

# Ergonomic



**W**hat is a reasonable amount of work to ask a person to perform? This is an age-old question. The Egyptian Book of the Dead, circa 150 B.C., cites this as part of a prayer that must be recited to be admitted into the underworld: "I did not ask anyone to work past their abilities." The modern era poses conflicting priorities and restrictions that affect the answer to this question today.

From a traditional industrial engineering approach, job requirements and machines are designed around a certain population set, often 90% to 95% of the working population. However, when design parameters become more inclusive of a greater percentage of the population, the cost of workstation design and set-up increases exponentially. Therefore, by definition, the design parameters exclude or discriminate against a certain percentage of the population.

An example of this contradiction is the NIOSH (2001) Work Practices Guide. This ergonomic model continues to be the gold standard regarding material handling. However, its recommended weight limit calculates a safe lifting limit for 99% of 40-year-old men and 75% of 40-year-old women. Even when a company complies with the guide, 25% of 40-year-old women, 1% of men and workers over age 40 are at potentially unacceptable risk for ergonomic injury.

While companies strive to minimize work-related injuries, they also must comply with state and federal disability laws when placing workers with disabilities. In addition, in a labor market where skilled and qualified workers are in increasingly high demand, from an operational sense, it is important to place qualified workers whenever possible.

Ergonomic data are important not only in engineering jobs to be as safe as possible, but also in addressing the human side of the human-machine interface. Ergonomic data allow an employer to answer important questions such as, What are the minimal acceptable abilities that are reasonable to require of a worker prior to placing an individual into the job? What is the cost and ergonomic impact of accommodating an individual with restrictions?

## IN BRIEF

- Key elements in design of a postoffer preemployment testing program include identifying job demands, methods to identify preexisting medical conditions and the development of appropriate functional testing based on job demands.
- SH&E professionals and testing providers can also use ergonomic data to assign and interpret medical restrictions during the postoffer preemployment testing process.
- SH&E professionals must also understand the accommodations process for individuals with medical restrictions along with federal and state guidance on preemployment testing.

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# Data

## Its Use in Effective & Defensible Preemployment Programs

By Eric Blankenheim, Connie Korth, Julie Baumann and Melissa Samuels

### Postoffer Testing Issues: Federal Guidance & Laws

An employer that implements a postoffer testing procedure must be mindful of the numerous federal and state laws that apply to such tests. Certain types of tests, including physical ability strength tests and the performance of simulated job tasks, may have the unintended consequence of screening out members of certain legally protected classes. Such results raise some of the concerns that antidiscrimination laws, such as Title VII of the Civil Rights Act of 1964 (42 USC § 2000e-2000e-17), were enacted to address.

In addition, Americans with Disabilities Act of 1990 (ADA), Age Discrimination in Employment Act of 1967 (ADEA) and the Uniform Guidelines on Employee Selection Procedures of 1978 (UGESP) all address employment testing and selection procedures in some manner. (Readers are advised to seek legal counsel on state-specific laws that may impose additional obligations in the context of postemployment testing. An individualized state-specific discussion is outside this article's scope.)

### Title VII

Title VII prohibits discrimination on the basis of an individual's race, color, religion, national origin or sex (42 USC § 2000e-20003-2). Two types of dis-

crimination fall under Title VII: disparate treatment and disparate impact. Disparate treatment requires an intent to discriminate against an individual because that person is a member of a legally protected class. Disparate impact does not require intent; rather, disparate impact occurs when a facially neutral employment practice, such as certain postoffer tests, disproportionately affects members of a protected class [42 USC § 2000e-2(k)]. While Title VII allows the use of postoffer testing, it prohibits tests that have the intentional—or unintentional—effect of discriminating on the basis of an individual's race, color, religion, national origin or sex.

When utilizing postoffer employment testing, employers should be most aware of the possibility of disparate impact. For example, physical strength tests, while facially neutral, may have a disparate impact on female applicants or employees, disproportionately excluding them from employment selection. U.S. Equal Employment Opportunity Commission (EEOC) and other federal agencies may use the "4/5 rule" to determine whether an employment test has an adverse impact on a protected class. A selection rate for members of a particular protected class, such as sex, which is less than 80% (or 4/5) of the selection rate for the group with the highest selection rate is generally regarded as evidence of adverse impact.

If a postoffer employment test results in an adverse impact on members of a protected class, it may be deemed discriminatory unless the employer can show that the process has been validated. [UGESP recognizes three types of validity standards: 1) criterion-related; 2) content validity; and 3) construct validity.] The U.S. Supreme Court also has held that an employer may defend such a test by showing that it is related to job performance and consistent with business necessity [*Griggs v. Duke Power Co.*, 401 U.S. 424 (1971)]. To demonstrate “job-relatedness,” the employer must prove that it is necessary to the safe and efficient performance of the job. According to the EEOC (2007), the challenged policy or practice should, therefore, be associated with the skills needed to perform the job successfully. Even if the employer can demonstrate that the policy or practice is job related and consistent with business necessity, it may not be lawful if a less discriminatory alternative is available (*Griggs v. Duke Power Co.*, 1971). Therefore, an employer must fully understand the duties of the position and the skills needed to perform those duties.

#### **Americans With Disabilities Act**

ADA prohibits employers from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, promotion, and other employment terms and conditions. A “qualified individual with a disability” is someone who, with or without a reasonable accommodation, can perform the essential functions of the job in question. Reasonable accommodations are adjustments or modifications provided by an employer to enable people with disabilities to enjoy equal employment opportunities.

The accommodation obligation under ADA arises not only during periods of active employment, but also extends to postoffer test administration and to those situations in which a functional limitation is discovered or disclosed during the postoffer process. Once a functional limitation has been discovered, the employer is statutorily obligated to identify and provide a reasonable accommodation to the otherwise qualified disabled individual, unless doing so presents an undue hardship.

ADA also governs the types of medical inquiries an employer may make during the course of the employment relationship. These inquiries are divided into three categories: preoffer, postoffer and employment. Before making an offer of employment, an employer cannot make a disability-related inquiry. The reason for this prohibition is obvious: ADA seeks to prevent employers from making employment decisions based on medical information, rather than on an objective assessment of the applicant’s knowledge, skills and abilities to perform the duties of the position.

Once a job offer has been made, an employer may make medical inquiries or require medical examinations provided that it does so for all employees in the particular job category [EEOC, 1995; *O’Neal v. City of New Albany*, 293 F.3d 998 (7th Cir. 2002)]. Finally, during the employment relation-

ship, an employer may ask questions about disabilities or require medical examinations only if doing so is job-related and consistent with business necessity.

Because of the many obligations these laws impose on employers, it is crucial to have postoffer employment tests that can withstand legal scrutiny. EEOC (2007) has articulated several best practices to ensure that an employer’s testing and selection procedures comply with applicable law:

- Employers should administer employment tests without regard to race, color, religion, national origin, sex, age or disability.

- Employment tests and other selection procedures should be validated for the particular position. The test or selection procedure must be job related. Even if an employer uses a third-party test vendor, it ultimately is the employer’s responsibility to ensure the validity of the tests.

- If the test has a disparate impact on a protected group (e.g., a lifting test disproportionately screens out women), the employer should determine whether a less discriminatory alternative exists for achieving the same results; that is, a different test or selection procedure that will accurately predict performance, but will not screen women out.

- Employers must be aware of current job requirements. Because the purpose of employment tests and selection procedures is to assist in determining whether an individual is capable of performing a specific job or job duty, it is critical that the test accurately reflects the duties of the position (EEOC, 2007).

#### **Strategies of Supporting Job Analysis for a Postoffer Program**

It is not adequate to simply document a job’s essential functions. A job’s secondary or support functions could create a risk to some workers as well. To design a prevention program and help address possible future accommodation issues, one must break down the components of all the job’s functions. Human performance may be evaluated as follows:

- Musculoskeletal: Gross motor, whole body movements including lifting and strength components.

- Sensorimotor: Typically considered fine motor but any task that requires use of light touch, good proprioceptive skills or rapid hand motions with minimal force. Examples include pinching, threading and writing.

- Perceptual-motor: Tasks involve perceiving a changing environment and making the correct motor response. Examples would include driving, tracking on a computer screen or any balance-critical task. Perceptual-motor skills are critical with most sports participation.

- Perceptual-cognitive: Tasks involve perceiving and correctly interpreting different levels of stimuli. This could include quality inspection, ensuring both by sight and sound that a machine is running correctly, or any type of job that requires taste or smell interpretation.



- Cognitive: Aspects of the job that require higher-level thinking or creative work.

Many jobs or individual job tasks have multiple components of these human performance areas. For example, driving a fork truck encompasses:

- musculoskeletal requirements to turn the wheel and rotate the neck;

- sensorimotor requirements to operate the foot controls correctly;

- perceptual-motor requirements of navigating the fork truck and the load;

- perceptual-cognitive skills regarding safety awareness;

- cognitive requirements related to understanding the load ratio and other safety constraints.

Although human factor components may overlap, it is still useful to look at the critical aspects of the job in this regard. By evaluating the areas of human performance first, it is easier to identify key components of a job that will predict worker success in other areas. For example, a worker performing a 40-lb lift that requires awkward mechanics may be more problematic than a 50-lb lift performed with the weight close to the body.

The job can then be broken down further into physical, sensory and mental aspects. From there, one can separate the essential functions from secondary functions with a clear supporting rationale. Lastly, the ergonomic stressors specific to each body part can be quantified. Regardless of the job's essential functions, if an employee is placed in a job where s/he is asked to complete a task that s/he does not have the physical, sensory or mental ability to complete, a negative outcome is likely.

A job analysis that clearly defines the physical, mental and sensory demands of the job along with body-part-specific ergonomic data can be useful well beyond postoffer testing. Comprehensive job analyses can be used for work-related and non-work-related injury management, accommodation assessments, job rotation and work-specific exercise programs. Use of the job analyses system provides data for better management of short- and long-term disability, Family Medical Leave Act (FMLA) and workers' compensation claims. Job analysis with good ergonomic data should also be sent to a physician for fitness-for-duty evaluations along with a letter that asks the professional to directly reference the information contained within the job analysis.

A job analysis is useful in determining whether an injury occurred at work. A report that quantifies ergonomic data helps employers manage the case, supports the independent medical exam and, ultimately, informs the settlement of the overall claim.

### **Identifying Preexisting Conditions That May Be Inconsistent With Safe Placement**

To understand what should be involved in a postoffer testing program, it is useful to understand how such testing has evolved over the years thanks to advances in medicine, an increased knowledge of what is effective in testing, and in response to laws passed to protect workers (e.g., state and federal disability laws).

Occupational injuries have been recorded for thousands of years, dating back to 2700 B.C. when Egyptian physicians treated construction workers at pyramids (Brandt-Rauf & Brandt-Rauf, 1987). While occupational injuries have been documented for thousands of years, literature on the use of postoffer testing dates back nearly 100 years. In the 1920s, X-rays were used to detect back abnormalities, and it was concluded that applicants with abnormal X-rays could not be placed into work positions (Bohart, 1929). By the 1960s, the use of the X-ray began to be questioned (Rowe, 1969).

Traditionally, postoffer testing did not focus on functional testing of applicants. Houghton, Edmonson-Jones and Harris (1989) used verbal questionnaires without functional testing and found that the questionnaires alone had no significance on the outcome of posthire illness behavior (Houghton, et al., 1989). Many companies turned to standard medical exams by physicians that did not offer consistent outcomes.

With passage of ADA in 1990 and in the wake of more stringent state laws, significant concerns arose over hiring an applicant who may have a medical condition. In some cases, a lack of understanding of the laws protecting applicants led to ineffective testing programs that were not defensible. Other providers responded favorably by developing specific procedures and protocols to follow in the event that an applicant presents with a medical condition. Presently, the need remains to identify applicants with medical conditions and to thoroughly evaluate those applicants' abilities in order to inform work placement considerations.

### **Key Components in a Postoffer Testing Program**

While postoffer tests take many forms, all testing programs should include several key components:

- a medical history with specific rationale regarding why the question is asked relating to job duties;
- clinical testing to identify preexisting conditions and compare findings to job risk factors;
- a functional test that is related to the job demands through specific rationales for each test and validation from current workers.

### **Medical History Tied to Job Duties**

An applicant's medical history can be gathered in several ways. It is recommended that all applicants complete a medical questionnaire. Each question relating to the applicant's medical history should be specifically tied to the job duties with a thorough rationale. Special care should be taken in developing a medical questionnaire to ensure that the applicant's rights under the Genetic Information Nondiscrimination Act are protected.

The medical history completed during a postoffer test can help the administering clinician identify medical conditions to further assess in the clinical evaluation portion of the test. The questionnaire also can help identify conditions that may put the applicant at risk during the functional portion of the postoffer test or in the work environment.

The medical questionnaire must include in-



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formed consent in which the applicant acknowledges understanding that omitting information or misrepresenting oneself on the questionnaire can be grounds for dismissal from employment. The administering clinician should review the medical questionnaire with the applicant and document specific information that may be useful in identifying conditions that may put the applicant at risk.

### *Clinical Testing*

While preexisting conditions can be identified in various ways, not all methods are predictive and valid. Historically, diagnostic testing such as X-rays and MRIs were used to detect preexisting conditions. While these types of diagnostic studies can identify an abnormal pathology, the literature does not support the use of diagnostic studies as they do not have true predictive value of an individual's physical limitations. For example, Torgerson and Dotter (1976) found that 47% of people diagnosed with spondylosis by X-ray were asymptomatic.

In addition to diagnostic studies, the medical community has used standard medical exams without specific clinical testing for years. These exams include an assessment of an applicant's overall wellness, along with a basic musculoskeletal assessment. Job risk factors are not considered, as the main focus is the applicant's overall wellness. Because only basic musculoskeletal information is evaluated and findings are not compared to job risk factors, these standard medical exams historically have offered little help in identifying preexisting conditions that may limit an applicant's ability to perform work.

While standard medical exams and diagnostic testing may not offer sufficient predictive outcomes, a well-designed comprehensive clinical test can be highly effective in identifying preexisting conditions. Comprehensive clinical tests should include specific testing for each body part. Occupational and physical therapists can perform many clinical tests with high predictive value for each body part. For example, the therapist can complete specific clinical testing to evaluate the strength of an applicant's rotator cuff. If rotator cuff strength is compromised, the findings from clinical tests would be positive.

Identifying preexisting conditions and limitations is effective only if findings are compared to job risk factors. If testing reveals that an applicant has difficulty with kneeling only and the job does not require kneeling, the applicant may need no restrictions for this specific job. Yet, if testing shows that a candidate has significant rotator cuff weakness and the job has high risk factors for the shoulder, the applicant may need specific restrictions to ensure his/her safety in completing the job.

The administering clinician must have a good understanding of the appropriate behavioral response of the applicant to each specific clinical test. This is important as an applicant may not always be forthcoming about pain s/he experiences during clinical testing. Therefore, the test provider must pay close attention to the applicant's response to each test. Ramney (2010) identified several signs of pain

that may have organic causes. These signs include superficial tenderness; nonanatomical tenderness; pain on axial loading; pain on simulated rotation; distracted straight leg rise; regional sensory change; regional weakness; and overreaction. A clinician's ability to assess for these signs of pain can help establish the applicant's limitations.

While the behavioral response can help identify positive clinical findings, some findings are purely objective. For example, monofilaments can be used to assess light touch sensation while the applicant is blindfolded. A provider can visually evaluate arterial refill to the hands. In addition, a provider can use a dynamometer to test grip strength and a pinch gauge to test pinch strengths. Both grip and pinch strengths have normative data specific to gender and age.

### *The Functional Test*

While the medical questionnaire and musculoskeletal screen are important tools in a postoffer test to assess for the presence and severity of conditions, the functional test is the ultimate tool to assess an applicant's ability to complete specific job duties. Chaffin, Herrin and Keyserling (1976) found that the likelihood of a back injury or musculoskeletal injury increased when a job's lifting requirements approached or exceeded the strength capability demonstrated on an isometric job simulation. Therefore, the postoffer test must evaluate an applicant's ability to meet the position's functional demands.

### **Functional Testing Techniques**

Functional testing techniques vary considerably between postoffer testing providers. Strength tests vary with the type of movements being tested, functionality of testing and cost of the equipment involved for testing. Typical approaches for strength testing are as follows:

- **Isometric.** Same movement. Individual will typically pull against a strain gauge.
- **Isokinetic.** Same speed. Individual produces force against a machine that is set to move at a certain speed and subsequently the force curve is computed.
- **Isotonic.** Same force. The machine produces the same level of force at all times and the speed of motion the worker is able to generate against that same force is tracked.
- **Isoinertial.** As with free weights, the inertial stays the same; however, typically the force and the force vector of a lift or other motion may change with an acceleration and deceleration phase of a motion.

The isoinertial approach toward strength testing has clear advantages. This approach has the most surface validity because actual objects used on the job can be utilized in the testing protocol. It is important to note that the initial acceleration phase of an actual lift can require up to 20% greater force than the actual weight of the object, secondary to acceleration.

Furthermore, the speed of a forceful motion is rarely uniform; it has acceleration and deceleration

phases. Eccentric or lengthening contractions also have important body mechanics, physiological and functional considerations. Isoinertial is the only cost-effective technology that allows for acceleration, changes in force vectors and eccentric contractions. Fortunately, isoinertial testing is the least expensive and requires little or no maintenance since free weights or actual work objects can be used.

In an isoinertial testing program, a thoughtful testing protocol is needed to measure maximum volitional effort (MVE) with control, as it may be quite different compared to a one-time maximum effort with potential overrecruitment. Snook and Ciriello (1991) used the MVE approach to develop the maximum perceived exertion data and this approach is common in functional capacities evaluations.

In addition to strength testing with the support of ergonomic data, many other aspects of human performance may be tested.

1) Cardiovascular testing protocols such as a step test, treadmill test and other methods of measuring maximum acceptable cardiac output can be compared to a job's actual energy requirements. The job energy requirements can be calculated through modeling or direct heart rate data of the worker.

2) Sensorimotor tests may be compared with traditional industrial engineering time studies to determine if the worker has the fine motor dexterity to complete the job.

3) Other tests include color discrimination, figure/ground, attention to detail, and ability to complete multiple steps and instructions, all of which may be relevant depending on the job in question.

### **Logistic Strategies for Implementing a Postoffer Testing Program**

While the medical questionnaire, the clinical test and the functional test are key components for all postoffer testing programs, the interpretation of the findings from these components is critical to the success of any postoffer testing program.

Harbin, Shenoy, Garcia, et al. (2011), specifically reviewed the effect of postoffer testing and shoulder injury rates. A 6-year study found a 37% decrease in medical costs for shoulder and other work-related injuries. For every dollar spent on postoffer testing, a \$14 savings in medical costs was reported. According to Harbin, et al. (2011), "It is evident that a properly conceived and implemented postoffer testing program may help in the reduction of work-related injuries."

The challenge for employers is to find a testing provider that can implement an effective, legally defensible program. The key is a central decision maker who helps the clinicians conducting the testing. This individual interprets test findings and serves as a liaison in developing an appropriate set of restrictions for an applicant with a medical condition. Ultimately, the employer may use the set of restrictions in the accommodations process.

At times, employers may need a provider that can service locations throughout a state or across the U.S. Multisite employers may have difficulty communicating with numerous providers that in-

terpret and communicate results in different ways. This can lead to frustration with the complexity and inconsistency of results. To obtain consistent, legally defensible results, it is strongly recommended that a multisite employer seek a provider that interprets and communicates findings from one central location. This centralized oversight is crucial in identifying applicants' physical limitations.

### **Interpreting Restrictions Based on Ergonomic Data**

In addition to identifying preexisting conditions that may affect a worker's ability to perform a job, testing helps determine medically necessary restrictions that can be interpreted and applied to the specific job an applicant will be performing. While seldom used for this purpose, ergonomic data and models offer a valuable set of tools to the medical community for this purpose.

•Example one. A medical questionnaire or a clinical test during the postoffer process indicates that an applicant has distal nerve symptoms consistent with significant carpal tunnel syndrome. Unless the condition has developed to the point of muscle atrophy or loss of protective sensation of the fingertips, the applicant likely would be able to perform essential job functions for a short period. The question is, "Does this person need medical restrictions to prevent the case from being significantly aggravated?" To this end, it is essential that medical restrictions be established regarding the individual's ability to perform hand-intensive work.

•Example two. A medical questionnaire or clinical test indicates a significant low-back spondylosis. In this case, the applicant may be strong enough to perform essential job functions; however, s/he may need medical restrictions, particularly regarding lifting or hyperextension of the back.

In both cases, while it is unacceptable to uniformly discriminate against an applicant and not hire simply because s/he has a medical condition, it is also unreasonable to place that individual into a position where the best available medical authority believes the work will cause harm.

Additional research is greatly needed in the area of establishing medical restrictions. In the post-orthopedic-surgery world, some well-established protocols exist for restrictions, but for most other chronic conditions, the process relies heavily on the expertise of the medical practitioner. Ergonomic data can help this practitioner determine restrictions. For example, the Strain Index is a helpful tool to establish risk specific to carpal tunnel syndrome (Moore & Garg, 1995). For a worker with active carpal tunnel syndrome, the physician can make a quantifiable restriction such as "Strain Index should be under 4.0."

The authors contend that the validity, reliability and ability to interpret the restriction specifically to the manufacturing environment would greatly increase with this level of restriction. In the spondylosis example, it may be possible to indicate that the individual needs a restriction under 1.0 per the NIOSH (2001) Work Practices Guide (under 0.5 in the case of a severe condition).



**In addition to identifying preexisting conditions that may affect a worker's ability to perform a job, testing helps determine medically necessary restrictions.**



Although these models were not designed for managing individuals with preexisting conditions, they are some of the best available tools for quantifying ergonomic risk factors per the job. Therefore, it makes sense to use them when establishing medical restrictions. Other ergonomic tools that could prove useful in this area include University of Michigan 3-D Static Strength software, which could be effective across multiple body parts; Snook psychometric data tables (Snook & Ciriello, 1991); and other tools that enable one to quantify the risk factors per body part or assess strength abilities.

Typically, it is not as helpful to use tools such as hand/arm assessment tools (e.g., RULA) that assess total stress across multiple body parts since a medical restriction is usually specific to one body part. Care must also be taken regarding the skill of the individuals using these tools. Assessments conducted by floor-level associates or an ergonomics team may not have the reliability necessary regarding medical placement issues.

### Accommodating Individuals With Restrictions

Inevitably, the postoffer testing process will identify a functional limitation that affects an individual's ability to perform the essential functions of the position. When that occurs, the employer may withdraw a conditional offer of employment. Should the rejected individual subsequently allege discrimination, however, the employer will be required to show that 1) its decision was job-related and consistent with business necessity; and 2) the restriction could not be reduced or eliminated by a reasonable accommodation. As noted, if an accommodation is available that effectively removes the barrier to successful performance and provides the individual with an equal employment opportunity, the employer must provide it, unless doing so creates an undue hardship.

Postoffer testing also occasionally reveals that an individual may be unable to perform the essential duties of the position because of safety concerns. In such cases, the employer must be prepared to show that the employee is a direct threat to him/herself or others (Regulations to Implement the Equal Employment Provisions of ADA, 29 CFR § 1630.2, 2013). "Direct threat" means the person poses a "significant risk" of "substantial harm" to himself or others. A direct threat defense cannot be speculative and should be supported by objective medical evidence. Again, the employer must demonstrate that the threat cannot be sufficiently reduced or eliminated through a reasonable accommodation.

EEOC (2002) offers examples of postoffer decisions that may be job-related and consistent with business necessity and where no reasonable accommodation was possible:

- A medical history shows an individual has injured his back numerous times doing the same type of work for which he is currently being considered. Each subsequent injury has worsened the back condition. Hiring the person would entail significant risk that he would reinjure himself.

- A medical examination reveals an impairment that would require the individual's frequent absence from work for medical treatment. The job at issue requires daily availability for the next 3 months. As a result, this individual is not qualified to perform the essential functions of the job and no accommodation is available.

Alternatively, a discriminatory use of a postoffer medical examination would occur when an employer rejects an applicant who, due to a medical condition, cannot lift 50 lb despite the job requiring only occasional lifting of 50 lb, and the employer does not consider possible accommodations, such as sharing the lifting duties with another employee or providing a lifting device.

While an employer has a statutory duty to attempt to accommodate the known disabilities of a qualified disabled individual, it is important to note that an employer is required only to provide an accommodation that is reasonable. Many courts that have addressed the general definition of reasonable accommodation have found that whether an accommodation is reasonable may depend on whether the cost of providing the accommodation outweighs the benefits [*Skerski v. Time Warner Cable Co.*, 257 F.3d 273 (3rd Cir. 2001); *Vande Zande v. Wis. Dept. of Administration*, 44 F.3d 538 (7th Cir. 1995)]. EEOC (2002) does not appear to agree with this analysis, however.

ADA (2002) provides examples of common types of reasonable accommodations that an employer may need to provide on discovery of an individual's functional or safety limitations, although an employer's obligation is not limited to these particular accommodations:

- Make facilities accessible to and usable by the person with a disability.
- Restructure the job by reallocating marginal job functions.
- Allow changes in the ways in which an essential job function is performed.
- Obtain or modify equipment or devices (29 CFR § 1630.2).

While an employer may need to reallocate a job's marginal duties by way of reasonable accommodation, ADA does not require the employer to eliminate or reallocate the essential functions of a job [*Richardson v. Friendly Ice Cream*, 594 F.3d 69 (1st Cir. 2010)]. Again, however, an employer may need to allow changes in how an essential function is performed [*EEOC v. Wal-Mart Stores Inc.*, 477 F.3d 561 (8th Cir. 2007)]. In addition, the law does not require an employer to lower its quality or production standards in an effort to reasonably accommodate a disabled individual [*Hoffman v. Caterpillar Inc.*, 256 F.3d 568 (7th Cir. 2001)]. Indeed, the disabled employee may be held to the same performance standards as nondisabled employees.

The reasonable accommodation process should focus on the individual's abilities and functional limitations and the specific functional requirements of the job. The goal of the process is to help the individual to successfully perform the functional requirements in any reasonable way pos-

sible. This is an individualized assessment and the individual's participation may be invaluable. Often, s/he will have insight into his/her own abilities and challenges presented by the limitation that the employer may not have. Similarly, the employer may possess knowledge and information relating to the duties of the position and alternative performance methods that the employee may not have.

EEOC suggests the following process for identifying reasonable accommodations for individuals with restrictions:

1) Determine the purpose and essential functions of the particular job.

2) Discuss with the disabled individual his/her specific physical or mental disabilities and limitations and how they relate to the essential job functions.

3) With the individual's input, identify potential accommodations and evaluate whether the accommodation would enable the individual to perform the essential job functions.

4) If a reasonable accommodation cannot be identified through this process, the employer should contact technical assistance resources, such as the ADA Regional Business and Disability Technical Assistance Center, to obtain information regarding possible accommodation or local technical assistance sources. Employers should also consider contacting the Job Accommodation Network, a free consulting service on accommodations. Employers should determine whether any outside funding is available for any identified accommodation, perhaps through a state rehabilitation agency. Federal tax credits and tax deductions also may be available to employers who are providing certain accommodations.

5) If more than one accommodation is identified that would remove the barrier to employment, the employer may select which accommodation it wishes to provide. The employer is not required to select the accommodation the individual prefers, but the accommodation selected must be effective. If an accommodation is deemed cost-prohibitive after an undue hardship analysis, the applicant or employee should be offered an opportunity to contribute to the cost of the accommodation (EEOC, 2002).

### **Undue Hardship**

An undue hardship is defined as an action that is "[e]xcessively costly, extensive, or disruptive, or that would fundamentally alter the nature or operation of the business" (ADA, 2011). Similar to a direct threat analysis, undue hardship cannot be based on speculation; it "must be based on an individualized assessment of current circumstances that show that a specific reasonable accommodation would cause significant difficulty or expense" (EEOC, 2002).

A determination of undue hardship should be based on:

- nature and net cost of the accommodation;
- financial resources of the facility, the number of employees at the facility, the effect on expenses and resources, or other effect on the facility's operation;
- company's overall financial resources, size of the business, number, type and location of its facilities;

•type of operation including the composition, structure and functions of the workforce (EEOC, 2011).

If an accommodation unduly disrupts other employees' ability to work, it may be found to be an undue hardship. Courts have found that accommodations that result in other employees working "harder or longer" hours or accommodations that "adversely impact other employees' ability to do their jobs" may constitute undue hardship [*Mason v. Avaya Communications Inc.*, 357 F.3d 1114 (10th Cir. 2004)].

Notwithstanding the laws that impose the affirmative obligation on employers to accommodate disabilities, some employers still bristle at the prospect of complying with these laws. However, absent undue hardship, employers are legally required to accommodate the known disability of an applicant and/or employee. There simply is no legal way to avoid at least engaging in the interactive process of accommodation once a disability that limits the individual's ability to perform certain duties has been confirmed by the postoffer testing process. The benefits of doing so far outweigh the risks.

Rather than dismiss the accommodation process, employers should recognize that identifying and accommodating a restriction may benefit both the employer and the employee and may be far less onerous than the employer fears. The employer and employee may together identify a reasonable accommodation that ultimately provides the employer with a capable, long-term employee and provides the employee with stable employment.

### **Cost-Benefit Analysis of a Postoffer Testing Program**

The costs for implementing a postoffer testing program may include the following:

- consulting fees to develop the program;
- direct cost of each test;
- administrative costs associated with scheduling, communicating results and similar elements;
- cost of replacing applicants who exit the process without employment;
- cost of completing an accommodation assessment when a worker is found to have a condition.

The main benefit of such a program is to decrease the occurrence and cost of injuries for new employees within the first year of employment. An effective program also will help to identify applicants with conditions that require work restrictions to help employers with safe placement.

Avoiding injuries to new workers generates significant cost savings. BLS (2012) indicates that 23% of all injuries occur within the first year of employment. According to Workers' Compensation Insurance Rating Bureau of California (2004), an average back claim can cost between \$33,000 and \$53,000. According to New Choice Health, the average cost of a knee injury claim ranges between \$12,000 and \$18,000. Avoiding injuries also generates indirect savings, with some estimates suggesting between 1 and 4 times the direct costs.

Typically, if an employer can prevent one injury for every 400 hires, a postoffer testing program will



**The reasonable accommodation process should focus on the individual's abilities and functional limitations and the specific functional requirements of the job.**



**Table 1**

## Cost Savings: Postoffer Tests

	2011 costs (before postoffer testing)	2012 costs (after postoffer testing)
Cost of injuries	\$435,000	\$900
Cost of program implementation		\$70,125
<b>Total</b>	<b>\$435,000</b>	<b>\$71,025</b>
Estimated cost avoidance	\$363,975	

be cost effective. The actual cost savings largely depends on the nature of the work being performed, workforce demographics and the effectiveness of the testing systems.

Consider these brief anecdotes on cost savings associated with postoffer testing programs.

- A multisite employer with more than 100 sites throughout the U.S. began postoffer testing in 2012. Prior to testing in 2011, the company had workers' compensation costs in excess of \$400,000 for new hires within the first year of employment. After implementing the program, that figure dropped to \$900 for new hires (Table 1).

- A large employer reports that postoffer testing was equivalent to \$2 million in sales.

- More than 4,000 postoffer tests were completed for one national employer over the course of 6 years. Of the applicants tested, six developed musculoskeletal injuries in the first year of employment. This company experienced a 0.15% musculoskeletal injury rate occurring in the first year.

### Conclusion

With companies being challenged to minimize work-related injuries, preemployment testing is key to identifying applicants who are not able to complete job demands. Preemployment testing also helps an employer determine appropriate restrictions for applicants with medical conditions to initiate the accommodations process. Before beginning a program, a company must understand the accommodations process as well as relevant EEOC and ADA guidelines.

Not all preemployment testing programs are created alike and not all are effective and legally defensible. The selected provided must understand relevant ADA and EEOC guidelines and follow proven methods for test development and restriction identification. In addition, a provider with a firm understanding of the use ergonomic data to assign and interpret restrictions can prove helpful in the accommodations process initiated for applicants identified as having medical conditions. **PS**

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