

Jasen M. Walker and Stacey A. Krauss

Rehabilitation professionals have come to recognize the importance of comprehensive assessment in evaluating the employability of individuals who may have acquired occupational disability secondary to trauma. Disability evaluation and rehabilitation professionals do not always agree on nomenclature and specific methodologies, and as a result, both the meaning and practice of assessing disability following trauma vary. For many years, however, occupational disability assessment and vocational rehabilitation following trauma have been considered comprehensive, interdisciplinary processes of evaluating an individual's physical, mental, and emotional abilities; limitations from identifiable medical impairment; and residual functional capacities in order to help the injured person experience optimal restoration (Power, 1991). We endorse a biopsychosocial model of disability evaluation adopted by the *International Classification of Functioning, Disability and Health* of the World Health Organization (WHO, 2002). However, we wish to make what we believe are important distinctions among trauma, impairment, and disability, particularly in the assessment of occupational disability.

The National Institute on Disability and Research (1992) summarizes the role of assessment and measurement in rehabilitation as follows: "Consumers are measured to establish their eligibility for benefits or services, to determine which services are appropriate, to assess their needs, to ascertain their current level of functioning, and to estimate their potential" (p. 1). Cushman and Scherer (1995) note that Anne Anastasi presented three definitions of assessment during her 1993 Master Lecture at the 100th American Psychological Association Annual Meeting: (a) testing as a whole; (b) any information-gathering technique regarding individual behavior; and (c) the clinical

---

J.M. Walker, Ed.D. (✉)  
CEC Associates, Inc., 1220 Valley Forge Road, Unit 9, PO Box 987,  
Valley Forge, PA 19482, USA  
e-mail: [jasen@cecassoc.com](mailto:jasen@cecassoc.com)

S.A. Krauss, Ph.D.  
Employee of CEC Associates, Inc.

and intensive study of an individual in which test scores are considered together with all of the relevant data and information. Cushman and Scherer declare that they prefer the third definition, and we concur.

Disability assessment integrates medical, psychological, social, cultural, educational, vocational, and psychometric data into an evaluation process that explains the effects of medical impairment on an individual's occupational capabilities. Despite the recognition that comprehensive assessment is fundamental to disability evaluation and occupational rehabilitation, the practice of disability evaluation following the onset of impairment remains highly eclectic. Moreover, notwithstanding the growing appreciation for the difference between medical impairment and occupational disability (Holmes, 2007), many physicians are asked to determine or feel compelled to comment on vocational capacity and employability.

In this chapter, we will define the lexicon of vocational/disability evaluation and occupational rehabilitation, trace its origin, briefly review relevant literature related to assessment of impairment and evaluation of disability following trauma, and proceed to describe a biopsychosocial model of vocational disability assessment following trauma. We will make our bias known. Physicians diagnose disease and attempt to ameliorate the effects of impairment. Vocational evaluators trained in a variety of disciplines, generally allied with medicine, and yet outside its scope, assess occupational disability.

Accurate assessment of vocational disability following injury or trauma should be a concern for healthcare professionals, employers, public policymakers, and society in general. If for no other reason, human injury is expensive. Direct medical costs and indirect costs, such as lost productivity due to traumatic brain injury (TBI) alone, for example, totaled an estimated \$76.5 billion in the United States in 2000 (Finkelstein, Corso, & Miller, 2006). In 2011, approximately three million workers in private industry and 821,000 workers in state and local government experienced a nonfatal occupational injury or illness, according to the Centers for Disease Control and Prevention (CDC, 2013a). The CDC also reports that nonfatal workplace injuries and illnesses are estimated to cost the US economy approximately \$200 billion annually. The National Safety Council (NSC) references research that shows work-related injuries cost the US economy \$250 billion in 2007. In 2010, there were an estimated five million "medically consulted injuries" and 3,783 deaths that occurred in the workplace (2012). Traumatic injury and associated occupational disability are costly to individuals, families, social agencies, and work organizations. Precision and accuracy in disability assessments can only benefit the individual being evaluated, employers, and society in general, as inaccurate evaluations are likely to be the subject of scrutiny and result in further inquiry, misguided treatment, and additional loss. Precise assessment begins conceptually with differentiating among the phenomena of trauma, impairment, and disability.

---

## 15.1 Trauma

People arrive at the disability evaluation process most often following trauma. The term "trauma" originates from the Greek word meaning "wound." Bodily trauma can take place in many ways. Slip and falls, motor vehicle collisions, work

accidents, physical assaults, shootings, and surgeries can cause trauma. Mild physical trauma does not always cause damage. For example, striking one's elbow or ulnar nerve on the arm of a chair (hitting the "funnybone") is a mild form of trauma that seldom causes damage to the organism, and if it does, the injury is not necessarily permanent. However, ulnar nerve injuries can cause permanent damage, and when irreversible damage occurs, the trauma has caused anatomic and/or physiologic change, which is described in this chapter as impairment.

Definitions of trauma are myriad and too diverse to adequately summarize here. Classen and Koopman (1993) describe trauma as "an abrupt physical disruption in ordinary daily experience, often with loss of control over the body" (p. 178). Courtois (2004) speaks to complex trauma as "a type of trauma that occurs repeatedly and cumulatively, usually over a period of time and within specific relationships and contexts" (p. 412). The American Psychological Association's *Dictionary of Psychology* (VandenBos, 2007) defines trauma as a physical injury or event in which a person witnesses or experiences a threat to his or her own life or physical safety or that of others, and as a consequence, also experiences fear, terror, or helplessness.

The effects of trauma can be numerous. Trauma can be the result of a single event or repetitive exposures to environmental forces. Industrial explosions can cause trauma. Repetitive assembly operations can cause trauma and injury. Repetitive trauma often occurs because muscles are repeatedly stressed, tendons become inflamed, nerves get pinched, or blood flow becomes restricted (Van Fleet & Bates, 1995).

Psychological responses during and related to trauma include temporary psychophysiological reactions and development of permanent mental disorder. Dissociative symptoms concomitant to traumatic experiences include stupor, derealization, depersonalization, numbing, and amnesia for the event (Classen & Koopman, 1993). Survivors of automobile accidents often report a dulling of senses during the accident (Noyes, Hoenk, Kuperman & Slymen, 1977, as cited in Classen & Koopman, 1993). Traumas that are seen as being caused by others (e.g., rape, assault, toxic accidents) generally have more psychological effect on victims and their significant others than those caused by natural disasters (e.g., earthquakes) (VandenBos, 2007).

Acute stress disorder (ASD) was introduced into the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (DSM-IV-TR, 2000) as a diagnosis to describe acute stress reactions. The *Fifth Edition* of the *Manual* (DSM-5, 2013) states that ASD should resolve within 4 weeks after the conclusion of the traumatic event. However, psychological responses to trauma can be more enduring and pervasive.

Posttraumatic stress disorder (PTSD) is a diagnosis that grew from the observations and formulations of researchers concerned with the devastating effects of war trauma on individual soldiers, but according to the DSM-5, PTSD can occur at any age, including childhood. Survivors of rape, child abuse, domestic violence, and other traumatic experiences can develop PTSD. Chronic PTSD has been linked with diminished health and longevity of Vietnam War veterans (Boscarino, 2005),

underscoring the validity of the biopsychosocial model of disability assessment. As the result of severe, cumulative, or complex trauma, maladaptive psychological responses can be chronic and debilitating.

According to Herman (Herman, 1992a, b, as cited in Courtois, 2004), symptoms associated with complex PTSD include alterations in the regulation of: affective impulses; attention and consciousness; self-perceptions; perception of the perpetrators; relationships with others; position and/or medical problems; and alterations in systems of meaning.

Not all traumatic injuries produce enduring psychological sequelae. When it does occur as a result of trauma, dissociation, for example, does not necessarily persist (Esposito & Mellman, 2005). Likewise, other psychological symptoms to trauma have been found to abate with time. Grunert et al. (1992) discovered that the majority of workers with injured hands assessed 5 days post-injury reported flashbacks and nightmares. At 3, 6, 12, and 18-month follow-ups, however, many of these non-exertional symptoms had diminished, although some, including flashbacks and avoidance behaviors, persisted.

Research on Adverse Childhood Experience (ACE) reveals that trauma can be the result of early childhood experiences resulting in social, emotional, and cognitive impairment that ultimately cause long-term effects, including adult chronic health problems and disability. The CDC (2013b) reports that ACE research findings suggest that certain developmental experiences, including various traumas, are major risk factors for the leading causes of adult illness and death as well as poor quality of life in the United States. Therefore, recognition that trauma can be acute, chronic, and/or repetitive is an important aspect of comprehensive, biopsychosocial disability evaluation.

Trauma may be described as being mild, moderate, or severe, but these vague scales in the evaluation process are qualitative at best and may provide little meaning in the assessment of impairment and disability. What is clear is that trauma can produce physical and/or mental damage to the individual. With time, the effects of trauma can abate, but the residuum from trauma may be permanent and may be measured in terms of impairment, physical and/or mental.

---

## 15.2 Impairment

Impairment is defined by the American Medical Association (Cocchiarella & Andersson, 2001) as the loss, loss of use, or derangement of any body part, system, or function. Impairments may be exertional or non-exertional in nature. The Social Security Administration (SSA) offers a Program Policy Statement (SSA, 1978) that clarifies the distinction between exertional and non-exertional impairments. Exertional impairment affects the performance of work activities involving strength and endurance, such as standing, walking, lifting, and otherwise performing the essential requirements of sedentary, light, medium, heavy, or very heavy work. A non-exertional impairment is one which is medically determinable and causes functional limitation generally unrelated to strength or environmental restriction.

For example, speech impairments or hearing disorders may be considered non-exertional impairments. Most mental disorders can be classified as non-exertional impairments. One would expect licensed clinical social workers, psychologists, and psychiatrists to diagnose a mental impairment and hopefully assess its effects on mental and emotional functioning.

Impairments may be exertional, non-exertional, or both. Impairment is evaluated in a variety of ways and is customarily the purview of healthcare providers with a particular expertise related to the type of injury, illness, or impairment. Therefore, orthopedic surgeons are concerned with trauma or impairment to the musculoskeletal system, including bones, joints, and muscles. Neurologists assess what is thought to be impairment of the central and peripheral nervous systems, and neuropsychologists generally assess cognitive deficits and other changes in brain behavior. Psychiatrists and psychologists diagnose and treat mental and emotional disorders.

The American Psychiatric Association relies upon the DSM-5 (2013) to categorize mental disorders and provide criteria for diagnosis. The previous version, the DSM-IV-TR (2000), reminds its readers that the term “mental disorder” implies an unfortunate distinction between “mental” and “physical,” as the compelling literature documents that the mind/body dualism is misleading: “...there is much ‘physical’ in ‘mental’ disorders and much ‘mental’ in ‘physical’ disorders” (p. xxx). The DSM-5 notes that the publication’s task force has made substantial effort to separate the concepts of mental disorder and disability.

Each healthcare specialist possesses more or less reliable methodologies to assess the nature and degree of impairment. When necessary, there may be attempts to determine the permanency of impairment. Diagnoses and defined impairments, however, are insufficient to provide a basis for disability. The critical link between impairment and disability may be functional capacity.

---

### 15.3 Functional Capacity: The Critical Link?

The critical link or keystone between impairment and disability seems to be functional capacity, and in disability evaluation, accurately assessing functional capacity can be of significant importance in evaluating disability and predicting employability. Nonetheless, the evaluation of an individual’s residual functional capacities following trauma remains a challenge for rehabilitation professionals. Among the primary issues are the validity and reliability of functional capacity assessments (King, 2004). Although thought to be a substantial improvement over the practice of a physician simply filling out a physical capacity checklist, solid empirical data with respect to the validity and reliability of the functional capacity evaluation (FCE) is still lacking. Randolph, Nguyen, and Osborne (as cited in Talmage & Melhorn, 2005) recommend that the FCE be used in conjunction with the practitioner’s thorough understanding of the examinee’s health problem and medical history. Still, the FCE appears to be an improvement over the so-called “educated guess” offered by most physicians in response to questions regarding the injured person’s

post-injury physical capacities. In 2008, the American Medical Association published the *Guide to the Evaluation of Functional Ability: How to Request, Interpret and Apply Functional Capacity Evaluations*, an important text in assisting practitioners of medicine and rehabilitation on further appreciating the FCE in the disability assessment process.

Psychiatric and/or psychological statements regarding residual functional capacity are dubiously reliable in terms of predicting an individual's disability and employability. Knowing the diagnosis and Global Assessment of Functioning (GAF) of the individual with mental impairment has been insufficient in accurately assessing the degree of motivation, self-control, functional skills, and tolerance for stress that individuals bring to prospective employment. The GAF formed the fifth axis of the standardized diagnostic procedure followed in the DSM-IV-TR and sought to quantify psychological, social, and occupational functioning on a continuum of mental illness. The DSM-5 no longer endorses the GAF as an assessment scale but arguably provides no better a tool, the World Health Organization Disability Assessment Schedule 2.0 (WHO, 2007a).

Because trauma can result in permanent physical and/or mental impairment, and functional capacity assessments are currently designed only to investigate the impaired person's physical capacities, rehabilitation professionals must turn to other assessment tools and procedures to appreciate the examinee's residual employability following trauma that may have resulted in mental impairment and associated dysfunction. The SSA (2005) references limitations in concentration, persistence, or pace as representative of disabling mental impairment. Fortunately, significant attention has been paid to the validity and reliability of mental measurements, including standardized psychological and vocational tests that can measure an individual's concentration, persistence, and pace. Unfortunately, psychological and vocational testing in disability assessments is not always employed, and when utilized, vocational disability evaluation measures are often administered without the issue of ecological validity in mind.

Ecological validity refers to the real-world meaningfulness of data-gathering activities. The term "ecological validity" was coined by Egon Brunswik (Hammond, 1998), who was concerned with ergonomics, the application of human factors in the design of objects and systems in the environment. How a person behaves at the time of an FCE or disability assessment may not necessarily predict how the person will function in a work setting, and essentially that is the challenge to rehabilitation professionals—to determine the value of their collected data in terms of predicting workplace behaviors.

---

## 15.4 Disability

In describing the relationship of trauma and impairment to occupational disability, one must reiterate the important distinction between impairment and disability (Walker, 1993). The AMA *Guides* (Cocchiarella & Andersson, 2001) references the difference between impairment and disability. As noted above, impairment is

defined as “a loss, loss of use, or derangement of any body part, organ system, or organ function” (p. 3) and is evaluated best by medical means. On the other hand, disability is “an alteration of an individual’s capacity to meet personal, social, or occupational demands” (p. 3). The World Health Organization (2007b) defines disability as an activity limitation that creates a difficulty in the performance, accomplishment, or completion of an activity in a manner that is within the range considered normal for a human being. The Americans with Disabilities Act of 1990 (U.S. Department of Justice, 2007) speaks to disability as having a physical or mental impairment that substantially limits one or more of an individual’s major life activities; having a record of impairment; or being regarded as having an impairment. In this chapter, we are concerned with the occupational consequences of medical impairment.

Occupational disability may be defined as an individual’s loss or limitations in employment capabilities secondary to physical and/or mental impairment. Vocational disability can have a strong social component. Observations and research have shown that vocational disability can be induced by social dynamics, and disability can be ameliorated or managed through psychological and social interventions, transition-to-work, ergonomic assistance, or career change, to name a few (Walker & Heffner, 2006). Vocational or occupational disability is best assessed by qualified evaluators who possess an understanding of medical impairments and their effects on functionality. Through comprehensive assessment, vocational disability evaluators can develop an accurate prediction of how the individual’s history of impairment will impact the essential functions of employment for which he or she is best qualified given the person’s residual physical capabilities, age, education, work skills, potentials to benefit from retraining, and return-to-work possibilities through job re-engineering.

Scheer (1991) pointed out that society is accustomed to putting physicians in decision-making roles for assessing work capacity or vocational disability and expecting physicians to make disability determinations, often without collaborating with other assessment professionals. By training, however, physicians are ill-prepared to assess work disability, capability, and employability. Nonetheless, the family physician in particular is commonly called upon to serve as an occupational health physician and to assess vocational capacity. Walker (2007) and others (Growick, 2004) have described, in detail, the problems facing physicians and other healthcare professionals (i.e., physical and occupational therapists) in assessing an individual’s functional capacity following physical injury or illness, and yet, assessing functional capacity is only part of the tripartite analysis (i.e., impairment, functionality, and residual employability) of disability. Following the occurrence of trauma, impairment and then functionality must be carefully investigated prior to determining the examinee’s occupational disability and assessing his or her employability.

Rehabilitation professionals trained in vocational disability evaluation realize that assessment of occupational disability following trauma is a comprehensive, interdisciplinary process of evaluating an injured individual’s physical, mental, and emotional capacities in an effort to identify an optimal vocational fit, and in most cases, a return to work (Power, 1991). Disability is a biopsychosocial phenomenon and

requires investigation into all spheres, the biological, psychological, and social aspects of the examinee's life. In vocational disability assessments carried out for court purposes (forensic evaluations), rehabilitation is probably not the goal. Nonetheless, assessment is the same and involves the gathering and integration of data for purposes of making evaluations, decisions, or recommendations (VandenBos, 2007, p.751). Assessing vocational disability following trauma for any purpose is logically multidisciplinary, integrating information from a variety of sources, as accurate assessment requires reliable data from more than one specialty.

Assessment of disability and employability following trauma begins with appreciating the functional effects of impairment. The various assessment methodologies employed to determine functional capacity are dictated to some extent by the nature of the impairment(s). Assessment of occupational disability following brain injury resulting in both exertional or strength deficits (e.g., hemiplegia) and non-exertional impairments (i.e., cognitive and emotional deficits) will likely require physical capacity testing, neuropsychological investigation, and ultimately, vocational evaluation, the latter to determine if the individual with multiple impairments can still carry out work-related activities on a competitive level.

Assessment strategies for determining disability are therefore dictated to a large extent by the nature of the permanent impairments presented at the time of evaluation. An individual with a permanent impairment of the lumbar spine following a work-related trauma involving lifting may not demonstrate postaccident psychological problems and may require no more than physical capacity testing after reaching maximum medical improvement through physiotherapy.

Thorough assessment of disability following trauma, however, requires a comprehensive and detailed investigation of an individual's medical history and residual functional capacities. The examinee's social and family background, educational history, acquisition of vocational skills through experience, and potentials to acquire additional skills through post-injury training and/or job experience are critical areas of inquiry.

The more thorough the assessment, the more likely it is to carry ecological validity. The prediction of vocational functioning from laboratory or clinical diagnoses alone remains a concern. The rehabilitation professional wants to know how an examinee's performance on an FCE and scores on various tests compare to what is expected in a job description or in relation to those performances of unimpaired cohorts with whom the examinee will compete in the labor market.

In terms of assessing the occupational disability and residual employability of individuals experiencing psychiatric or psychological symptoms following trauma, the input from treating mental health professionals regarding the examinee's diagnosis and capacities for non-exertional work demands can be helpful. For example, whether the psychologically impaired person can communicate and cooperate with others in a workplace is essential in determining if a person is disabled from the essential function of teamwork. Moos, Nichol, and Moos (2002) conducted research that led them to conclude that GAF ratings were only minimally associated with treatment outcomes and were of questionable value in a program for predicting the allocation and outcomes of mental health care. As noted, the DSM-5 has eliminated the GAF scale and instead includes the World Health Organization Disability Assessment Schedule 2.0 (WHO, 2007a).

No consistent relationship has been identified between psychiatric symptoms and vocational performance, making diagnostic categories poor predictors of future work performance (Anthony & Jansen, 1984). On the other hand, a person's functional capabilities and occupational adjustment exhibited in a clinical setting and in response to work-like tasks, such as problems on psychological tests and work samples, may still be important observational data in assessing disability and residual employability. For example, whether the psychologically impaired person can communicate and cooperate effectively with others in an evaluation would seem to have merit in terms of predicting work behaviors. Likewise, because standardized tests are designed to measure behaviors, a person's performances on appropriately selected psychological and vocational measures would seem to have value in predicting work performance following the onset of impairment.

It is in light of the experience and research of others that we advocate multidisciplinary, comprehensive assessment to include documentation regarding the examinee's medical history and disabling impairment; careful observation during a detailed structured clinical interview; and analysis of relevant data from both functional capacity assessments and psychological/vocational testing. Assessing occupational disability is greatly enhanced through "clinical and intensive study of an individual in which test scores are considered together with all other relevant data and information" (Cushman & Scherer, 1995, p. 3). As stated above, we concur with Anastasi (as cited in Scherer, 1995) and propose a three-part model to disability assessment: (1) review of detailed documentation; (2) structured clinical interview data; and (3) results of ecologically valid psychovocational testing.

---

## 15.5 Assessing Disability: Practical Applications

Although there are many elements of investigation that have the potential to contribute to disability assessment, beginning with determination of physical or mental impairment, the findings of impairment alone should not be considered equivalent to disability. As stated, there is a, sometimes considerable, difference between impairment and disability. Walker and Heffner (2006) note that the presence of impairment alone does not determine an individual's capacity to meet social or occupational demands. Disability is more complex than a change in mental or physical functioning secondary to impairment; it is a multifaceted combination of physical, social, and psychological factors. Breeding (2005) recognizes that the impact of a medical impairment largely depends on the perception of the person affected, and he adds that the psychosocial impact on two people with identical impairments can be quite different.

A major objective of disability assessment is to determine an individual's capacity to meet social and occupational demands following the acquisition of impairment. The goal of the disability assessment process is to develop a detailed picture of the individual being evaluated, including, among other factors, medical impairments, residual functional capacities, post-injury aptitudes and skills, personality characteristics, the environments in which the individual might again live and work, and levels of functioning prior to impairment. The individual's entire medical history is

often important in disability assessment. Disease entities and resultant limitations can be antecedent to and not necessarily a consequence of trauma, and these comorbidities, regardless of their etiology, may be occupationally significant. Due to the encompassing nature of disability, gathering the often interrelated biological, psychological, and social information needed to adequately assess disability and potential is challenging but nonetheless essential.

Although the methods for assessing disability in a forensic setting remain the same as for rehabilitation purposes, the goal of the former is often to answer a legal question. Typically, it is a question of whether an individual has incurred reduced employment capacity and/or lost potential to earn wages occupationally. Assessment for rehabilitation purposes generally produces recommendations, and forensic vocational disability evaluation aims to answer legal questions. Ideally, the initial assessment processes and methodologies remain the same.

It is important to consider the question of who is qualified to conduct disability assessments. Walker and Heffner (2006) indicate that it is a common misconception that members of the medical field are qualified to make determinations about disability. There are several concerns associated with this misconception, particularly as the determination of disability is reliant on many factors apart from medical expertise alone, and are therefore beyond the purview of physicians (Cocchiarella & Andersson, 2001; Scheer, 1991; Talmage & Melhorn, 2005). The assessment of disability also requires training in the nature and demands of multiple forms of work and what is required of individuals to successfully participate socially in a work setting. Sleister (2000) correctly notes that the reliance on physicians and economists to provide assessment of an individual's capacity to work following impairment is ineffective, as they do not have the expertise to speak to qualifications, physical requirements, or earnings for the more than 20,000 jobs in the US labor market.

Often, in cases of personal injury where disability assessment is required, vocational experts are the most qualified. Sleister (2000) provides a comprehensive discussion on the qualifications and abilities of vocational experts, which include knowledge of the psychosocial aspects of disability and a variety of occupational skills and characteristics. Weed and Field (2001) discuss the role of vocational or rehabilitation experts as professionals who are knowledgeable in vocational, educational, and psychological assessment practices. Weed and Field provide an overview of the forensic disability evaluation process. Ultimately, the disability assessor needs to be able to synthesize information from a variety of sources while maintaining a focus on ecological validity.

---

## 15.6 The Elements of a Disability Assessment

Although Thomas (1999) notes that some feel the present state of vocational evaluation has lost its utility and that the formal process associated with disability assessment should be altered to reflect more of a screening process driven by self-report, we argue that thorough and accurate assessment should consist of three main parts: a review of pertinent documentation, a clinical interview, and the administration of standardized

testing. Berven (as cited in Bolton, 2001) similarly describes assessment for rehabilitative purposes as being constructed of a review of client records, clinical interviews, observations, examinations by other professionals, and formal testing.

Before presenting each of these data-gathering areas in some detail, it is noteworthy to mention that reliance on a clinical interview solely is fraught with potential for error. Meyer et al. (2001) highlight several possible errors, such as gathering data from poor or unreliable historians, using overly narrow interview formats, and having an inability to objectively determine exaggerated or biased self-reporting. It is also worth noting that through the use of testing in conjunction with interviews, the evaluator is able to measure a variety of features at the same time, compare individual performances to relevant norm groups, and follow standardized scoring and administration procedures, which lessen possible legal and ethical conflicts and likely increase the validity of the findings.

Sleister (2000) notes that throughout a disability assessment, a skilled evaluator must be able to observe and assess personal characteristics, educational potential, and related work histories, which would be difficult to complete accurately through reliance on self-report alone. Additionally, Breeding (2005) points out that in the research on disability, no link exists between the physical severity of an injury or illness and the psychosocial effects it has on a given individual and, therefore, disability cannot adequately be assessed through medical examination alone.

Many disability evaluators have traditionally relied on Transferability of Skills Analysis (TSA), a process of investigating the skills and traits a person has demonstrated during his or her working life in order to recommend alternative job placement or retraining options after the establishment of impairment. Despite its broad acceptance in the field of disability evaluation, we suggest that a TSA is not comprehensive enough to adequately assess disability and has several inherent flaws that lend against its use. In fact, findings suggest that little research, particularly empirical research, has been conducted to speak to the validity and usefulness of the practice (Dunn & Growick, 2000).

A major criticism of TSA is its rigidity, which often leads evaluators to overlook a range of alternate occupations available to a person simply because it falls outside of the description of his or her customary employment. TSAs actually evaluate the essential functions of job descriptions that the person reportedly carried out and intend to predict what skills the individual should be capable of doing with functional limitations. However, an individual's self-report of work history, job titles held, and specific work responsibilities is not a reliable method of assuring the individual had actually acquired skills delineated by government job descriptions, such as those promulgated by the U.S. Department of Labor (1991). Job titles alone vary from workplace to workplace. Even with a very careful inquiry regarding the individual's training, tools, materials, and methodologies used, considerable variation can exist from one worker's job responsibilities and experiences to another's.

The TSA method of disability assessment also assumes that an individual was well suited to prior employment, which may be untrue, and therefore not only presumes acquisition of work adjustment skills but also ignores potential vocational interests outside of previous modes of work (Dunn & Growick, 2000). Dunn and

Cain (2001) note that often a return to employment following the onset of impairment is dependent on extra-vocational circumstances and activities, and a disability assessment is likely to be ineffective if these variables are not considered. Dunn and Cain also conclude that many elements of TSA are not relevant to determining vocational outcome, and furthermore, TSA does not appear to be as sensitive in identifying alternate vocations when the individual in question has greater physical effects of impairment.

Power (1991) asserts that when assessing an impaired individual's current level of functioning, the use of standardized tests, such as aptitude and achievement tests, is warranted because specific knowledge of how an impaired individual's abilities or competencies compare with those of non-impaired individuals may be necessary for rehabilitation planning to be relevant. Neukrug and Fawcett (2010) conclude that assessment procedures include the clinical interview, ability testing, aptitude testing, personality testing, and informal methods such as observation and review of pertinent documents.

---

## 15.7 Review of Pertinent Documentation

The process of assessing disability is greatly enhanced by the review of critical documents, which can provide a wealth of information not typically available to an evaluator. It is not possible to gather all of the needed information for a disability assessment through a clinical interview and testing alone, particularly given the limited time allotted for those tasks. Through the review of additional records, the evaluator often has better access to the social environment in which the individual lives and works. For example, by reviewing employment records, it is possible to obtain information about how an individual typically performs at work through performance reviews, disciplinary actions, workplace injury reports, and attendance logs. Review of these records may also provide valuable insight into the employee–employer relationship, which may influence an individual's motivation to return to work following impairment. It can also serve to highlight supportive social environments that can be utilized to support a return to employment or avocational activities.

Medical documentation can be vital in a disability assessment and stands as a historical reflection of the individual's health. As mentioned earlier, some individuals can be unreliable historians or may intentionally distort or omit aspects of their health history that they feel will influence the outcome of a disability assessment. Reviewing documentation of medical treatment, both prior to and after an injury or illness, has the potential to provide a more complete body of information than some individuals may provide in an interview. Reviewing medical records is especially important if the individual in question had been diagnosed with particular conditions that could have interfered with his or her ability to participate in work prior to the issue in question, such as advanced heart disease or diabetes.

Apart from employment and medical records, in some cases, academic records can provide excellent information about an individual's baseline or premorbid performance for formal testing and his or her specific skill sets. At times, academic

records identify a starting point in a long history of absenteeism or disciplinary issues. These types of records also have the potential to illustrate post-injury avenues for someone who must consider alternate work following the onset of impairment.

Ultimately, the review of records provides the evaluator with information about an individual as that person may be living from day to day as opposed to how that person presented in the assessment interview and performed during testing. Records provide a historical context to the disability assessment, a context that hopefully includes both pre-trauma and post-injury data.

---

## 15.8 Clinical Interview

The clinical interview is an essential element of a comprehensive disability assessment for several reasons. For one, it gives the individual being evaluated the opportunity to express his or her personal experience prior to and after sustaining an impairment. Breeding (2005) highlights the subjective nature of the impact of impairment and notes that information about an individual's lived experience is typically not available in documentation, testing, or general intake interviews. The clinical interview provides the examiner with the opportunity to ask an individual about a variety of areas in his or her life that may have been affected by impairment and also to gather information about the person's lifestyle.

Perhaps the most important reason to conduct a clinical interview, as opposed to simply reviewing records, is that more often than not, people are much different in person than they appear to be on paper. This point comes into sharp relief when one considers the many different professional perspectives that build a body of records regarding an individual's care. The type of qualitative information generated in a clinical interview helps to construct a context for the assessment and resultant findings by exploring and incorporating the unique features of the individual.

There are numerous texts devoted to specific techniques, styles, and goals of interviewing, so only select points will be briefly discussed here. Before conducting a clinical interview, the examiner should invest considerable time into practicing the required skills. Namely, data gathered from clinical interviews are greatly enhanced when the interviewer is a trained listener who recognizes and follows important leads instead of relying solely on the rather clerical nature of filling in a structured interview format. That is, though semi-structured, the interview should respond and adjust to the unique features each individual brings to an evaluation. This is also essential to building rapport with the person being interviewed and demonstrates that the examiner is listening. Berven (as cited in Bolton, 2001) suggests that during an interview, the communication of empathy, respect, and genuineness have the power to augment the relationship and encourage disclosure.

During the interview, the evaluator's main tool is that of questioning, so it is essential to practice phrasing questions tactfully though directly. At times, individuals are resistant to being interviewed, and the evaluator must effectively confront the person in order to generate quality information. One method is to simply point out

the individual's behavior, such as appearing uncomfortable, and then engage the person in a dialogue directed to resolve the resistance and resume the interview. For example, it may be that the individual feels uncomfortable meeting new people and simply needs a few additional minutes to adjust to the task. In forensic settings, some individuals come to evaluations with the knowledge that the opposing legal party sent them and therefore have pre-existing notions of what the experience will entail. In any case, investing a few minutes to develop rapport with the individual and reduce resistance is worthwhile.

Another essential task of the clinical interviewer is to closely observe the person being interviewed. As mentioned, interviewing should not be considered a static clerical task, but rather an opportunity to gather important qualitative data about a person. Observations might include noting the way an individual is dressed, monitoring body language or complaints of physical discomfort, surveying the person's emotional responses to different questions, and any obvious abnormalities in thinking or information processing. The evaluator may also want to observe the individual's level of social appropriateness and sophistication, as the ability to be socially aware and accurately interpret social cues is essential to successful functioning in all but a select few vocational settings. Goleman (2006) explores the topic of social intelligence in detail.

The examiner should begin an interview by clearly stating the purpose of the evaluation. This includes stating any limitations to confidentiality, the source of the referral, and who will have access to the findings of the evaluation. The assessor should be prepared to answer any questions that the individual may have before beginning and should take care to ensure that the person has understood the purposes of the evaluation as stated.

When conducting a clinical interview as part of a disability assessment, it is important to structure the interview around the areas of the individual's life that generally have an effect on his or her productivity. This would include exploring the person's perceptions of his or her own abilities or disabilities, the role of work in the person's life as part of a detailed job history, and premorbid and unrelated post-morbid health issues. Berven (as cited in Bolton, 2001) suggests conducting an interview with at least a semi-structured format so that other professionals assessing the individual are likely to reach similar conclusions, or at least to understand how the conclusions of an interview are determined. During the clinical interview, the evaluator should take into account how the person spends a typical day, which, in some cases, has the potential to highlight new roles the individual has taken on that may reduce the likelihood of a return to full productivity. An example of this is when a person becomes the primary caretaker of the family almost by default while the spouse works.

There are certain concrete areas of an individual's experience that should be taken into account during a clinical interview as well, such as recording a list of any medications taken, including the dosage and frequency of use. Some medications can affect the speed or clarity of cognitive processing, thus affecting performance both on standardized testing and on general measures of productivity. It is also helpful to ask individuals to describe educational attainment, hobbies, and his or her family. This information further builds the context for a disability assessment.

If possible, it is helpful to interview other people who are significant in the life of the individual who is the focus of the evaluation. Often, significant others can offer valuable perspectives on the individual both prior to and after injury and can also speak to the person's residual abilities, activities, and interests. The need to interview significant others becomes evident when a child is the subject of evaluation, as it is essential to interview parents. This can also be the case if the subject of the evaluation is unable to participate in interviewing due to his or her physical or mental limitations.

---

## 15.9 Standardized Testing

The final area of the three-part model proposed for conducting a disability assessment is the administration of standardized testing. This area is frequently overlooked or is undertaken incompletely by examiners. As mentioned earlier, Meyer et al. (2001) point out the many benefits of using standardized testing as a valuable part of an assessment and even demonstrate that many published assessment measures are as reliable as medical tests like x-rays and CT scans. The use of standardized testing also provides unique information in that it can measure a person's aptitudes for retraining in a new vocation, for example. It is difficult to determine with any certainty a person's learning potentials based on self-report or historical documentation alone (Walker, 2004).

When designing a test battery to employ during a disability assessment, it is important to keep the concept of ecological validity in mind. That is, it is most logical to select measures that can provide information useful in the real world in which the person will be functioning. There is not much value in administering a test of manual speed and dexterity to a person who has suffered a major injury to his or her dominant hand, unless attempting to demonstrate that, in fact, the hand is impaired. It would be more informative, not to mention a better use of time, to select measures for that person that speak to the basic skill sets required in areas where he or she may be able to resume work or social activities. The availability of various workplace accommodations, such as voice-activated dictation, highlights the need to measure the basic, underlying skills a person has even if the person is impaired in using those skills via traditional methods. An individual who possesses skills associated with office work should not be considered excluded from that category of work simply because he or she lacks the capacity to type on a keyboard in a way that others do.

Typically, a test battery used for the purpose of disability assessment includes measures of achievement, intelligence, aptitudes, interests, personality dynamics, and, at times, measures of effort (Walker, 2004). Standardized testing should always include objective measures of personality or temperament as opposed to including only subjective self-report measures. The use of self-report measures raises the potential for biased responding and offers no means of objectively determining when biased responses are given. Although not directly related to vocational skill, personality measures offer valuable information about an individual's suitability for a certain vocation. Even if an individual had the requisite skills for a career in sales, the person would likely not be successful if extremely

introverted or socially timid. Personality measures not only provide objective information on how suitable a person is for a specific job, but also how likely the individual is to be satisfied with that particular work.

In addition to administering an objective measure of personality, a test battery for disability assessment should also include measures of achievement to include basic academic skills, such as reading comprehension and mathematics. It is advisable to administer achievement testing early in a battery to ensure that later measures are appropriate for the individual's mathematic and reading abilities. There are also a variety of standardized measures that assess a range of work aptitudes, such as the Career Ability Placement Survey, the Differential Aptitude Test, or the Minnesota Clerical Test, that may be helpful.

When conducting disability assessment, it is important to incorporate the individual's personal and vocational interests, as an individual should not be expected to undertake an activity that they find repellent and, in fact, it is likely that the individual would not sustain unappealing activity even if able. Evaluators should devote special attention to the interest inventory they employ in order to ensure that it adequately covers a large range of occupational interests, including more modern vocations, such as computer-related activities, if possible.

Another aspect of the test battery for disability assessment is testing designed to measure effort. There are several available measures for assessing the validity of an individual's effort and response style during testing that are informative to the process, as sometimes individuals purposefully distort performance, particularly when secondary gain dynamics are present. Lynch (2004) offers some suggestions for identifying behaviors that indicate when validity testing is warranted, such as large discrepancies between subjective complaints and objective findings or a lack of cooperation during assessment efforts.

As with interviewing, test administration is a clinical process rather than a clerical task. The test administrator should make careful observations throughout the administration of standardized testing in order to gather qualitative data about how the person approached and organized each task. These observations should also include the individual's emotional response to particular activities, willingness to follow instructions, affect, and any signs of thought disorder. The examiner must be prepared to answer questions about not only the purpose of testing, but also specific questions about each test, and therefore, must be quite familiar with the measures. Frequently, it will fall to the examiner to help reduce anxiety associated with taking tests.

It is of great importance that the test battery and the examiner are responsive to the strengths, weaknesses, and needs of the individual being assessed. As data is gathered during the interview and test administration, it is the examiner's responsibility to integrate the information and adjust the assessment so that the most useful information is being collected.

The goal of medical and vocational rehabilitation is to maximize an individual's functioning following trauma and the onset of impairment, and when possible, restore that person's productivity. The comprehensive assessment initiates the disability evaluation and vocational rehabilitation processes, both of which are enhanced when practitioners fully appreciate the difference between impairment and disability.

## 15.10 Current and Future Assessment Considerations

Assessment of disability following trauma and impairment logically follows concepts associated with rehabilitation psychology and what we think we know about recovery. Current and growing concepts that appear to provide promise to the fields of occupational disability assessment and resultant rehabilitation flow from positive psychology. Positive psychology emphasizes the role of personal strengths and assets in human development, happiness, and well-being (Seligman & Csikszentmihalyi, 2000). The WHO asserts that health is “*A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*” (WHO, 2004), and in keeping with the WHO advocacy of the psychosocial model of rehabilitation, it follows that response to and recovery from trauma and impairment will depend on one’s positive strengths and attributes. Therefore, assessment of an individual’s strengths and attributes is most certainly in order.

As we believe the biopsychosocial model of disability assessment remains valid, once an individual’s biology has been compromised following trauma and impairment, psychosocial reserves that summon courage and resilience, for example, are the individual’s means for recapturing productivity and citizenship. Methods of measuring courage, resilience, optimism, and gratitude among other strengths become relevant following trauma, particularly with regard to measuring and actualizing rehabilitation potentials. Many important questionnaires associated with positive psychology are being developed and validated, in part, through the *Authentic Happiness* website at the University of Pennsylvania (2006). Practitioners committed to assessing an individual’s disability following trauma and impairment are encouraged to utilize these tools, meant as qualitative measures at least, and by doing so, consider the importance of positive psychology concepts in the assessment of vocational disability and rehabilitation following trauma and impairment.

---

## 15.11 Conclusion

The vocational disability assessment process is of substantial concern to rehabilitation professionals, employers, and society in general. In this chapter, we provide specific definitions of vocational disability assessment and its key concepts, look at relevant economic impact data, and continue by discussing the explicit methods used in disability assessment to evaluate the work potentials of individuals who are impaired physically and/or mentally. We advocate for adoption of a biopsychosocial model of assessment. After defining trauma, we make the crucial distinction between “impairment” and “disability.” We describe the vital role of the functional capacity evaluation in the assessment process.

Vocational disability assessment is discussed in depth in terms of practical applications, the elements of an assessment, and the “three-part model” of assessment. The tripartite model, the heart of the assessment process, identifies the essential steps as: (1) a document review; (2) the clinical interview; and (3) standardized testing. Contributions from positive psychology are recognized as a potential “next

stage” for providing disability assessment tools and rehabilitation methods. The thrust of this chapter is that the goal of vocational disability assessment is to develop a precise picture of the individual’s capacity to function occupationally so that reliable decisions regarding the examinee’s potentials and productivity can be made.

---

## References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. – text revision). Washington, DC: American Psychiatric.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric.
- Anthony, W. A., & Jansen, M. A. (1984). Predicting the vocational capacity of the chronically mentally ill. *American Psychologist*, *39*(5), 537–544.
- Berven, N. L. (2001). Assessment interviewing. In B. F. Bolton (Ed.), *Handbook of measurement and evaluation in rehabilitation* (pp. 197–213). Austin, TX: Pro-ed.
- Boscarino, J. A. (2005). Posttraumatic stress disorder and mortality among U.S. army veterans 30 years after military service. *Annals of Epidemiology*, *16*, 1–9.
- Breeding, R. R. (2005). Vocational rehabilitation and sudden onset disability: Advancing proprietary consumer involvement through improved vocational assessment. *Journal of Vocational Rehabilitation*, *22*, 131–141.
- Centers for Disease Control and Prevention. (2013). *Nonfatal work-related injuries and illnesses—United States, 2010*. Retrieved January 30, 2014, from <http://www.cdc.gov/mmwr/preview/mmwrhtml/su6203a6.htm>
- Centers for Disease Control and Prevention. (2013). *Adverse childhood experiences (ACE) study*. Retrieved January 30, 2014, from <http://www.cdc.gov/ace/index.htm>
- Classen, C., & Koopman, C. (1993). Trauma and dissociation. *Bulletin of the Menninger Clinic*, *57*(2), 178–194.
- Cocchiarella, L., & Andersson, G. B. J. (Eds.). (2001). *Guides to the evaluation of permanent impairment* (5th ed.). Chicago: AMA Press.
- Courtois, C. A. (2004). Complex trauma, complex reactions: Assessment and treatment. *Psychotherapy: Theory, Research, Practice, Training*, *41*(4), 412–425.
- Cushman, L. A., & Scherer, M. J. (Eds.). (1995). *Psychological assessment in medical rehabilitation*. Washington, DC: American Psychological Association.
- Dunn, P., & Cain, H. M. (2001). Comparisons of pre-injury characteristics of injured workers across levels of post-injury occupational congruence: Potential applications for Transferable Skills Analysis. *Journal of Forensic Vocational Analysis*, *4*, 13–20.
- Dunn, P. L., & Growick, B. S. (2000). Transferable skills analysis in vocational rehabilitation: Historical foundations, current status, and future trends. *Journal of Vocational Rehabilitation*, *14*, 79–87.
- Esposito, K., & Mellman, T. (2005). Stress disorder after traumatic injury. *The American Journal of Psychiatry*, *162*, 629–630.
- Finkelstein, E., Corso, P., & Miller, T. (2006). *The incidence and economic burden of injuries in the United States*. New York: Oxford University Press.
- Genovese, E., & Galper, J. (2008). *Guide to the evaluation of functional ability: How to request, interpret and apply functional capacity evaluations*. Chicago, IL: American Medical Association.
- Goleman, D. (2006). *Social intelligence: The new science of human relationships*. New York, NY: Bantam Books.
- Growick, B. (Ed.). (2004). The use of functional capacity evaluations in vocational forensics. *Journal of Forensic Vocational Analysis*, *7*(2).
- Grunert, B. K., Devine, C. A., Matloub, H. S., Sanger, J. R., Yousef, N. J., Anderson, R. C., et al. (1992). Psychological adjustment following work-related hand injury: 18-month follow-up. *Annals of Plastic Surgery*, *29*, 537–542.

- Hammond, K. R. (1998). Ecological validity: Then and now. Retrieved October 1, 2007, from <http://www.brunswik.org/notes/essay2.html>
- Holmes, E. B. (2007). Impairment rating and disability determination. Retrieved September 23, 2007, from <http://www.emedicine.com/pmr/topic170.htm>
- King, P. M. (2004). Analysis of the reliability and validity supporting functional capacity evaluations. *Journal of Forensic Vocational Analysis*, 7, 75–82.
- Lynch, W. J. (2004). Determination of effort level, exaggeration, and malingering in neurocognitive assessment. *Journal of Head Trauma Rehabilitation*, 19(3), 277–283.
- Meyer, G. J., Finn, S. E., Eyde, L. D., Kay, G. G., Moreland, K. L., Dies, R. R., et al. (2001). Psychological testing and psychological assessment. *American Psychologist*, 56(2), 128–165.
- Moos, R. H., Nichol, A. C., & Moos, B. S. (2002). Global assessment of functioning ratings and the allocation and outcomes of mental health services. *Psychiatric Services*, 53(6), 730–737.
- National Institute on Disability and Rehabilitation Research. (1992). Human measurement in rehabilitation. Retrieved October 1, 2007, from <http://www.empowermentzone.com/measure.txt>
- National Safety Council. (2007). Report on injuries in America. Retrieved October 1, 2007, from [http://www.nsc.org/library/report\\_table\\_1.htm](http://www.nsc.org/library/report_table_1.htm)
- National Safety Council. (2012). *Injury facts 2012 edition*. National Safety Council.
- Neukrug, E. S., & Fawcett, R. C. (2010). *Essentials of testing & assessment* (2nd ed.). Belmont, CA: Brooks/Cole Cengage Learning.
- Power, P. W. (1991). *A guide to vocational assessment* (2nd ed.). Austin, TX: PRO-ED.
- Randolph, D. C., Nguyen, T. H., & Osborne, P. (2005). The functional capacity evaluation: Is it helpful? In J. B. Talmage & J. M. Melhorn (Eds.), *A physician's guide to return to work*. Chicago, IL: American Medical Association.
- Scheer, S. J. (1991). *Medical perspectives in vocational assessment of impaired workers*. Gaithersburg, MD: Aspen.
- Seligman, M. (2006). *Authentic happiness*. Retrieved February 7, 2014, from <http://www.authentic-happiness.sas.upenn.edu/Default.aspx>
- Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5–14.
- Sleister, S. L. (2000). Separating the wheat from the chaff: The role of the vocational expert in forensic vocational rehabilitation. *Journal of Vocational Rehabilitation*, 14, 119–129.
- Social Security Administration. (1978). SSR 83-14: Titles II and XVI: Capability to do other work—The medical-vocational rules as a framework for evaluating a combination of exertional and nonexertional impairments. Retrieved September 29, 2007, from [http://www.ssa.gov/OP\\_Home/rulings/di/02/SSR83-14-di-02.html](http://www.ssa.gov/OP_Home/rulings/di/02/SSR83-14-di-02.html)
- Social Security Administration. (2005). Disability evaluation under social security—Mental disorders—Adult. Retrieved October 1, 2007, from <http://www.socialsecurity.gov/disability/professionals/bluebook/12.00-MentalDisorders-Adult.htm>
- Talmage, J. B., & Melhorn, J. M. (Eds.). (2005). *A physician's guide to return to work*. Chicago, IL: American Medical Association.
- Thomas, S. W. (1999). Vocational evaluation in the 21st century: Diversification and independence. *Journal of Rehabilitation*, 65(1), 12–15.
- U.S. Department of Justice. (2007). Americans with disabilities act. Retrieved October 1, 2007, from <http://www.usdoj.gov/crt/ada/pubs/ada.htm>
- U.S. Department of Labor. (1991). *Dictionary of occupational titles—Volume II, fourth edition, revised 1991*. Washington, DC: U.S. Government Printing Office.
- Van Fleet, E. L., & Bates, R. (1995). Ergonomics. *Facts & Resources*, 1(1), 1–2.
- VandenBos, G. R. (Ed.). (2007). *APA dictionary of psychology*. Washington, DC: American Psychological Association.
- Walker, J. M. (1993). The difference between disability and impairment: A distinction worth making. *Journal of Occupational Rehabilitation*, 3(3), 167–172.
- Walker, J. M. (2004, June 3–4). *Forensic vocational assessments*. Paper presented at the 2004 Pennsylvania & New Jersey I.A.R.P. Conference.

- Walker, J. M. (2007). *Application of the FCE by vocational experts*. Manuscript submitted for publication.
- Walker, J. M., & Heffner, F. (2006). Disability, dysfunction, or deception: Explaining acquired occupational disability. *The Forensic Examiner*, 15(1), 12–23.
- Weed, R. O., & Field, T. F. (2001). *Rehabilitation consultant's handbook—Revised*. Athens, GA: Elliott & Fitzpatrick.
- World Health Organization. (2002). *Towards a common language for functioning, disability and health: International classification of functioning, disability and health*. Geneva, Switzerland.
- World Health Organization. (2004). *Promoting mental health. Concepts, emerging evidence, practice*. Geneva, Switzerland.
- World Health Organization. (2007). *Meeting of the international advisory group for the revision of ICD-10 mental and behavioral disorders*. Geneva, Switzerland.
- World Health Organization. (2007b). *Disabilities*. Retrieved October 1, 2007, from <http://www.who.int/topics/disabilities/en/>