CURRENT OPINION

Evaluating Malingering in Contested Injury or Illness

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■ **Abstract:** An interdisciplinary task force of physicians and neuropsychologists with advanced training in impairment and disability assessment provided a review of the literature on malingering in chronic pain, medical disorders, and mental/cognitive disorders. Our review suggests that treating health care providers often do not consider malingering, even in cases of delayed recovery involving work injuries or other personal injuries, where there may be a significant incentive to feign or embellish symptoms or delay recovery. This report discusses the implications of this issue and offers recommendations to evaluating physicians and other health care professionals. ■

Key Words: malingering, disability evaluation

INTRODUCTION

Malingering

The concept of malingering dates back to antiquity. Even in biblical times, individuals feigned illness in order to avoid execution. Throughout the years, malingering has been utilized as a way to avoid military service, work, school, unpleasant responsibilities, etc. According to Sari and Spires,[1] Bleuler first conceptualized malingering as a mental illness, a notion that gained prominence during World War II.

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*) describes malingering as "the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs" (p. 739).[2] The *DSM-IV-TR* provides four criteria for meeting the definition:

1. Medical/legal context (referred by an attorney): This usually involves litigation. A person claims to have been injured with someone else at fault and now wants to be compensated for the injury. Faking or exaggerating an illness or injury is determined to have a secondary gain, as there is no reason to malinger without an incentive.
2. Marked discrepancy between claimed disability and objective findings: Because the illness or injury is fabricated, exaggerated, or embellished,

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Pain Practice, Volume 7, Issue 2, 2007 178–204

the patient or claimant* may not have objective findings of the alleged illness or injury.

Symptom exaggeration (which can be a conscious or unconscious process) related to a mental disorder may produce "nonorganic" findings on examination and may make the individual appear to be bizarre or suspect. Other emotional conditions to consider prior to the classification of malingering, according to the *DSM-IV-TR*, are factitious disorder, somatization disorder, conversion disorder, and pain disorder associated with psychological factors.

3. Lack of cooperation with testing or treatment: An individual who is malingering may avoid objective diagnostic evaluations or therapeutic interventions, especially if those are likely to confirm the discrepancy between subjective complaints and (lack of) objective findings.
4. Antisocial personality disorder: These individuals exhibit, or their records reflect, a deviation from the social norms or unlawful behavior; they are at least 18 years of age, developed a conduct disorder with onset before age 15, and have a family history of a triad of antisocial personality disorder, substance disorders, and somatization. The history may indicate: behaviors that were grounds for arrests; deceitfulness such as lying, developing aliases, and misrepresentation; or self- or other-directed violence, impulsivity, disregard for safety, irresponsibility, failure to work, lack of remorse, stealing, etc.

According to the *DSM-IV-TR*, probable malingering exists when two or more of the four criteria are met. However, other emotional disorders (as stated above) can be mistaken for malingering.

One tends to suspect malingering when an individual presents in a medicolegal context exhibiting disabling symptoms that are blatantly exaggerated, inconsistent with anatomic or physiologic mechanisms, and unaccompanied by appropriate objective evidence of impairment. However, in many instances the presentation is not straightforward. In such situations, malingering can go on for considerable periods of time before the clinician even considers it as a diagnostic possibility. This is particularly the case when malingering develops or progresses over time in response to situational incentives in individuals who are psychologically and/or environmentally prone to this behavior.

Because the *DSM-IV-TR* defines malingering not as attributable to a mental disorder but rather as the intentional production of false or grossly exaggerated physical or psychological symptoms, malingering implies conscious deception. Persons usually malinger psychosis for one of the following five reasons:

1. To avoid criminal punishment by feigning incompetence to stand trial or insanity at the time of the crime, or to mitigate sentencing.
2. To avoid induction into the military, undesirable military assignments, or combat.
3. To receive financial gain from social security disability, veterans benefits, workers' compensation, or personal injury damages.
4. For substance abusers/criminals, to obtain drugs or to be transferred to a psychiatric hospital where they perceive they will have an easier stay, or have a greater opportunity to escape.
5. To obtain social services or free room and board, or to avoid criminal charges (p. 48).[3]

In a classic study, Rosenhan[4] evaluated eight individuals (without apparent psychiatric disorder) who presented themselves for admission into a psychiatric hospital alleging that they heard atypical voices. All were admitted and stopped reporting symptoms once they were admitted. All were diagnosed as having schizophrenia and remained hospitalized from 9 to 52 days. The study concluded that mental health professionals were unable to distinguish normality from mental illness, especially regarding feigned psychosis.

Malingering is distinct from factitious disorder. In factitious disorder, maintaining the symptoms is not motivated by external gain, but rather by internal emotional and psychological issues, causing the claimant to maintain a "sick role."

Rogers[3] criticized *DSM-IV* [5] screening indices for malingering and found the criteria to be overly moralistic and empirically lacking. He found that use of two or more of the *DSM-IV* indicators of malingering correctly classified only two-thirds of malingerers. Moreover, for every malingerer who was correctly classified, four actual claimants were misclassified. Rogers views malingering within the context of an adaptation model: "Would-be malingerers engage in a cost-benefit analysis when confronted with an assessment they perceive as indifferent, if not inimical to their needs. Malingering is more likely

*Throughout this article the word *patient* is used when it is assumed that the interaction with the individual is in a clinical context, and *claimant* or *evaluee* when referring to a medical-legal/forensic context.

to occur when 1) the context of the evaluation is perceived as adversarial, 2) the personal stakes are very high, and 3) no other alternatives appear to be viable" (p. 8).[3]

Prior to recent studies on litigating and benefit-seeking chronic pain claimants, relatively few claimants with pain or medical problems were thought to be malingering. Some individuals are passive, dependent, and emotionally needy, and look to their health care provider for comfort and emotional support. For them, illness was felt to involve primary gain. In the majority of claimants, emotional and psychological manifestations and illness behaviors were felt to occur as part of a conditioned process, not motivated by personal gain or conscious attempts to defraud.[6,7] Most illness involves some secondary gains (not to be confused with malingering), such as avoiding certain activities and receiving increased attention. Other individuals manage to cope with life's demands until faced with an illness or injury, at which point they have difficulty resuming their baseline functioning, leading to delayed recovery and prolonged disability. Detailed assessment may reveal a characteristic developmental history and past psychosocial history notable for many unmet emotional needs, psychosocial traumas, physical/sexual abuse, and hyperresponsibility at an early age.[8] The ongoing symptoms seem to be their way of saying, "now it is my turn to be taken care of."[9] These individuals do not plan their suffering, and they are not considered to be malingering, even though their ongoing suffering and illness behavior may not correspond to a disease. Without appropriate treatment, some continue in the sick role indefinitely.[10]

While secondary gain can be based upon monetary issues, and may be associated with malingering, the assumption that this is always the case often does a disservice to the claimants receiving disability payments, who, when resistant to returning to work, can have unfounded suspicions cast on the legitimacy of complaints and symptoms. In fact, legitimate concerns and fears may be interfering with their return to work. The courts and media have drawn attention to fraudulent cases by showing surveillance video of workers who are collecting disability payments for injuries and are seen on film doing strenuous physical activities. But this is more the exception than the rule. Boden[11] estimated that at most, 3% of injured workers in the United States fall into this category.

Table 1 summarizes prevalence rates for feigned mental disorders, cognitive impairments, and chronic pain.

Fishbain et al.[33] indicated that malingering occurred in 1.25% to 10.4% of chronic pain claimants. More recent research has suggested a much higher incidence of malingering of chronic pain, or cognitive or emotional symptoms secondary to chronic pain, in litigating and benefit-seeking claimants. Larrabee[36,37] and Meyers et al.[35] indicated a 36% base rate for malingering in chronic pain claimants. Gervais et al.[38] found that 50% of compensation-seeking chronic pain claimants failed symptom validity tests (the Computerized Assessment of Response Bias [CARB] and the Word Memory Test), and that when warned that poor test performance would cast doubt on their claimed impairment, they had a drop in failure rate to 6%. This clearly indicates the presence of conscious symptom distortion and lack of full effort in this problematic group of claimants. Gervais et al.[34] also found that 0% of rheumatoid arthritis patients and nondisability-seeking fibromyalgia claimants failed the above symptom validity tests, compared with 30% of fibromyalgia claimants seeking disability. Converging newer literature suggests the need to consider a possible 30% to 40% incidence of malingering of pain, emotional, and/or cognitive symptoms secondary to pain in litigating and benefit-seeking claimants. Mittenberg et al.[39] indicate a 38.61% malingering base rate for fibromyalgia and a 33.51% malingering base rate for chronic pain or somatoform disorders. Available studies agree that in chronic pain populations not seeking compensation, rates of malingering are low.

Miller[40] was one of the first authors to calculate that compensation benefits of much greater than 50% of wages led to an increased number of days of the disability claim by persons who were insured. According to Loeser et al.,[7] not all of the reviewed studies on back pain were fully consistent, and not all of the studies showed any effect. The best available literature suggests that a 10% increase in workers' compensation benefits produces a 10% to 11% increase in the number of claims and a 2% to 11% increase in the average duration of claims. This translates into an average increase of 2 to 5 days off work because of back pain. These effects are similar for other injuries such as fractures and for other subjective complaints such as soft tissue injuries. It should be noted that secondary gains might be balanced by secondary losses.[6]

Nagi and Hadley[41] showed that 82% of disabled people in the United States were financially worse off than when they were working, 17% had little change, and only 1.5% were better off. The trend had not changed by the 1990s. Few people on disability benefits are better off than when they were working. Half of the disabled persons receiving compensation benefits receive

Table 1. Prevalence Rates for Feigned Mental Disorders, Cognitive Impairments, and Chronic Pain

Feigned mental disorders		
Keiser 1968[12]	Post-traumatic stress disorder	1%
Miller and Cartlidge 1972[13]	Post-traumatic stress disorder	50%
Henderson 1986[14]	Post-traumatic stress disorder	50%
Rogers 1986[15]	Total likely malingering insanity plea and judged sane	24.5%
	Definite malingering	4.5%
	Probable malingering	20%
Rogers 1990[16]	Malingering in correctional population	5–50%
Rogers et al. 1994[17]	Forensic cases	15.7%
	Nonorensic cases	7.4%
Schretlen et al. 2000[18]	Criminal defendants	11.3%
Feigned cognitive impairments		
Hopwood and Snell 1933[19]	Malingered amnesia	22%
	Definite malingering	14%
	Probable malingering	8%
Kiersch 1962[20]	Malingered amnesia detected by hypnosis and amytal interview	41%
	Self-admitted malingered amnesia	25%
Heaton et al. 1978[21]		64%
Heilbrun et al. 1990[22]	Malingered neuropsychological impairment	67%
Youngjohn 1991[23]	Malingered neuropsychological impairment in workers' compensation claimants	47%
Binder 1993[24]	Malingered neuropsychological impairment	18–33%
Trueblood and Schmidt 1993[25]	Malingered neuropsychological impairment	7.5–15.7%
Frederick et al. 1994[26]	Malingered neuropsychological impairment	10–25%
Rogers et al. 1994[17]	Forensic	15.7%
	Nonforensic	7.4%
Greiffenstein et al. 1994[27]	Malingered deficits in personal injury litigants	60–64%
Guilmette et al. 1994[28]	Social security claimants	18%
Meyers and Diep 2000[29]	Malingering of cognitive symptoms secondary to pain	
	Litigating	29%
	Nonlitigating	0%
Meyers and Volbrecht 2003[30]	Malingered neuropsychological impairment	15–20%
Feigned chronic pain		
Leavitt and Sweet 1986[31]		5–20%
Kay and Morris-Jones by Video Surveillance 1998[32]		20%
Fishbain et al. 1999[33]		1.25–10.04%
Gervais et al. 2001[34]	Chronic pain from fibromyalgia	
	Applying for disability	44%
	Already on disability	23%
Meyers et al. 2002[35]	Litigating	36%
	Nonlitigating	0%
Larrabee 2003[36]	Several study average	40%

less than 50% of their prior net earnings, and only one in eight receives more than 80%.[42] Only 5% of persons with back pain were financially better off than when they were working. These individuals were very few in number and were generally part-time or very poorly paid workers whose wages were so low that they gave little financial incentive to work at all. The overall social picture shows that the vast majority of people off work with back pain are much worse off financially in many ways. Disability compensation income or other sickness benefits are a very inadequate replacement of prior working income.

Financial incentives can modify people's behavior in certain situations. Once back injuries occur, better compensation benefits tend to increase the number and duration of claims.[42] However, studies differ as to whether compensation benefits increase the reported severity of back pain. The amount of compensation benefits is only one factor in maintaining an ongoing sick role. Socioeconomic issues affect workers' compensation claims, including work demands/environment, job satisfaction, availability of modified work, income generated, job security, advancement/career potential, pension, natural job attrition, job availability, and compensation.[42]

Rohling and Binder,[43] in a well-designed meta-analysis of 32 studies encompassing 3802 chronic pain claimants and 3849 control claimants, showed that claimants receiving compensation consistently reported more pain, although the difference was small, approximately 6%. They also concluded that the outcomes of conservative treatment, back surgery, and chronic pain rehabilitation programs are consistently poorer in com-

pensation claimants. Receiving compensation benefits delayed clinical recovery. Studies show that work-related injury and compensation lead to more prolonged disability, even when one considers job demands. Findings also suggested that, in the absence of compensation, there would be a 24% reduction in disability with consequent return to work. Studies also suggest that compensation claimants are more depressed.[43] It should be noted that the vast majority of compensation claimants (75–90%) respond well to treatment, recover from injury or illness, and return to work. Social factors tend to be less important with individuals who suffer severe physical injuries. Those with less-severe injuries, higher education, higher income, greater lost income, and more independence seem to have a higher motivation to return to work.[43]

MALINGERING AND THE PRIMARY CARE PHYSICIAN

Initial Presentation

Malingering can be a single action, such as "false imputation," in which an individual falsely claims that a given medical problem is due to a particular injury or event. This is often seen in claims that involve motor vehicle accidents, workers' compensation, or other liability claims, but can also occur when a person becomes disabled due to a medical condition that predated a newly acquired short- or long-term disability policy. The rationale is to obtain coverage or remuneration for conditions that otherwise would not be compensable.

Many primary care physicians do not concern themselves with issues regarding causation and apportionment, as they are generally not related to their primary responsibility of providing patient care. Additionally, focusing on these issues may pose an ethical dilemma, as it could conflict with their usual role as a patient advocate. However, physicians who see the claimant later in treatment often rely on these early treatment records as the basis for assessing a causal relationship between an incident, injury, or illness and resulting medical or psychiatric complaints. Therefore, it may be difficult for later physicians to accurately interpret the earlier reports, as the claimant's subjective complaints may have been accepted as fact in the history without any attempt to verify the alleged facts.

Regardless of the "usual" standard of care, physicians who manage work-injured patients or those with other personal injuries are advised to take a comprehensive history, including past medical/psychosocial history and mechanism of injury. To assess a causal relationship, one should assess areas such as temporal relationship and biological plausibility. The existence of a causal relationship should be assumed only in those situations in which the mechanism of injury and temporal factors are clearly supportive.

Symptom Magnification

Matheson first described the concept of symptom magnification in 1988 as "a conscious or unconscious self-destructive, socially reinforced behavioral response pattern consisting of reports or displays of symptoms which function to control the life circumstances of the sufferer." In essence, this is a learned behavior and not a *DSM-IV-R* or an ICD-9 coded diagnosis. Technically, it is not a medical diagnosis. Matheson[44] describes three types of patients who magnify symptoms: refugee, game player, and identified patient. Hayes et al.,[45] building on the work of Tyndel and Tyndel[46] and Wilfling and Wing,[47] coined the diagnostic term "nomogenic disorder" to describe litigation- or compensation-seeking claimants showing symptom magnification. This describes an iatrogenic disorder in which law and its application through tort awards and workers' compensation plays an etiologic role. In this model, pain and disability are caused and maintained by expectations of financial gain. They posit that using the diagnosis of a nomogenic disorder rather than malingering or a somatoform pain disorder gets around the problem of determining whether the malingering or magnifying behaviors are conscious (as in the malingering classification) or unconscious (as in the somatoform diagnosis), which is a very difficult differentiation to make empirically. They indicate that the behaviors of all claimants change compellingly in response to reinforcement. They conclude that whether the continuation or elaboration of pain disability behaviors is conscious or not, the treatment should be the same: removal of all social and financial reinforcers for pain disability behaviors.

Symptom magnification is said to be present when symptoms and/or disability are disproportionate to objective anatomical, physiological, or psychological findings. One should suspect symptom magnification when symptoms are vague, ill-defined, overdramatized, inconsistent, or not in conformity with expected signs and symptoms. It is also likely to be present when the results of physical and mental status examinations and other data are inconsistent with complaints.

According to Polatin et al.,[48] Mannion et al.,[49] and France et al.,[50] individuals with certain personality types

or psychiatric disorders have an increased prevalence of developing chronic pain and are more likely to exhibit symptom magnification. Dependency, passivity, and masochism are some of the personality characteristics seen in these claimants. They are often socially isolated, lonely, and have difficulty dealing with anger, hostility, and the communication of these feelings. Characteristically these claimants lack insight and often feel victimized. Preoccupation with, and virtual self-identification through, pain then becomes an important form of communication and gratification.[51–53]

The presence of any one of the following should alert the physician to the possibility of symptom exaggeration, but no one of them should be used independently to assess malingering. The more of these that are present, the greater the likelihood of malingering. However, further studies must validate this linear relationship.

1. Unlikely symptoms, physical capacities, or clinical course:
   - Complaints grossly in excess of clinical findings
   - Inconsistency in symptom presentation
   - Bizarre or absurd symptoms
   - Atypical fluctuation in symptoms in response to external incentives;
   - Unusual symptomatic response to treatment that cannot otherwise be explained (eg, paradoxical response to medication);
   - Markedly discrepant capacity for work vs. recreation
   - Substantial noncompliance with evaluation or treatment
   - Compliance only with passive rather than active treatment (assuming that one rules out comorbid disorders, eg, depressed patients may "give up")
   - Refusal to undergo any invasive testing or treatments, regardless of potential benefit
2. Other psychosocial or environmental indicators of concern:
   - Prior "incapacitating" injuries
   - Overly idealized functioning before the trauma
   - Evasiveness
   - Antisocial personality traits
   - Unvarying, repetitive dreams (if post-traumatic stress)
   - Poor work record
   - History of dissatisfaction with job
   - Poor relationship at work with employer, supervisor, or peers
   - Economic downturn affecting workplace with concern about job loss
   - Economic incentives (disability claim, tort action, motor vehicle accident, disability income from multiple sources, child-care issues)
   - Multiple family members on disability or with pattern of personal injury claims/work-related injury claims
   - Spouse on disability
   - History of failure of symptom validity tests or Functional Capacity Exam validity measures

The History

Pain complaints as well as other medical or psychiatric symptoms should be assessed for consistency with the clinical examination, diagnostic test results, the alleged injury, resulting suffering, and objective impairment. Pain is subjective, cannot be disproved, and generally must be accepted as what a *credible* claimant says it is.

One should also question the claimant regarding self-care issues (activities of daily living vs. attendant care issues): Is the person independent with all self-care skills, or is/was attendant care required? Is there a discrepancy between the medical records, the evaluation, and the claimant's alleged activities of daily living and dependence on attendant care? Are there obvious findings on physical examination that bring the claimant's credibility into question (grease under the fingernails of a "disabled" mechanic, well-calloused feet in an individual who claims to be sedentary and on bed rest, etc.)?

It is also critical to ask about prior medical history. Individuals who allege injury may deny prior injuries to the parts in question that are later noted in other medical records. This raises a suspicion of malingering, as it is suggestive of conscious motivation to link prior conditions with the trauma for personal gain. (A possible exception would be the individual who sustained head trauma and has significant residual cognitive deficits, and whose failure to recall a past injury or past medical/psychiatric problem noted in the prior records is consistent with what would be expected based upon neuropsychological testing or clinical assessment.)

Another area to evaluate is the ability to drive and/or take public transportation in order to perform routine daily tasks; those who are able to do this generally should also have the independence to travel to and from

work. Also, if the claimant is using assistive devices, one should ascertain who prescribed them, why they were prescribed, and whether their current use provides any functional benefit.

The Physical Examination

The injured worker who embellishes his or her medical history, exaggerates pain drawings, or responds in a manner that is inconsistent with known pathophysiology, is a significant challenge to the clinician. Physicians should become adept at using established clinical maneuvers to assist in assessing for possible symptom embellishment. For example, a strongly positive supine straight leg-raising test without similar complaints in the seated position with the knee extended in a claimant with low back pain is an inconsistent response and indicates that nonphysiological factors may be playing a role in the claimant's responses. Another example would be a positive Hoover test. Neither is pathognomonic for malingering. However, these types of findings should be noted and the significance clarified as to whether they suggest dysfunctional pain behavior or conscious symptom embellishment/malingering. The more of these that are present, the more likely that symptom magnification should be considered. However, whether it is a conscious process or an unconsciously conditioned dysfunctional pain behavior may require further evaluation.

Examination of the claimant suspected of malingering should include observing the person moving about the room before, during, and after the examination. These movements should be consistent with limitations reported in the history, especially with regards to work activities. In taking the claimant's history, it is critical to obtain a detailed description of the initial injury or event and the subsequent clinical course. Any discrepancy between this information and that found in the actual medical record should be grounds for questioning the credibility of the claimant and considering the possibility of malingering.

It is important to distinguish maladaptive pain behaviors such as the claimant's inappropriately prolonged use of assistive devices (canes, crutches, braces, orthoses, cervical collars, lumbar supports, transcutaneous electrical nerve stimulation machines) from adaptive use of assistive devices that give therapeutic benefit. Malingerers may use these devices when they go for an evaluation in an attempt to impress the physician/evaluator with the extent of their suffering. Records from their treating physician/clinician should document that these appliances had been prescribed, as well as for how long and when they were to be discontinued. The literature provides limited support for the use of orthotic devices, such as cervical collars and lumbosacral corsets, etc., in order to stabilize a body region. However, prolonged usage contributes to weakness and deconditioning (pp. 241–261).[54]

With regards to systemic examination, musculoskeletal or neurological deficits should be consistent with underlying anatomic and/or physiologic processes. If not, this should be noted. An attempt should also be made to compare "involuntary" (spontaneous) actions with those made when the claimant is specifically asked to perform a given activity.

Diagnostic Testing and Treatment

The purpose of providing diagnostic evaluation of individuals who exhibit delayed recovery or symptoms disproportionate to objective findings is to reduce or eliminate the possibility of significant pathology and to assist us with treatment recommendations. Testing in this context can be therapeutic as well as diagnostic. Claimants who are symptom magnifying or malingering generally have a paucity of objective clinical findings. One should interpret diagnostic evaluation cautiously as, for example, imaging studies of the spine conducted in asymptomatic individuals showed that many subjects had abnormal (positive) findings without complaints of spinal pain.[55–61] Positive findings on imaging studies must be correlated clinically to confirm that they are not just coincidental findings,[55,56,60] as they may lead to unnecessary interventional procedures that contribute to iatrogenic impairment and disability.

Malingerers frequently attempt to continue prolonged use of passive modalities and, when they are involved in physical therapy or chiropractic care, the records may suggest submaximal effort, inconsistencies, or a lack of sustained progress. In those circumstances when a claimant repeatedly "fails" treatments or develops increased symptoms after treatment that should, at the very worst, have led to no benefit, one is obliged to reassess the treatment and carefully evaluate the claimant (and overall clinical situation) to see whether signs of malingering are present. Compliance with medications and with treatment (testing) recommendations is another factor to be concurrently evaluated.

Evidence of potential malingering based upon the history, physical examination, level of disability, test results, and treatment response should prompt the primary care physician to refer the claimant for a consultation in order to substantiate and develop this

impression. It is important to do so before one definitively concludes that malingering is present.

Return to Work

With the exception of patients who have very severe psychiatric or cognitive disorders, it is rare for someone to be incapacitated to the point where he or she cannot do at least full-time sedentary work. It is highly unlikely for someone with this degree of incapacity to not have some evidence of an abnormal anatomic or physiologic process on diagnostic tests or the physical examination. When a claimant states, in the absence of clinical findings, that because of an injury he or she cannot return to any form of restricted duty (workers' compensation), or claims disability that is markedly in excess of (and inconsistent with) clinical evidence of impairment, the primary physician's role is *not* to accept these statements as valid in the absence of any substantive supportive evidence, but instead to question whether this appears credible. Because the evaluation is in a medical context, the question to be addressed is whether there is any medical basis to prevent or restrict the individual from returning to work if he or she chose to do so. If not, the physician should not support the request for disability.

Chronic Pain Syndromes

Patients with chronic pain syndromes often have subjective complaints markedly disproportionate to objective findings. It is estimated that of claimants with low back pain, approximately 85% cannot be given a definitive diagnosis because of the weak association of symptoms, pathological changes, and imaging studies (p. 257).[54,62,63] "Chronic pain syndrome" is not a diagnosis but rather a descriptive term to indicate persistent complaints of pain, associated dysfunctional pain behaviors, self-limitations in activities of daily living, and associated global life disruption.[64] Nachemson[62] and Rudy et al.[63] emphasize, however, that this does not represent malingering. Chronic pain syndromes involve learned, conditioned pain behaviors and disability behaviors. They can be part of a somatoform process or reflect other primary psychological diagnoses, and often involve significant somatization.[9] Most often, the individual loses far more than he or she gains from the ongoing pain, associated disability, and life disruption. However, as is the case in claimants who are malingering, the evaluator may note many subjective complaints without objective findings, many emergency room visits with normal tests, complaints that the pain is constant or unbearable, total- or hemi-body pains, pain described in elaborate and often dramatized terms, pain complaints progressively getting worse despite no evidence of increasing pathology, and other dysfunctional behaviors including drug seeking despite poor analgesic response, pain worsening when the claimant is advised to return to work, negative diagnostic testing, etc.

Malingerers commonly have multiple subjective complaints without objective findings, or with findings that do not correlate with the subjective complaints. They may complain that their condition is progressively worsening and that no treatment is helping; the literature suggests[10,65] that individuals who are malingering rarely seek second opinions or extensive diagnostic testing, because having these studies is not in the interest of supporting their malingering claim.

Herein is one of the characteristics distinguishing malingerers from claimants who have chronic pain syndromes or somatoform disorders. The latter, too, may have subjective complaints disproportionate to objective findings. However, they often insist on further testing such as magnetic resonance imaging (MRI), computerized tomography scan, and electromyogram/NCV (nerve conduction velocity), and often believe that more diagnostic evaluation and interventional procedures can resolve their problem or at least better clarify the etiology. As noted previously, unless the potential benefits outweigh the risks and it is likely that the testing results would have an impact on the recommended treatment, the clinician should avoid the temptation for further testing. This is especially the case in claimants with chronic pain, as false-positive test results will only serve to reinforce their dysfunctional beliefs and fear-avoidance behaviors. The cautious clinician must be adept at distinguishing legitimate symptoms from somatization, unconscious mechanisms for symptom embellishment from malingering, and findings that are clinically significant from coincidental findings.[9]

Identification of Malingering

When all of the following are present, malingering can be considered as clearly present (see Cunnien[66]):

1. Confirmation that psychological or physical symptoms are under voluntary control as manifested by one or more indicators:
   - Gross symptom production that is inconsistent with physiological or anatomical mechanisms
   - Unambiguous psychometric evidence of malingering or strong corroborative evidence of malingering

- Direct observation of illness production
- Discovery of paraphernalia or substances explaining the deliberate production of physical symptoms

2. At least three of the following criteria:
   - Irregular employment or job dissatisfaction
   - Prior claims for injuries
   - Capacity for recreation, but not work
   - No nightmares or, if nightmares, exact repetitions of the trauma (in claims of post-traumatic stress disorder [PTSD]);
   - Antisocial personality traits
   - Evasiveness or contradictions
   - Non-cooperation in the evaluation, or in treatment
3. Understandable motive to malinger and illness production occurring in response to:
   - Pursuit of financial gain, shelter, or drugs, or
   - Avoidance of work, military duty, prosecution, or legal consequences
4. Inability of another disorder, if present, to explain current symptoms

When malingering is identified in the course of the early management of an individual with an alleged injury or disability, it is the responsibility of the treating clinician to document all findings (especially those that support the diagnosis of malingering), state that the claimant has reached maximum medical improvement, and then *discharge* the claimant from care (so as to avoid reinforcing dysfunctional behaviors by continuing treatment that is clearly not indicated medically).

MALINGERING AND THE INDEPENDENT MEDICAL EXAMINER

Generally, cases referred for independent medical examinations (IMEs) are of five types:

1. Physical/physical disability claim. In these cases, the examinee is claiming a physical injury/trauma and resulting physical symptoms and impairment.
2. Mental/mental disability claim. The claimant alleges a mental injury that is producing emotional symptoms, such as in PTSD.
3. Physical/mental claim. Here the examinee is alleging that he or she suffered a physical injury/trauma that healed physically but left emotional symptoms (ie, depression or PTSD).
4. Mental/physical claim. The claimant alleges a mental trauma/injury, such as extreme job stress, that has caused physical symptoms such as a heart attack or chronic peptic ulcers.
5. Combined claim. Here the examinee is claiming that a physical and/or emotional injury/trauma has produced both physical and emotional symptoms.

It is helpful to know from the outset which type of claim is being presented, so that the proper elements of the IME can be appropriately planned. Claims of the mental/mental type are best directed to a psychiatrist or psychologist, who generally is more experienced at providing special testing procedures for psychiatric symptom malingering, such as the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), Rogers' Structured Interview of Reported Symptoms (SIRS),[67] or Miller's Forensic Analysis of Symptoms Test (M-FAST).[68]

As the effects of the landmark Daubert/Joiner/Kumho triad of case decisions increasingly cascade through our nation's federal and state courts, it is imperative that all physicians and other examiners realize that they must base their opinions on physical findings and diagnostic procedures with proven scientific reliability and validity, rather than upon beliefs and consensus opinions that may have been taught in their medical training but have not been proven valid. This triad of decisions is designed to eliminate expert witness testimony that is without demonstrated scientific basis or is backed only by "junk science." The result is a much higher bar than the former Frye standard, which simply required that hypotheses or procedures be "generally accepted in the field."

The Daubert/Joiner/Kumho triad has further allowed attorneys to challenge the admission of reports or testimony, regardless of the source, claiming lack of scientific basis without having to prove it. The complete burden or proof is shifted to the doctor, who must demonstrate the science behind the premises or procedures used to formulate his or her opinion. This requires collecting relevant scientific literature and being able to defend it. It is imperative to not ever lose a "Daubert challenge," as attorneys post this information, and the resultant loss of credibility will encourage future challenges to the admission of reports and expert witness testimony. As Cecil Reynolds[69], PhD, said: "Choose to use scientific methods. know your science, stick to your science and don't speculate. You'll beat the Daubert challenge every time."

Functional Capacity Evaluations

Once the medical evaluation is completed, the physician may decide to order a functional capacity evaluation (FCE) to more accurately define a person's capability to participate in work, in what capacity, and with what (if any) appropriate restrictions or limitations.[70,71] The usefulness of the FCE depends on the expertise of the evaluator more than the equipment being used. It is a comprehensive assessment that must be performed in a consistent and structured manner over several or more hours with the claimant instructed to give maximal effort, so that the physician can correlate the results of the FCE with his or her clinical examination. Individuals may test as being able to do heavy work on a good day when, in fact, they are not able to sustain that for 8 hours per day under variable work conditions. Therefore, it is imperative that the clinician have a clear understanding of the job description, taking into consideration variable factors of the work (working on uneven terrain, adverse weather conditions, whole-body vibration, the effects of medication on the sensorium, repetitive lifting, pushing/pulling, etc.). The physician requesting the FCE should become adept at interpreting the conclusions. The FCE is a measure of performance demonstrating what an individual is willing (not necessarily "able") to do at the time of testing and, therefore, needs to be interpreted cautiously. Any significant variability or inconsistency on the FCE must be explained. The physician and others interpreting the results of the FCE should not over-interpret the results of such reporting/assessment.[72] Nonetheless, when the results of the FCE are grossly divergent with what one would expect, or confirm inconsistencies or other less than credible findings from the clinical examination, the results may be consistent with malingering. If this is the conclusion, there should be documentation of the multiple findings that led to the conclusion.

Record Review

It is not uncommon for voluminous records to be sent for review prior to, or concurrent with, the clinical evaluation of a claimant being sent for an IME or an impairment evaluation. If one is asked to assess a causal relationship between a traumatic event and a resulting medical or psychiatric problem, it is desirable (but not always possible) that the evaluator obtains records to indicate the claimant's baseline functioning prior to the trauma/injury, as well as details about the mechanism of injury. In cases involving alleged brain injury, records from Emergency Medical Services, including emergency medical technicians and emergency room records, are critical. An individual may allege a serious brain injury with prolonged loss of consciousness, and yet the record review indicates no evidence of loss of consciousness or objective evidence of head trauma and a normal mental status at the initial evaluation. In general, the early records may be of more assistance than later treating physician reports. When possible, it may also be helpful to obtain past medical records to clarify whether the individual in question had similar health problems predating the trauma for which an assessment is being performed.

The Emergency Medical Services report, emergency department records, and Initial Work Injury Report/Application for Benefits (if available) generally list the date, time, and mechanism of injury, as well as the claimant's initial presenting complaints, physical examination, state of consciousness (including use of drugs or alcohol), and past medical history. The degree to which these are consistent, and subsequent treatment records are consistent (eg, if there are multiple treaters during similar time frames, one would generally anticipate similar findings on physical examinations), may be useful in determining to what degree the claimant's history is credible.

One should also assess whether the treating physicians' reports/records indicate appropriate treatment and the extent to which the claimant followed the recommended treatments and completed the diagnostic recommendations. Also of potential relevance are whether records reflect feigned weakness or symptomatology, multiple nonphysiologic complaints or findings (positive Waddell's), inflated statements of incapacity to the treating physician, noncompliance with recommendations to return to work, or evidence of drug misuse, abuse, addiction, or diversion.

Critical record review may assist the evaluator in assessing the individual's credibility. It may also be useful in determining the date at which maximum medical improvement was established.

Whether an individual being evaluated has already been granted disability may impact that person's willingness to attempt to return to work and also the illness behaviors/pain behaviors manifest during evaluations. The literature suggests[54] (pp. 166–168) that, once an individual is granted disability, the likelihood of returning to work is significantly reduced.

The interpretation of diagnostic studies can vary among specialties and among physicians within the

same specialty. This can reflect intrinsic problems with test reliability and validity as well as differential patterns of test interpretation based upon the specialty, and overall orientation (including plaintiff vs. defense orientation) of the reviewing physician. Radiographs and MRIs are noteworthy for their differential interpretation. The claimant's description of test results vs. what is identified in the chart, or upon direct review of the tests themselves, may also be of interest if widely divergent, as this may represent bias on the part of claimants (or their physicians) to inflate or minimize the significance of findings. Review of FCEs and the results of symptom validity testing or psychological testing performed are also integral to diagnostic test review, as this may assist in ascertaining whether the claimant provided a submaximal effort and to what extent results are consistent with concurrent or subsequent documentation of the claimant's level of function. Based upon the degree of consistency and effort, one can make inferential statements.

While strictly speaking *not* part of the written record review, surveillance tapes may be included in the medical record being reviewed, as they also can be used to support or refute claimant statements regarding the extent of functional limitations. The physician should review the actual tape, not just the transcript. Activities performed (or not performed) should be compared with claimant assertions of abilities and inabilities, as well as with the level of activity exhibited during (and after, if this information is available) the clinical examination. Inconsistencies in activities or behaviors may be a basis to question the claimant's credibility, which then may, in turn, support the determination that his or her symptoms are partially or wholly feigned. However, despite apparent inconsistencies, it is essential that the evaluator consider legitimate possibilities to explain noted discrepancies; only after ruling out legitimate possibilities should one consider the possibility of malingering.

While the aforementioned approach works well in the evaluation of those with musculoskeletal and other problems that would be expected to present with definitive physical, or diagnostic findings, certain medical and all psychiatric symptoms without (or with variable) objective findings are more difficult to assess with regards to malingering. Two prominent examples of these are post-traumatic headache (PTH) and the vague cognitive, somatic, psychological, and psychophysical complaints that are often attributed to mild (or minor) traumatic brain injury. A discussion of an approach to evaluating those diagnosed as having either of these disorders for potential malingering follows.

POST-TRAUMATIC HEADACHE

Few diagnoses in neurology are as contentious as PTH. The controversy begins with the observation that PTH is often seen as part of the postconcussion syndrome—a large number of symptoms and signs usually following mild traumatic brain injury.[73] The most common complaints are headaches, dizziness, fatigue, irritability, anxiety, insomnia, loss of concentration and memory, and noise sensitivity.[74] While some component of difficult-to-manage cases may be malingerers or frauds, or have compensation neurosis, most claimants nevertheless have genuine complaints, in part resembling depression or dissociative phenomena, generally not cured by a verdict or any recommended treatment.[75–78]

Headache associated with head trauma is considered either acute or chronic PTH. Chronic PTH, persisting for more than 8 weeks, occurs infrequently, often results in referral to a neurologist, and may persist for months or years. The severity of head injury may vary from minimal to severe and does not correlate with the duration or intensity of headache.[79] By the definition put forth by the International Headache Society, headaches must start within 2 weeks of the injury itself or within 2 weeks of the termination of post-traumatic amnesia. Among diagnostic criteria required are a loss of consciousness and 10 or more minutes of post-traumatic amnesia. Chronic PTH has no special features, but is symptomatically identical to either chronic tension-type headache or migraine without aura. This suggests that the same processes causing natural headaches, unassociated with intracranial derangement from head blows or jolts, generate PTH.[80]

Some schools of thought suggest that plausible mechanisms for chronic PTH exist with circumstantial support for the neurobiological legitimacy of PTH. Others suggest that chronic PTHs are most often a myth attributable in large measure to rebound or treatment-induced headaches, with neuropsychiatric disorders (epilepsy, major affective and anxiety disorders) showing increased comorbidity with migraine.[81]

Controversies aside, advocates of all sides accept a bona fide presentation of an initial isolated migraine or an increased frequency of previously existing migraine headaches subsequent to an injury.[82] Essentially, this is consistent with the belief that anyone may have a migraine attack occasionally without necessarily being a migraine patient. In the absence of trait markers specific

to migraine or its subtypes, the classification of migraine headache is guided by diagnostic criteria.[83] That PTH is a diagnostic challenge may be inferred from the extreme frequency of migraine headaches in the general population (affecting about 1 out of 9 people at some time in their life), thereby diluting the presentation.[84]

The clinical distinction between PTH and other headache subtypes is further obscured by the substantial degree of overlap in the symptoms, by the ways in which these headache subtypes evolve over time, and by the use of retrospective symptom histories to assign clinical diagnosis.[85,86] This distinction is further blurred when diagnostic suspicion and acumen is focused upon existing criteria for diagnosis of headache that may in themselves not be adequate in either primary headaches or PTH.[87] Responses to therapeutic intervention are not diagnostically reliable, because an undue lag in response may be contaminated by external events and the natural history of headaches.[88]

In the evaluation of the difficult-to-manage case with PTH, several approaches may be considered. PTH is probably not adequately explained by the medical model that follows criterion-derived diagnoses of headache syndromes. The decision to perform diagnostic tests or additional investigations should be tempered by a thorough understanding of the presentation. Following from this emerges the paramount importance of understanding the person with PTH. Examining the brain with ancillary testing or neuroimaging studies is not a suitable substitute for a thorough clinical assessment.

Symptoms of PTH are indistinguishable from primary headaches, and features are of unproven reliability in estimation of malingering potential. It may still be reasonable to consider headache as unrelated to trauma and raise a suspicion of secondary gain if:

- Trauma was trivial, unverifiable, or not to the head or neck.
- Complaints accumulate and increase in number and severity over time.
- Complaints are inconsistent over time.
- Medications and treatments exacerbate symptoms.
- Illness behavior precedes the trauma.
- Pain-focused behavior correlates with intensity of apparent scrutiny.

Lastly, clinical responsibility for the claimant continues to exist after a surrounding medicolegal and adversarial circumstance has been concluded. The less severe the brain injury, the greater the importance of financial incentives in determining symptoms and disability. Evidence suggests that not all whose symptoms persist are simply "neurotic." Efforts should focus on thorough evaluation, reassurance, education, support, and monitoring of progress.[89]

Neuropsychological Evaluation of Malingering

Individuals alleging cognitive impairment from head injury or other causes should have a careful neurological evaluation and assessment by a neuropsychologist to determine cognitive ability and possible areas of dysfunction. The neuropsychological testing should include subscales designed to evaluate malingering.[90] Persons who malinger almost never accept psychiatric referral, and the success of such consultation is usually minimal. However, if there is doubt as to the presence of an underlying psychiatric illness, then a psychiatric or psychological consultation is also indicated.[3] In the referral letter, the clinician should indicate questions to be addressed by the consultant.

The physician suspecting malingering should consider some of the following points:

1. Assess whether a Minnesota Personality Inventory has been completed. This test contains scales and indices to detect malingering, response bias, and the presence of somatoform disorders.
2. Look in the records for subtle physician comments, such as "supratentorial findings," "functional overlay," and multiple subjective complaints without objective findings, etc. These may suggest that other physicians suspected symptom exaggeration. However, as noted above, most symptom exaggeration does not meet the threshold for malingering.
3. Look for evidence of drug-seeking behavior. Numerous emergency room visits for opioid medication, notations of lost narcotic prescriptions, multiple physicians writing for opioid prescriptions, etc., does not necessarily suggest malingering. However, some records may suggest drug abuse, diversion, and symptom embellishment to obtain opioid analgesics, which may suggest malingering.
4. Do not allow subjective suspicions of malingering to cloud clinical judgment. The successful malingerer is adept at lying and deception. To label someone as a malingerer is to accuse him

or her of fraud and dishonesty. The clinician must make this accusation very carefully based upon criteria noted above.

5. Surveillance video may be a means to confirm (or increase the level of probability of) dishonest behavior and fraudulent performance, etc. However, the video must be carefully reviewed, and one should consider and rule out alternative explanations to explain inconsistencies prior to concluding malingering occurred.
6. Consider collateral sources such as medical and employment records to evaluate inconsistencies. Prior employment and academic records can be indicative of patterns of dishonesty when, for example, individuals claim to have achieved high academic accomplishments and their past records suggest otherwise. However, remember that family members and/or employers might have their own biases.
7. Diagnosing malingering is difficult; frequently malingering can be ruled out, or possible malingering or probable malingering can be suspected, but definite malingering may not be able to be diagnosed.

MALINGERING AND OTHER THREATS TO VALIDITY IN NEUROPSYCHOLOGICAL ASSESSMENT FOLLOWING WHIPLASH OR HEAD INJURY WHERE THERE ARE CLAIMS OF COGNITIVE OR PSYCHOLOGICAL IMPAIRMENT

The Validity of Neuropsychological Findings

While the data collected during the course of a neuropsychological evaluation are "objective," the neuropsychologist's ability to make an accurate diagnosis is predicated upon having data that are reliable and valid.[†] Neuropsychologists select neuropsychological tests and batteries that maximize reliability (minimize measurement error) and validity (have been shown to be accurate measures of brain functions). However, this care does not ensure that the *test results* will be valid. Several variables can threaten the validity of neuropsychological test findings, including: (1) physical factors such as musculoskeletal injuries (eg, peripheral neuropathies), (2) pain, (3) fatigue, (4) medication effects, (5) psychological and personality issues such as anxiety and/or depression, and (6) malingering and/or symptoms magnification. While any of these factors can result in invalid data, we will focus on issues of effort and malingering and strategies to assess effort and motivation.

Malingering on neuropsychological assessment can take many different forms. Claimants may exaggerate the initial severity of the injury (eg, length of unconsciousness or retrograde amnesia or post-traumatic amnesia) or the degree of neuropsychological impairment. Claimants may respond to test items randomly, thereby performing at near-chance levels. They may deliberately choose what they know to be an incorrect response. Some claimants delay their response, thereby resulting in an impaired performance on timed measures. Finally, claimants may consciously decide to not fully attend to information, stimuli, or test instructions, thereby resulting in an impaired performance.

The suspected incidence of true cognitive malingering varies rather dramatically, from a rate of 1%[12] to more than 50%.[13] In a survey of members of the American Board of Clinical Neuropsychology,[39] respondents suspected probable malingering in 29% of personal injury cases presented, 30% of disability cases, 19% of criminal cases, and 8% of medical cases. The incidence of suspected malingering in the mild head-injury population was 39%. Binder et al.[95] reported the incidence of suspected malingering to be 27% in a population of patients with mild head injury. Pankratz and Binder's[96] review of research regarding the incidence of malingering found that "20–60% of the patients with mild head injury and financial incentives had improbably poor performances." Slick et al.[97] surveyed "expert" neuropsychologists and found that the majority estimated that "at least 10% of the litigants they evaluated in the last year were definitely malingering" (p. 465).

Why is there such a discrepancy among studies that estimate the incidence of malingering? First, there is no universally accepted set of diagnostic criteria for malingering. Second, various studies use different methods and tests to measure malingering. Moreover, different researchers use different cutoff scores for the same malingering test. Third, some researchers use a claimant population to comprise the malingering group, while others use simulated malingerers. It is yet to be determined whether the pattern of performance of simulated malingerers is similar to true malingerers. Finally, the base rates, nature of subjects, and sources of referrals differ from one study to the next. For example, malingerers in one study might be claimants primarily referred by attorneys, while another study might exam-

[†]Classical test theory, test construction, and the reliability and validity of specific neuropsychological instruments are well beyond the scope of this article. Readers who are interested in test design and theory are referred to Spreen and Strauss,[91] Lezak,[92] Mitrushina et al.,[93] and Franzen[94] for an exhaustive review of these issues.

ine claimants referred by other medical practitioners. It can be very difficult to establish a threshold at which exaggeration or response bias reaches the proportion of malingering. Table 2 offers a useful operational definition of malingering and proposed criteria for diagnosing it, modified from the pioneering work of Slick et al.[98] and Larrabee.[36]

Although specific "malingering tests" have been developed, it is clear that there is no one litmus test of malingering. Ultimately, the diagnosis of brain damage or malingering is a clinical decision that requires the neuropsychologist to integrate data from a variety of sources, including: (1) clinical observation, (2) unusual patterns or inconsistencies in test performance, and (3) the claimant's score on measures tests designed to assess malingering as well as measures that have been derived from tests originally designed to assess brain functioning, but also shown to be sensitive to the effects of malingering.

There are several approaches to the detection of malingering within the context of a neuropsychological evaluation. Rogers et al.[99] have provided a thorough discussion of seven major malingering detection strategies into which most published procedures or measures can be classified:

1. *The floor effect strategy* holds that individuals claiming impairment should not score in ranges below those on which even grossly impaired persons have been shown to succeed.
2. *The performance curve strategy* presupposes that malingerers will not take into account differences in item difficulty in deciding which items to fail. Therefore, it is posited that feigners can be detected by a comparison of their performance curve of passed and failed easy-to-difficult items.
3. *The magnitude of error strategy* involves the examination of the pattern of wrong answers/responses either for "near-misses" or approximate answers, such as those seen in Ganser's syndrome or grossly wrong answers.
4. *The symptom validity testing strategy* detects malingering by giving a large number of trials of choices between two alternatives and looking for below-chance performances that exceed the binomial probability. It is important to note that the *absolute detection of malingering requires a performance at below-chance levels.*
5. *The atypical presentation strategy* looks for marked variation in test performances on two or more tests of the same ability or repeated administrations of the same test.
6. *The violation of learning principles strategy* utilizes an analysis of performance on learning/memory tests to detect violations of normal recency and primacy effects.
7. *The psychological sequelae strategy* argues that neurological and neuropsychological disorders or deficits are frequently accompanied by known psychiatric symptom complaints. Research on this strategy is in its infancy and not yet ready for clinical application.

Many specific tests of malingering have been described in detail in the literature (see Spreen and Strauss,[91] Lezak,[92] and Franzen[94] for a thorough review of these measures). Some of the more commonly used malingering tests were also reviewed in the *Journal of Forensic Neuropsychology* (Volume 3, Numbers 1–2, 2002). Although a complete review of malingering tests used for the detection of response bias in claimants with suspected brain injury is well beyond the scope of this article, here we review some of the more widely used and generally accepted measures of malingering, particularly those that have found some degree of acceptance, as indicated by their incorporation in clinical practice.

The Rey Fifteen-Item Memory Test is one of the most commonly used tests of memory malingering in clinical practice. In a review of the literature, Frederick conceded that the Rey Fifteen-Item Memory Test might itself not meet Daubert standards, but he recommended including it as one measure of malingering. Several other authors have acknowledged the usefulness of the test as a measure of malingering but argued against it as a sole measure of motivation.[100,101]

An approach known as forced-choice procedures was originally developed by Pankratz[102] and further developed and refined by Hiscock and Hiscock.[103] These tests possess a very important characteristic not found in other classes of malingering measures. That unique characteristic is the ability to determine *conscious malingering* and submaximal effort when the examinee's number of errors not only exceeds the cutoff score, but also falls significantly below 50% correct (a below-chance level). In a forced-choice paradigm, the claimant is presented with a stimulus, such as a number string on a card. After a brief delay, the claimant is presented with a second card that includes both the number string and foil. Although the test is presented as a memory test, all items actually have a 50%

Table 2. Proposed Operational Definition and Criteria for Possible, Probable, and Definite Malingering of Chronic Pain, Neurocognitive, Neurological, and Psychiatric Symptoms

Used by permission from Slick et al.[98] and adapted

Definition

Malingering is the gross volitional exaggeration or fabrication of symptoms/dysfunction for the purpose of obtaining substantial material gain, or avoiding or escaping formal duty or responsibility. Substantial material gain includes money, goods, or services of nontrivial value (eg, financial compensation for personal injury) or access to controlled substances. Formal duties are actions that people are legally obligated to perform (eg, prison, military, or public service, or child support payments or other financial obligations). Formal responsibilities are those that involve work, accountability, or liability in legal proceedings (eg, competency to stand trial).

Diagnostic categories for malingering

Definite malingering

This is indicated by the presence of clear and compelling evidence of volitional exaggeration or fabrication of symptoms/dysfunction and the absence of plausible alternative explanations. The specific diagnostic criteria necessary for Definite Malingering are listed below:

1. Presence of substantial external incentive (Criterion A).
2. Definite negative response bias (Criterion B1).
3. Behaviors meeting necessary criteria from group B are not fully accounted for by Psychiatric, Neurological, or Developmental Factors (Criterion D).

Probable malingering or noncredible symptomatic presentation

This is indicated by the presence of evidence strongly suggesting volitional exaggeration or fabrication of symptoms/dysfunction and the absence of plausible alternative explanations. The specific diagnostic criteria necessary for Probable Malingering are listed below:

1. Presence of a substantial external incentive (Criterion A).
2. Two or more types of evidence from testing, excluding definite negative response bias (two or more Criteria B2–B6).

   or

   One type of evidence from testing, excluding definite negative response bias, and one or more types of evidence from Self-Report (at least one of Criteria B2–B6 and one or more of Criteria C1–C5).
3. Behaviors meeting necessary criteria from groups B and C are not fully accounted for by Psychiatric, Neurological, or Developmental Factors (Criterion D).

Possible malingering or questionable symptomatic presentation

This is indicated by the presence of evidence suggesting volitional exaggeration or fabrication of symptoms/dysfunction and the absence of plausible alternative explanations. Alternatively, possible malingering is indicated by the presence of criteria necessary for Definite or Probable Malingering except that other primary etiologies cannot be ruled out. The specific diagnostic criteria for Possible Malingering are listed below:

1. Presence of a substantial external incentive (Criterion A).
2. Evidence from Self-Report (one or more of Criteria C1–C5).
3. Behaviors meeting necessary criteria from group C are not fully accounted for by Psychiatric, Neurological, or Developmental Factors (Criterion D).

   OR

   Criteria for Definite or Probable Malingering are met except for Criterion D (ie, primary psychiatric, neurological, or developmental etiologies cannot be ruled out). In such cases, the alternate etiologies that cannot be ruled out should be specified.

Explanation of criteria

Criterion A: Presence of a substantial external incentive

At least one clearly identifiable and substantial external incentive for exaggeration or fabrication of symptoms (see definition) is present at the time of examination (eg, personal injury settlement, disability pension, evasion of criminal prosecution, release from military service, etc.).

Criterion B: Evidence from testing

Evidence of exaggeration or fabrication of symptoms/dysfunction on medical, psychological, and/or neuropsychological tests, as demonstrated by at least one of the following.

1. *Definite negative response bias.* Statistically significant below-chance performance on one or more forced-choice measures of cognitive function, or one or more scores on well-validated malingering measures or indices with acceptable levels of sensitivity and very high (greater than 0.95) specificity in populations appropriate to the examinee.
2. *Probable response bias.* Performance on one or more well-validated psychometric tests, or indices designed to measure exaggeration or fabrication of symptoms/deficits, is consistent with feigning.
3. Discrepancy between test data and known patterns of pain, brain function, or neurological functioning. A pattern of neuropsychological, functional capacity evaluation, or nonorganic test performance that is markedly discrepant from currently accepted models of normal and abnormal central nervous system (CNS) function. The discrepancy must be consistent with an attempt to exaggerate or fabricate symptoms/dysfunction.
4. Marked *discrepancy between test data and observed behavior.* Performances on two or more tests within the same domain are discrepant with the observed level of function in a way that suggests exaggeration or fabrication of dysfunction.
5. *Discrepancy between test data and reliable collateral reports.* Performances on two or more tests/indices within a domain are discrepant with day-to-day level of function described by at least one reliable collateral informant in a way that suggests exaggeration or fabrication of dysfunction. Of course, it is important to recognize that there is often not a perfect correspondence between performance on neuropsychological testing and day-to-day functioning.
6. Discrepancy between test data and documented background or injury history (Biological Severity Indexing). Improbably poor performance on two or more standardized tests of function or symptoms within a specific domain that is inconsistent with the documented neurological or psychiatric insult severity history.

Criterion C: Evidence from Self-Report

The following behaviors are indicators of possible malingering of symptoms/deficits, but their presence is not sufficient for the diagnosis. However, presence of one or more of these criteria provides additional evidence in support of a diagnosis of malingering. These criteria involve significant inconsistencies or discrepancies in the claimant's self-reported symptoms that suggest a deliberate attempt to exaggerate or fabricate symptoms/deficits.

1. *Self-reported history is discrepant with documented history.* Reported history is markedly discrepant with documented medical or psychosocial history and suggests attempts to exaggerate injury severity or deny pre-existing symptoms/dysfunction.

Table 2. ***Cont.***

2. Self-reported symptoms are discrepant with known patterns of brain or neurological functioning or psychiatric syndrome symptoms. Reported or endorsed symptoms are improbable in number, pattern, or severity, or markedly inconsistent with expectations for the type or severity of documented injury or pathology.
3. *Self-reported symptoms are discrepant with behavioral observations.* Reported symptoms are markedly inconsistent with observed behavior.
4. *Self-reported symptoms are discrepant with information obtained from collateral informants.* Reported symptoms, history, or observed behavior is inconsistent with information obtained from other informants judged to be adequately reliable. The discrepancy must be consistent with an attempt to exaggerate injury severity or deny pre-existing dysfunction.
5. *Evidence of exaggerated or fabricated psychological dysfunction.* Self-reported symptoms of psychological dysfunction are substantially contradicted by behavioral observation and/or reliable collateral information. Well-validated validity measures (eg, SIRS or M-FAST Screener), or indices on self-report measures of psychological adjustment (eg, MMPI-2), are strongly suggestive of exaggerated or fabricated distress or dysfunction.

Criterion D: Behaviors meeting necessary criteria from group B or C are not fully accounted for by Psychiatric, Neurological, or Developmental Factors
Behaviors meeting necessary criteria from groups B and C are the product of an informed, rational, and volitional effort aimed at least in part toward acquiring or achieving external incentives as defined in Criteria A. As such, behaviors meeting criterion from group B or C cannot be fully accounted for by psychiatric, developmental, or neurological disorders that result in significantly diminished capacity to appreciate laws or mores against malingering, or inability to conform behavior to such standards (eg, psychological need to "play the sick role," or in response to command hallucinations). Of course, the effect of other mitigating factors (eg, pain, fatigue medication effects, etc.) must also be considered.

MMPI, Minnesota Multiphasic Personality Inventory; M-FAST, Miller's Forensic Analysis of Symptoms Test; SIRS, Rogers' Structured Interview of Reported Symptoms.

probability of being correct by chance alone. Thus, it is possible to construct a confidence interval around a binomial probability curve indicating the number of correct responses by chance. One would therefore expect a 50% correct response rate if the claimant had no memory and were merely guessing. Scores significantly below chance level suggests that the claimant purposefully chose the wrong response. Forced-choice tests were found to be sensitive to malingering when claimants' scores were significantly below chance level. However, many of these studies resulted in a large number of false negatives, raising concerns about the sensitivity of the test to attempts to malinger. As a result, several studies recommend cutoff scores well above chance in an attempt to maximize both sensitivity and specificity. Other forced-choice tests that also include higher empirically derived cutoff scores comprise: the Victoria Symptom Validity Test,[104] the Portland Digit Recognition Test, the Test of Memory Malingering (TOMM), the CARB,[105] the Word Memory Test, the Validity Indicatory Profile, and Warrington's Recognition Memory Test. In a recent review of various malingering tests, Lynch[106] found that the Victoria Symptom Validity Test, Portland Digit Recognition Test, TOMM, CARB, Word Memory Test, and the Validity Indicatory Profile have all "withstood the scrutiny of cross-validation research" (p. 277) and recommended including two or more of these tests for the assessment of effort in neuropsychological testing.

There are problems inherent in relying solely on individual malingering tests to assess motivation. First, it is quite possible that a claimant who seeks to malinger will be wise to the test and realize its intent. Moreover, it is well-known that attorneys will sometimes coach their clients[107] and alert them to specific malingering tests. Moreover, it is conceivable that a claimant could produce maximum effort on a malingering measure while not performing to the best of his or her ability on other measures in the battery. Alternatively, it is conceivable that a claimant could do poorly on a malingering measure for some reason but be quite motivated throughout the rest of the battery. Because of the problems with over-reliance on individual malingering tests, some authors have sought to identify patterns indicative of suboptimal performance or malingering across tests already included in a standard neuropsychological battery as measures of brain functioning. By identifying patterns of poor performance that are suggestive of malingering, the neuropsychologist has a mechanism to detect malingering across the entire spectrum of the evaluation.

Mittenberg et al.[108] developed a discriminant function using seven subtests from the revised Wechsler Adult Intelligence Scale (WAIS-R) that correctly identified 79% of injured patients from volunteer malingerers. Mittenberg et al.[109] extended the discriminant function equation to the newer WAIS-III. Several researchers[110–112] found that a remarkably poor score on the Digit Span Subtest of the WAIS-R (generally considered to be a measure of concentration) is atypical and often associated with malingering. Mittenberg et al.[113] found that Digit Span scores that are substantially lower than Vocabulary scores may be indicative of response bias. The Wisconsin Card Sorting Task is considered to be a

measure of abstract reasoning and set-shifting. Bernard et al.[114] found evidence for a pattern of suspect performance, as simulated malingerers did more poorly on obvious vs. subtle tasks than people with documented brain damage. The authors reported 58–100% sensitivity and 92–100% specificity depending on patient population and specific measures considered. Several authors have also attempted to identify patterns of performance that appear to reflect suboptimal effort on the Halstead-Reitan Battery, which is the most widely used and researched battery for the neuropsychological assessment of central nervous system impairment. Using simulated malingerers, Goebel[115] was able to achieve a 94.4% hit rate of brain-injured vs. nonimpaired patients. Trueblood and Schmidt[25] and Mittenberg et al.[116] studied the scores of simulated malingerers vs. patients on several of the Halstead-Reitan neuropsychological test measures. Their findings were consistent with previous studies, indicating that patients who were malingering performed more poorly than head trauma patients on several measures.

The MMPI and MMPI-2 have been used for decades to assess response consistency, effort, defensiveness, faking good, and faking bad (see Butcher et al.[117] and Greene[118]). In addition to the traditional validity scales including the F scale, Fb scale, and F-K scales, many researchers have developed indices to detect malingering. The Variable Response Inconsistency scale consists of 67 pairs of items, with similar or opposite content, that are scored for inconsistency. The True Response Inconsistency scale assesses response sets by detecting all true or false answering. It should be noted, however, that these scales measure consistency of response set, and are not measures of malingering. The F and Fb scales are composed of unusual or atypical items. An unusually high score on F or Fb suggests the possibility of "faking bad" or exaggerating one's psychological problems. The Fp scale includes 27 items that were not frequently endorsed by the normative sample or inpatient psychiatric patients. The F-K index has been shown to be indicative of malingering. Finally, comparison of obvious items vs. subtle items can be a useful indicator, because claimants who are malingering may endorse a very high number of obvious items that have high face validity, but fail to ignore more subtle items. Lees-Haley[119] found that the F scale and F-K index were able to discriminate between malingering and nonmalingering personal injury claimants. This study was particularly relevant in that the personal injury claimants were not simulators, but claimants who were found to be malingering on surveillance video, were found to be working under a different name, or had obvious discrepancies between their self-report and observation of behavior. Rogers et al.[17] reported on a meta-analysis of 15 studies assessing malingering on the MMPI-2. They found strong effect sizes for F, F-K, and Fb, and in the Obvious vs. Subtle scales. However, Greiffenstein et al.[120] found that the F scale was only marginally helpful in distinguishing between brain-injury patients and presumed malingerers. The authors suggest that some malingerers may malinger specifically on neurocognitive measures, but not on measures of psychopathology under the assumption that it may not be affected by brain injury. Lees-Haley et al.[121] reviewed the literature on the MMPI and MMPI-2 in a forensic context. They make the point that the MMPI-2 is not an indicator of cognitive exaggeration, but does shed light on the likelihood of exaggerating psychological or emotional issues.

Lees-Haley et al.[122] developed the Fake-Bad Scale (FBS) specifically to assess malingering in cases of personal injury litigation. Millis and Kler[100] compared 20 mild head-injury litigants to 20 outpatients with moderate and severe brain injury. They found that the FBS had the best discriminant validity of the validity scales. Tsushima and Tsushima[123] found that the FBS was the only validity scale that discriminated between personal injury litigants and a general clinical population. Larrabee[124] and Slick et al.[125] found elevations on the FBS for mild head-injury litigants who scored poorly on forced-choice measures. Dearth et al.[126] found moderate specificity and sensitivity for the FBS for head-injury claimants and analog malingerers. (See Lees-Haley et al.,[121] Larrabee,[36,37] and Berry and Butcher[127] for a thorough review of MMPI-2 malingering scales in a brain-jury population.)

APPLICATION OF NEUROPSYCHOLOGICAL METHODOLOGY AND ASSESSMENT PROCEDURES IN THE ASSESSMENT OF EFFORT AND MALINGERING IN A PAIN POPULATION

Just as neuropsychological researchers took the lead in developing empirical measures for detecting the malingering of brain dysfunction over the past two decades, more recently they have placed neuropsychology at the forefront of scientific research regarding the detection of the malingering of chronic pain-related disability. This new research has advanced our knowledge on the prevalence rates and detection of the malingering of chronic pain and its behavioral, emotional, and cogni-

tive sequelae. Better research designs and utilization of more appropriate test operating characteristics statistical methods[128] have dramatically raised earlier pain malingering prevalence rate estimates and have revised the erroneous test efficacy conclusions of earlier researchers.[33] The recent use of analog (simulator) malingerer, known-group, and positive predictive power value research designs (emphasizing high test specificity) has increased detection accuracy and protected against false-positive diagnostic errors that could harm legitimate chronic pain patients/claimants.[128]

As has been true in earlier malingered neurocognitive dysfunction research, the most relevant scientific indices for determination of the malingering of pain-related disability are sensitivity, specificity, positive predictive power, and negative predictive power.[129] Sensitivity and specificity are test-operating characteristics accuracy measures that are dependent on the decision rule or cutoff score examined. Predictive power is a measure of the confidence in the accurate meaning of a test result and is dependent on the base rate of the target condition (ie, malingering of chronic pain-related disability) in a given population, as well as the test's sensitivity and specificity.[130] The important concept is that even tests of modest sensitivity can very accurately detect malingering, so long as studies demonstrate very high specificity (a very low false-positive rate) and that scores falling outside of the cutoff are in the range found for experimental/simulator malingerers and known probable-to-definite malingerer groups.[128]

Currently available research utilizing better designs and test operating characteristics statistics has demonstrated the efficacy of malingering detection research for validly detecting the malingering or gross exaggeration of pain-related disability. Many are quick and simple screening tests that can be easily adopted by medical office staff or functional capacity evaluators, in order to determine the likelihood of a noncredible symptomatic presentation that would signal the need to refer the examinee to a neuropsychologist for a more thorough examination for probable malingering. The Modified Somatic Perception Questionnaire[131] has been shown to correctly identify 67% of malingerers (sensitivity) with a false-positive rate of 1% (specificity = 99%). It is very quick and easy to administer and score, and can be used without any cost. Several FCE measures have recently been shown to have great value in detecting malingering and submaximal effort utilizing test operating characteristics statistical methods. JAMAR Hand Dynomometer (J. A. Patterson Corp., Jackson, I, U.S.A.) grip strength testing[129,132,133] produces several helpful scores, some of which correctly detect up to 60% of malingerers (sensitivity) with no false-positive errors (specificity = 100%). Studies of elbow flexion and trunk extension measures[128,134–137] have shown strong sensitivities of 50–100%, with no false positives (specificity = 100%). Adoption of giving one self-report and one performance-based screening measure for the detection of the malingering of pain-related disability to every examinee is both inexpensive and highly recommended.

When a more comprehensive assessment of motivation and effort is required, the claimant should be referred to a neuropsychologist or clinical psychologist. Research has demonstrated that several of the symptom validity tests described above that were originally developed to assess malingering in brain injury are also valid measures of malingering or gross exaggeration of pain-related disability. When a more comprehensive assessment of malingering is undertaken by the clinical neuropsychologist, we recommend utilizing either the malingering definition offered in this article, which was modified from the work of Slick et al.,[98] or that of Bianchini et al.[128]

Etherton et al.[137] have demonstrated that moderate-to-severe laboratory-induced pain produced by the Cold Presser Test does not affect TOMM scores. Scores were indistinguishable from those validly produced without any pain by the control group. The TOMM score showed 100% specificity, with no controls or induced-pain subjects falling below the cutoff score in either the Trial 2 or Retention Conditions. A total of 80% to 85% of the experimental malingerers/simulators were correctly identified, and half of them scored at below-chance (below 50%) levels. The CARB has also been successfully validated on chronic pain patients,[38,138] including those suffering fibromyalgia and rheumatoid arthritis.

The Medical Symptom Validity Test[139] is a shortened version of its parent, the Word Memory Test,[140] which appears to be one of the most sensitive tests for detecting cognitive symptom malingering currently available. Both tests can be individually administered, or computer administered and scored. Both have been validated in chronic pain patients and in individuals of various intellectual levels.

The FBS has been shown to successfully identify the malingering of somatic symptoms (including chronic pain), psychiatric symptoms, and PTSD in litigating and benefit-seeking claimants. FBS scores of 30 or higher are not seen in nonlitigating pain patients. Studies[35,131] have

shown 100% specificity (no false positives) for scores above 29.

CONCLUSIONS

Research in the area of malingering has served to highlight the complexity of the problem. There continues to be a lack of agreement regarding the definition of malingering. Moreover, because claimants who malinger rarely acknowledge it, we as clinicians are forced to make inferences regarding the claimant's supposed motivation. Reitan and Wolfson[141] argue, "Many plaintiffs may not even realize that they are not putting forth their best possible effort when taking the tests" (p. 574). Moreover, several factors apart from outright malingering (psychological factors, pain, fatigue, medication effects, etc.) can result in aberrant scores in neuropsychological testing.

There is also some disagreement in the literature as to whether malingering is a unitary concept, or whether there is value in identifying types and/or degrees or malingering. Hartlage[142] makes the point that "most empirical approaches to the topic consider malingering as a dichotomous phenomenon . . . whereas in the world of the forensic neuropsychologist, the phenomenon is more likely to represent a continuum" (p. 240). Rogers[3] argues for "gradations of malingering and defensiveness." These include (p. 13):

Unreliability

1. Self-report with limited reliability: The patient answers most inquiries with a fair degree of accuracy, but volunteers little or nothing and may distort or evade in circumscribed topics.
2. Self-report without reliability: The patient, through guardedness, exaggeration, or denial of symptoms, convinces the clinician that his or her responses are inaccurate. Such cases may be suspected of malingering or defensiveness, although the patient's intent cannot be unequivocally established.

Malingering

1. Mild malingering: There is unequivocal evidence that the patient is attempting to malinger, primarily through exaggeration. The degree of distortion is minimal and plays only a minor role in differential diagnosis.
2. Moderate malingering: The patient, through either exaggeration or fabrication, attempts to present himself or herself as considerably more disturbed than is the case. These distortions may be limited to either a few critical symptoms (eg, the fabrication of command hallucinations) or represent an array or lesser distortions.
3. Severe malingering: The patient is extreme in his or her fabrication of symptoms to the point that the presentation is fantastic or preposterous.

Defensiveness

1. Mild defensiveness: There is unequivocal evidence that the patient is attempting to minimize the severity, but not the presence, of his or her psychological problems. These distortions are minimal in degree and of secondary importance in establishing the differential diagnosis.
2. Moderate defensiveness: The patient minimizes or denies substantial psychological impairment. This defensiveness may be limited to either a few critical symptoms (eg, pedophilic interests) or represent lesser distortions across an array of symptomology.
3. Severe defensiveness: The patient denies the existence of any psychological problems or symptoms. This categorical denial includes common foibles and minor emotional difficulties that most healthy individuals have experienced and would acknowledge.

Hall and Pritchard[143] (p. 14) also described levels of deception:

Negligible: No evidence of intentional distortion. Patients' responses indicate an honest response style.

Minimal: Honest reporting of symptoms with some exaggeration and/or minimization of target responses.

Mild: Exaggeration and/or minimization of several critical target responses.

Moderate: Exaggeration and/or minimization of several critical symptoms. Also, fabrication of denial of several critical target responses.

Moderate to Severe: Exaggeration and/or minimization of numerous critical symptoms. Also, fabrication and/or denial of a wide range of target responses.

Extreme: Faked or denied behaviors observed with absolutely no basis in reality.

Slick et al.[98] also presented a model based on convergence of multiple sources of information with incremental degree of certainty regarding brain injury vs. malingering. The patient's performance is classified as definite, probable, or possible malingering. Alternatively, Reynolds[144] argues against degrees of malingering.

In addition to differing opinions regarding the level of exaggeration required to reach a critical level for malingering, some authors have attempted to develop quantitatively different categories of malingering that also appear to imply varying degrees of intentional misrepresentation. Miller[68] describes four primary categories of malingering: fabrication (a claimant with no impairment or symptoms fraudulently reports that he or she does); exaggeration (a claimant with symptoms or impairment caused by the injury represents them to be worse than they are); extension (a claimant with symptoms or impairment from an injury falsely reports that they have continued unabated when in fact they have significantly improved or resolved); and misattribution (a claimant with symptoms or impairment that may have preceded or postdated the accident and are unrelated to it fraudulently attributes them to the injury).

It is likely that we will be forced to acknowledge that there is no test, nor is there likely to be a test, that is 100% accurate in its ability to identify each case of malingering vs. honest effort. Thus, we will need to establish cutting scores, recognizing that some honest claimants may be labeled as malingerers while some malingerers may be mistakenly identified as honest responders. As Millis and Volinsky[145] state, no test in isolation can

> *"prove" the diagnosis of malingering, brain dysfunction, or any disorder. Tests can only provide evidence in support of various diagnoses. Even then, the test result must be combined with prior information or knowledge before it can be interpreted meaningfully. Although high diagnostic sensitivity and specificity are desirable properties for a test to possess, these parameters alone cannot answer the fundamental diagnostic question, namely, "Given a positive test score, what is the probability that the patient has this disorder?" (pp. 817–818).*

As Gerson[146] stated so eloquently, "Although the threshold for suspicion in malingering should be low on all settings, the threshold for its diagnosis should be high, particularly in view of potential or judicial impact in forensic cases . . ." (p. 60).

Recently, some authors have suggested guidelines for inferring malingering in a neuropsychological profile. Iverson and Binder,[147] referring to Slick et al.,[98] review several steps and inferences in the diagnostic process. First, there must be "clear and compelling evidence of exaggeration or fabrication of cognitive impairment." Second, "there must be an absence of probable alternative explanations for this behavior." Thus, the criteria "allow the researcher or clinician to express a degree of confidence in diagnosis based on how much supporting evidence for the diagnosis is present . . . To diagnose malingering, the clinician must infer that the negative response bias was designed to achieve some identifiable external incentive" (p. 831).

What recommendations can be made to help the clinician identify and recognize threats to the validity of neuropsychological testing? First, we need to acknowledge the possibility of invalid data, particularly when the evaluation is being conducted within a forensic context, where there can be powerful incentives to not perform to the best of one's ability. Second, history has shown that clinical judgment, in and of itself, can be misleading, and that clinical decision-making can be enhanced by incorporating objective measures of effort motivation and effort. In fact, we, like most researchers, recommend using more than one formal measure of malingering, and that clinicians utilize an integrated approach to the assessment of malingering. Third, clinicians should be knowledgeable regarding the base rates of symptoms in the claimants that they evaluate during the acute and recovery stages. Fourth, we believe that it is prudent to acknowledge that a deviant score on a malingering test is not absolute confirmation of malingering, but rather suggests the possibility of malingering. Conversely, an adequate score on a test of malingering does not ensure that the claimant was consistently motivated throughout the evaluation. It should also be obvious that when the test data are thought to be invalid, they are not interpretable. If there is evidence that we have not gotten to the claimant's best effort, the next question, which may or may not be answerable, is why not. If the test data do not appear to be valid, for whatever reason, they cannot be interpreted in any meaningful way. This, of course, implies that even a claimant who is fabricating or exaggerating his or her problems might also have a coexisting neurological disorder. Fifth, no single test that we are aware of provides 100% sensitivity and specificity. Given that

we will most likely need to accept the likelihood of some false positives or false negatives, we prefer to accept greater specificity at the risk of less sensitivity. That is, we would rather "miss a few malingerers" than label a claimant who is truly injured as a malingerer. Finally, we should be clear in how we communicate our findings. There can be a great deal of pressure to offer an opinion regarding whether a claimant is "malingering" or "non-malingering." However, as we have attempted to point out, the reality is often more complex. We have an obligation to be intellectually honest, even if our opinions are contrary to the needs or wants of our referral source.

The diagnosis of malingering should never be made prior to excluding other explanations for the presenting symptoms and signs. Individuals with pain and suffering, cognitive dysfunction, and other somatic or psychiatric conditions deserve to be believed unless we can establish that their history, clinical evaluation, and subsequent diagnostic evaluations suggest a lack of credibility. Numerous assessment tools can be utilized to clarify inconsistencies. Some of these have been discussed above. The reader is encouraged to proceed cautiously in the manner suggested below before making the determination of malingering, and to consider (and rule out) other possible causes for behavioral/symptom inconsistencies.

The following are general recommendations for detecting the malingering of psychiatric symptoms in litigating, benefit-seeking, and questionable presentation examinees.

1. Utilize special tests that have solid sensitivity and specificity for psychiatric symptom malingering, such as the SIRS, M-FAST Screener, or the MMPI-2, or refer the examinee to a psychologist or neuropsychologist to do so.
2. Where PTSD is alleged, administer the MMPI-2 and/or Millon Clinical Multiaxial Inventory–III and compare the examinee's scores on the multiple validity indices against the cutoff scores for pseudo-PTSD claimants available in Lees-Haley.[148]
3. While it is difficult to determine whether psychiatric symptoms are being consciously or unconsciously produced, scores on the Self-Deception and Other Deception Scales of the MMPI-2 may be of some help.
4. If the examinee "flags" one or more symptom validity tests, malingering indices on the MMPI-2, or specialized psychiatric malingering tests, compare his or her performance against the parameters set out in Table 2. If he or she meets the criteria for definite malingering or probable malingering, the report should include either a statement regarding malingering or a strong cautionary statement about his or her invalid and noncredible symptomatic presentation. This is particularly true if antisocial traits or a high Other Deception Scale score on the MMPI-2 is present. Consider releasing such claimants back to work.
5. If the examinee shows evidence of meeting only some of the lesser criteria in Table 2, then the presence of possible noncredible presentation should be reflected in the report. Where the only external incentive that can be identified is maintaining the patient role, then a diagnosis of factitious disorder would be appropriate. Base all time-limited future treatment recommendations or release back to work on a less-severe symptomatic picture.

The following are general recommendations for detecting the malingering of chronic pain and physical symptoms in litigating, benefit-seeking, and questionable presentation examinees:

1. Review, and where applicable, rescore against validated malingering cutoff scores all prior symptom validity tests, FCE validity measures, the Modified Somatic Perception Scale, Meyers et al.'s Chronic Pain MMPI-2 Validity Index, MMPI FBS, Waddell Non-Organic Signs, and the other special physical examination tests described in this article.
2. Where any of the tests or procedures listed above have not been completed on the claimant, either suggest or administer them, including brief symptom validity tests such as the CARB, Medical Symptom Validity Test,[139] TOMM, etc.
3. If the examinee flags one or more of the symptom validity tests, malingering indices of the MMPI-2, specialized pain tests (ie, the Modified Somatic Perception Scale), special physical exam pain exaggeration procedures, or FCE validity procedures, then compare his or her performance against the parameters listed in Table 2. If he or she meets the criteria for definite malingering or probable malingering, the report should reflect

either a statement regarding malingering or a strong cautionary statement about his or her invalid and noncredible symptomatic presentation. This is particularly true if antisocial traits or a high MMPI-2 Other Deception Scale score is present. Strongly consider releasing these claimants back to work and/or recommend against further diagnostic tests, invasive procedures, or extended treatment.

4. If the examinee meets only the lesser criteria of Table 2, then the presence of possible noncredible symptomatic presentation should be reflected in the report. Where the only identifiable external incentive is maintaining the patient role and the symptom magnification and production appears conscious, then the diagnosis of factitious disorder would be appropriate. Where the symptom magnification appears likely unconscious, then consideration of somatoform disorder diagnosis would be appropriate. Recommendations for time-limited medical and mental health treatment and the avoidance of further diagnostic tests and invasive procedures, which could produce iatrogenic effects, would be advisable.
5. In cases where an impairment rating is required, then that rating should be based on experience with normally responding patients with the examinee's degree of objective medical test findings and documented injury severity history only, not his or her exaggerated presentation.

The following are general recommendations for detecting the malingering of neuropsychological or brain jury symptoms in litigating, benefit-seeking, and questionable presentation examinees:

1. Because optimal detection of response bias requires the use of multiple malingering detection procedures spaced evenly throughout a comprehensive neuropsychological evaluation, collaboration with a neuropsychologist is typically required.
2. Give more than one well-validated symptom validity test, such as the CARB, Word Memory Test, Victoria Symptom Validity Test, TOMM, 21-Item Test, Portland, etc., distributed throughout the evaluation.
3. The various special malingering indices of the MMPI-2 should be reviewed for response distortion, especially the FBS and Somatic Malingerer's Profile.
4. If the examinee "flags" one or more of the symptom validity tests or other neuropsychological test or MMPI-2 malingering indices, compare his or her performance against the parameters laid out in Table 2. If he or she meets the criteria for definite or probable malingering (noncredible symptomatic presentation), then the report should include either a statement regarding malingering or a strongly worded cautionary statement about his or her invalid and noncredible symptomatic presentation. This is particularly true if there are antisocial traits or a high MMPI-2 Other Deception Scale score. Consider releasing these claimants back to work and/or cautioning against further diagnostic tests or treatment.
5. If the examinee shows evidence of meeting only the lesser criteria in Table 2, the presence of symptom exaggeration should be reflected in the report. Where the only external incentive that can be identified is maintaining the patient role and some conscious manipulation is evidenced, then the diagnosis of a factitious disorder would be appropriate. Consider releasing these claimants back to work and/or cautioning against further diagnostic tests or treatment.
6. If the examinee shows evidence of meeting only the lesser criteria in Table 2 and the exaggeration of symptoms appears unconscious on his or her part, then the diagnosis of a somatoform disorder would be appropriate, likely a conversion disorder or undifferentiated somatoform disorder. Recommendations should include time-limited mental health treatment and/or cognitive rehabilitation with eventual release back to work.
7. In cases where malingering and strong symptom magnification are clearly present and the neuropsychological test results do not appear to be valid, the data cannot be relied upon to confirm the presence or absence of brain injury.

SUPPLEMENTARY MATERIAL

The following supplementary material is available for this article:

Table S1. Validity and Effectiveness of Measures Designed to Detect Malingering.

This material is available as part of the online article from:

http://www.blackwell-synergy.com/doi/abs/10.1111/j.1533-2500.2007.00126.x

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