common forms of psychopathology
- Two of the originally-targeted disorders, *Hypochondriasis* and *Hysteria*, focused on somatic complaints
- Somatic symptoms also feature prominently on *Depression* and *Schizophrenia* scales
“Many a medical man has wished for an easily applicable measuring device which would identify and characterize the psychoneurotic patient with a minimum use of the time consuming interview technique that is conventional in the psychiatric approach.

Recognizing this problem and desiring to contribute to its solution, we began work in 1937 on the development of an objective personality test which is simple to use, easy to interpret, and conserving of time”

- Classified MMPI items, including:
  - General Health (9)
  - General Neurologic (19)
  - Cranial Nerves (11)
  - Motility and coordination (6)
  - Vasomotor, Trophic, Speech, Secretory (10)
  - Cardiorespiratory (5)
  - Gastrointestinal (11)
  - Genitourinary (6)
### McKinley & Hathaway (1943) JAMA

- **Case examples include**
  - 43-year-old man admitted to the hospital for a probable ulcer
    - MMPI administered: Hs 87, D 83, Hy 78
    - Treated with supportive therapy and diet change; surgery avoided
  - 25-year-old woman admitted with various confusing neurologic symptoms
    - Physician suspected symptoms had neurotic basis
    - MMPI WNL
    - Eventually determined to have MS

### Osborne (1979) on MMPI Applications in Medical Settings

- “**Functional versus Organic diagnosis**”
  - [MMPI] differences cannot be relied upon to identify individual members of either group
- **Response to Medical Treatment**
  - Extreme elevations on Hs and Hy (>80) predict poor outcome in chronic pain treatment
  - Test can predict post-surgical emotional complications
Osborne (1979) on MMPI Applications in Medical Settings

- **Emotional Aspects of Illness**
  - Test can identify medical patients with concomitant emotional problems
  - Does not reliably predict development of medical conditions
- **MMPI Profiles of Medical Patient Groups**
  - A high degree of similarity in mean profiles of patients with various diseases
    - In most groups Hs and Hy are elevated

Arbisi and Seime (2006) on MMPI-2 Applications in Medical Settings

- **The Functional versus Organic Dichotomy**
  - Moderate elevations on Scales 1, 3, and HEA can reflect genuine somatic problems
  - Extreme elevations are associated with somatization
- **Test provides:**
  - Broadband assessment of psychological functioning in medical settings
  - Focus on somatization
  - Information on over-reporting
Arbisi and Seime (2006) on MMPI-2 Applications in Medical Settings

- Specific Applications
  - Condition Management
    - Chronic Pain
    - Chronic Fatigue
    - Life-threatening illness
  - Pre-surgical Screening
    - Spine
    - Bariatric
    - Organ transplant
  - Health-related Behaviors
    - Coronary Artery Disease
    - Smoking Cessation

Other MMPI-2 Applications in Medical and Medico-Legal Settings

- Neuropsychological Assessments
  - Clinical
  - Rehabilitation
  - Disability Claims
  - Personal Injury Litigation
MMPI-2-RF Overview

- 338-item version of MMPI-2
MMPI-2-RF Overview

- 338-item version of MMPI-2
- Authors

Yossef S. Ben-Porath  Auke Tellegen

MMPI-2-RF Overview

- 338-item version of MMPI-2
- Authors
- Subset of MMPI-2 pool
MMPI-2-RF Overview

- 338-item version of MMPI-2
- Authors
- Subset of MMPI-2 pool
- Norms based on MMPI-2 sample

MMPI-2-RF Overview

- New, 338-item version of MMPI-2
- Authors
- Subset of MMPI-2 pool
- Norms based on MMPI-2 sample
- MMPI-2 available as well
MMPI-2-RF Scales

- 51 Scales
  - 9 Validity Scales
  - 3 Higher-Order Scales
  - 9 RC Scales
  - 23 Specific Problems Scales
    - 5 Somatic/Cognitive
    - 9 Internalizing
    - 4 Externalizing
    - 5 Interpersonal
  - 2 Interest Scales
  - 5 PSY-5 Scales

MMPI-2-RF: RC Scales

- Identical to MMPI-2 RC Scales
  - RC1: **Somatic Complaints** – Diffuse physical health complaints
Somatic/Cognitive

- MLS: Malaise – Overall sense of physical debilitation, poor health
- GIC: Gastrointestinal Complaints – Nausea, recurring upset stomach, and poor appetite
- HPC: Head Pain Complaints – Head and neck pain
- NUC: Neurological Complaints – Dizziness, weakness, paralysis, loss of balance, etc.
- COG: Cognitive Complaints – Memory problems, difficulties concentrating

MMPI-2-RF in Medical Settings
MMPI-2-RF in Medical Settings

- Intended for use wherever MMPI-2 is used
  - Broadband measure of personality and psychopathology
  - Linked to contemporary conceptualizations of both
  - Consequently, can provide useful information on medical patients’
    - test-taking approach
    - psychopathology symptoms
    - personality traits
    - behavioral proclivities

MMPI-2-RF in Medical Settings

- Technical Manual
  - Medical Medico-Legal Data
    - Empirical Correlates
    - Comparison Groups
## Appendix A
External Correlates Tables

### Index to Tables by Setting

<table>
<thead>
<tr>
<th>Setting</th>
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<tbody>
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<td>Outpatients, Community Mental Health Center</td>
<td>1–24</td>
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<tr>
<td>Psychiatric Inpatients, Community Hospital/VA</td>
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<td>Medical Outpatients, VA Hospital</td>
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<td>Substance Abuse Treatment, VA Hospital</td>
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<td>Disability Claimants</td>
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<td>Criminal Defendants</td>
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<tr>
<td>College Students</td>
<td>129–136</td>
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Appendix A
External Correlates Tables

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<td>College Students</td>
<td>129–136</td>
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Appendix D
Comparison Group T-Score Means and Standard Deviations
MMPI-2-RF: Standard Comparison Groups

- MMPI-2-RF Normative (Men & Women)
- Outpatient, Community Mental Health Center (Men & Women)
- Outpatient, Independent Practice (Men & Women)
- Psychiatric Inpatient, Community Hospital (Men & Women)
- Psychiatric Inpatient, VA Hospital (Men)
- Substance Abuse Treatment, VA (Men)
- Bariatric Surgery Candidate (Men, Women)
- Spine Surgery/Spinal Cord Stimulator Candidates (Men & Women)
- College Counseling Clinic (Men & Women)
- College Student (Men & Women)
- Forensic, Child Custody (Men & Women)
- Forensic, Disability Claimant (Men & Women)
- Forensic, Independent Neuropsychological Examination (Men & Women)
- Forensic, Pre-trial Criminal (Men & Women)
- Prison Inmate (Men & Women)
- Personnel Screening, Law Enforcement (Men, Women & Combined)
- Personnel Screening, Corrections Officer (Men, Women & Combined)
- Personnel Screening, Clergy Candidates (Men, Women, & Combined)
Psychological Risk Factors for Poor Outcome in Bariatric Surgery

- Factors associated with poor outcome, including ability to maintain focus on self-care when faced with adversity:
  - Maladaptive (acting out) behavior
  - Affective instability
  - Depression
  - Low Stress tolerance
Examination of the MMPI-2 Restructured Clinical (RC) Scales in a Sample of Bariatric Surgery Candidates

Dustin R. Wygant · Luna I. Broussard · Paul A. Arbeli · Yosof S. Ben-Porath · Peter H. Kelly · William M. Rupp

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Abstract. The current study examined the MMPI-2 Restructured Clinical (RC) scales (Tebben et al., MMPI-2 Restructured Clinical (RC) scales: Development, validation, and Interpretation, Minneapolis: University of Minnesota Press, 2003) in a sample of 1,091 bariatric surgery candidates. The RC scales were developed to address concerns about limited discriminant validity of the Clinical scales. Internal consistency and external validity analyses were conducted to evaluate the RC scales in this setting. Results indicated that the RC scales are generally more internally consistent than the Clinical scales and display significantly better convergent and discriminant validity in predicting a variety of behavioral, psychological, and developmental variables relevant to preoperative bariatric psychological evaluations. Implications of the results and recommendations for future research with the RC scales in medical settings are discussed.

Introduction

Surgical options have proven to be among the most viable for successful treatment of morbid obesity (Torgerson & Sjostrom, 2006), which is one of the fastest growing health concerns in the United States (Modavi et al., 2003; Oligen et al., 2006). Psychological factors, such as maladaptive behaviors and affective instability are associated with poor surgery outcomes, including a patient’s ability to maintain focus on self-care guidelines when faced with adversity (Provenz, Androso, & Vassallo, 2003), binge eating behavior to modulate emotions (Grissos, Vaz, Lopez-Boe, & Rabin, 2001; Hsu, Sullivan, & Benefit, 1997), and low stress tolerance. Furthermore, undiagnosed or poorly controlled mood pathology can lead to weight regain in the first five postoperative years (Winer et al., 1991). As a result, bariatric surgeons are increasingly calling on psy-

Table 4: Correlations between MMPI-2 Restructured Clinical (RC) scales and criterion measures

<table>
<thead>
<tr>
<th>Criterion Measure</th>
<th>n</th>
<th>RC1</th>
<th>RC2</th>
<th>RC3</th>
<th>RC4</th>
<th>RC6</th>
<th>RC7</th>
<th>RC8</th>
<th>RC9</th>
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<tr>
<td>Poor adherence to follow-up</td>
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<td>.15</td>
<td>.30</td>
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<td>Maladaptive eating variables</td>
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<td>Mental health history variables</td>
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<td>.27</td>
<td>.34</td>
<td>.27</td>
<td>.13</td>
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<td>Hx of using psychotropic medication</td>
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<td>.08</td>
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<td>Developmental variables</td>
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<td>Upbringing chaotic (vs. stable)</td>
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<td>.11</td>
<td>.09</td>
<td>.03</td>
<td>.13</td>
<td>.15</td>
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<td>.02</td>
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<tr>
<td>Upbringing cold/yellowing (vs. warm/loving)</td>
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<td>.11</td>
<td>.11</td>
<td>.13</td>
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<td>.07</td>
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<td>Upbringing dysfunctional (vs. functional)</td>
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<td>.09</td>
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<td>Hx of childhood sexual abuse</td>
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<td>.16</td>
<td>.02</td>
<td>.04</td>
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<td>.16</td>
<td>.07</td>
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<td>Hx of childhood physical abuse</td>
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<td>.04</td>
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<td>.21</td>
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<td>.08</td>
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<td>Hx of childhood emotional abuse</td>
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<td>.27</td>
<td>.05</td>
<td>.02</td>
<td>.31</td>
<td>.09</td>
<td>.05</td>
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<td>.03</td>
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<td>Hx of weight-related teasing</td>
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<td>.04</td>
<td>.08</td>
<td>.13</td>
<td>.12</td>
<td>.14</td>
<td>.10</td>
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<td>Mental status exam variables (independent of MMPI-2 results)</td>
<td>285</td>
<td>.33</td>
<td>.35</td>
<td>.25</td>
<td>.18</td>
<td>.25</td>
<td>.08</td>
<td>.30</td>
<td>.16</td>
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<tr>
<td>Poor insight</td>
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<td>.27</td>
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<td>.19</td>
<td>.25</td>
<td>.37</td>
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<td>Negative effects of obesity</td>
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<td>.04</td>
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<td>Quality of life</td>
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<td>.18</td>
<td>.25</td>
<td>.08</td>
<td>.30</td>
<td>.16</td>
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</table>

Note: Conceptually relevant (convergent) correlations are underlined. QOLI = Quality of Life Indicator, RC1 = Denormalization, RC2 = Somatoform complaints, RC3 = Antisocial behavior, RC4 = Depression, RC6 = Depression, RC7 = Hypomanic activation, RC8 = Anxious, RC9 = Hypomanic activation

*p ≤ .003
### Bariatric Surgery Candidates

#### MMPI-2-RF Validity Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Men (n=232)</th>
<th>Women (n=435)</th>
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<td>VRIN-r</td>
<td>47</td>
<td>46</td>
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<tr>
<td>TRIN-r</td>
<td>53</td>
<td>52</td>
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<tr>
<td>F-r</td>
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<td>51</td>
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<tr>
<td>Fp-r</td>
<td>48</td>
<td>48</td>
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<tr>
<td>Fs</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>FBS-r</td>
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<td>58</td>
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<tr>
<td>RBS</td>
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<td>50</td>
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<tr>
<td>L-r</td>
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<td>51</td>
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<tr>
<td>K-r</td>
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<td>52</td>
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#### Presurgical Screening, Bariatric

#### MMPI-2-RF Higher-Order (HOD) and Restructured Clinical (RC) Scales

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<th>Women (n=435)</th>
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<td>EID</td>
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<td>51</td>
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<tr>
<td>THD</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>BXD</td>
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<td>RC2</td>
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<td>57</td>
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<td>RC3</td>
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<td>53</td>
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<td>RC4</td>
<td>48</td>
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<td>RCI</td>
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<td>49</td>
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<tr>
<td>RC6</td>
<td>50</td>
<td>49</td>
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<tr>
<td>RC7</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>RC8</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>RC9</td>
<td>46</td>
<td>48</td>
</tr>
</tbody>
</table>

| Mean - Men | 49 | 51 |
| Standard Dev | 11 | 9 |
| Mean - Women | 51 | 47 |
| Standard Dev | 11 | 8 |
Presurgical Screening, Bariatric

**MMPI-2-RF Somatic and Cognitive Scales**

![Chart showing somatic and cognitive scales for men and women with mean and standard deviation values.]

Mean - Men 64 50 53 54 51 47 46 50 47 48 48 49 48 47
Standard Dev 10 10 9 12 11 7 9 10 10 9 10 7 7
Mean - Women 65 53 58 53 48 47 45 53 49 49 50 48 48 51
Standard Dev 10 12 11 11 10 7 7 11 10 10 9 8 8

**MMPI-2-RF Externalizing, Interpersonal, and Interest Scales**

![Chart showing externalizing, interpersonal, and interest scales for men and women with mean and standard deviation values.]

Mean - Men 54 47 47 44 46 47 53 47 50 41 59
Standard Dev 12 7 9 8 9 8 11 9 10 8 9
Mean - Women 51 46 45 47 49 50 52 49 48 49 44
Standard Dev 11 7 8 10 10 10 12 10 8 10 6
Presurgical Screening, Bariatric

MMPI-2-RF Personality Psychopathology Five (PSY-5) Scales

Mean - Men 52 50 54 49 51
Standard Dev 11 10 10 10 11
Mean - Women 48 47 46 49 52
Standard Dev 8 8 8 10 11

MMPI-2-RF Higher-Order (H-O) and Restructured Clinical (RC) Scales

Raw score: 5 6 7 8 9 10 11 12 13 14 15 16
T score: 48 50 52 54 56 58 60 62 64 66 68 70
Response %: 100 100 100 100 100 100 100 100 100 100 100 100

Composition Group Data: Bariatric Surgery Candidates, N = 250
Mean Score: 50 52 54 56 58 60 62 64 66 68 70

The highest and lowest T scores possible on each scale are indicated by a "- MMPI-2-RF T scores are non-normalized."
Spine Surgery/Spinal Cord Stimulator Candidates
Psychological Risk Factors for Poor Outcome in Spine Surgery/Spinal Cord Implant

- Pain Sensitivity
- Depression
- Anxiety
- Anger
- Catastrophizing
- Disability-seeking
- Low self-esteem
- Excessive guardedness

Psychological Risk Factors for Poor Outcome in Spine Surgery/Spinal Cord Implant

- Pain Sensitivity (RC1, MLS, HPC, NUC)
- Depression (RCd, RC2, SUI)
- Anxiety (RCd, RC7, STW, AXY)
- Anger (RC7, ANP, AGG)
- Catastrophizing ([-]K-r, RCd, MLS)
- Disability-seeking (Fs, FBS-r, MLS)
- Low self-esteem (SFD)
- Excessive guardedness (L-r, K-r)
Block Spine Surgery Candidates

MMPI-2-RF Validity Scales

- **Mean - Men**
  - VRIN-r: 48
  - TRIN-r: 52
  - F-r: 56
  - Fp-r: 49
  - Fs: 54
  - FBS-r: 60
  - RBS: 66
  - L-r: 59
  - K-r: 53
  - Standard Dev: 9

- **Mean - Women**
  - VRIN-r: 48
  - TRIN-r: 52
  - F-r: 56
  - Fp-r: 49
  - Fs: 55
  - FBS-r: 60
  - RBS: 68
  - L-r: 58
  - K-r: 53
  - Standard Dev: 10

Pre-Surgical & Pre-Implant

MMPI-2-RF Higher-Order (HOD) and Restructured Clinical (RC) Scales

- **Mean - Men**
  - EID: 50
  - THD: 48
  - BXD: 50
  - RCd: 61
  - RC1: 54
  - RC2: 54
  - RC3: 49
  - RC4: 50
  - RC6: 51
  - RC7: 45
  - RC8: 47
  - RC9: 48
  - Standard Dev: 11

- **Mean - Women**
  - EID: 51
  - THD: 48
  - BXD: 43
  - RCd: 52
  - RC1: 55
  - RC2: 64
  - RC3: 66
  - RC4: 58
  - RC6: 59
  - RC7: 53
  - Standard Dev: 10
Pre-Surgical & Pre-Implant

**MMPI-2-RF Somatic and Cognitive Scales**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean - Men</th>
<th>Standard Dev</th>
<th>Mean - Women</th>
<th>Standard Dev</th>
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<tbody>
<tr>
<td>MLS</td>
<td>66</td>
<td>11</td>
<td>69</td>
<td>11</td>
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<tr>
<td>GIC</td>
<td>54</td>
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<td>HPC</td>
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<td>NUC</td>
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**MMPI-2-RF Externalizing, Interpersonal, and Interest Scales**

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Pre-Surgical & Pre-Implant

MMPI-2-RF Personality Psychopathology Five (PSY-5) Scales

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Chronic Pain Treatment Candidates
(Not yet in Software)
Chronic Pain Treatment Candidates

- Are distinctive from Spine Surgery/Spinal Cord Stimulator Candidates
  - More “Chronic”
  - More likely to be involved in disability claims

CCF Chronic Pain Patients

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MMPI-2-RF Validity Scales

- Men (n=502)
- Women (n=886)
CCF Chronic Pain Patients

MMPI-2-RF Higher-Order (HOD) and Restructured Clinical (RC) Scales

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Men - Men

Mean - Men: 61 52 54 61 70 63 49 55 53 51 53 48
Standard Dev: 12 10 11 11 13 10 12 11 11 10 12

Women - Woman

Mean - Woman: 63 53 45 63 73 63 48 49 53 54 53 44
Standard Dev: 12 10 9 12 11 9 10 11 11 11 10

MMPI-2-RF Somatic and Cognitive Scales

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Men - Men

Mean - Men: 77 63 64 70 61 57 54 57 52 55 57 54 51 46
Standard Dev: 8 17 10 13 14 17 13 12 11 11 15 12 9 7

Women - Woman

Mean - Woman: 77 67 67 71 63 58 58 54 57 59 53 55 53
Standard Dev: 8 17 10 14 14 17 13 12 12 12 14 11 12 10
CCF Chronic Pain Patients

**MMPI-2-RF Externalizing, Interpersonal, and Interest Scales**

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**MMPI-2-RF Personality Psychopathology Five (PSY-5) Scales**

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CCF Chronic Pain Patients versus Spine Surgery Candidates - Men

CCF Chronic Pain Patients versus Spine Surgery Candidate - Women
CCF Chronic Pain Patients versus Spine Surgery Candidate - Men

**MMPI-2-RF Somatic and Cognitive Scales**

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CCF Chronic Pain Patients versus Spine Surgery Candidates - Women

**MMPI-2-RF Somatic and Cognitive Scales**

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Mean - Spine Surgery

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Standard Dev Spine Surgery

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31
CCF Chronic Pain Patients versus Spine Surgery Candidate - Men

MMPI-2-RF Externalizing, Interpersonal, and Interest Scales

CCF Chronic Pain Patients (n=502) vs. Spine Surgery (n=263)

Mean - CCF CPP | 55 53 51 47 50 49 56 50 54 42 57
Standard Dev | 13 11 11 9 11 9 11 11 13 8 10
Mean - Spine Surgery | 54 47 47 44 46 48 53 48 51 41 58
Standard Dev | 11 7 10 9 9 9 10 10 7 10

CCF Chronic Pain Patients versus Spine Surgery Candidate - Women

MMPI-2-RF Externalizing, Interpersonal, and Interest Scales

CCF Chronic Pain Patients (n=886) vs. Spine Surgery (n=265)

Mean - CCF CPP | 49 47 47 48 53 53 53 59 51 48 44
Standard Dev | 10 8 8 10 11 11 10 11 9 6
Mean - Spine Surgery | 46 44 44 44 48 50 59 48 47 42
Standard Dev | 8 8 7 9 9 9 10 8 9 9 7
CCF Chronic Pain Patients versus Spine Surgery Candidate - Men

MMPI-2-RF Personality Psychopathology Five (PSY-5) Scales

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CCF Chronic Pain Patients versus Spine Surgery Candidate - Women

MMPI-2-RF Personality Psychopathology Five (PSY-5) Scales

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Summary

- MMPI-2-RF provides:
  - Improved efficiency
    - Less patient time
    - Less clinician time
  - Broadband assessment of:
    - Personality and Psychopathology
    - Protocol validity
  - Enhanced construct validity
  - Expanded focus on somatic complaints
  - Comparison groups