

Fit for Duty Functional Testing for New Hires and Return to Work

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Introduction

The Occupational Safety and Health Administration (OSHA) considers proper matching of employees to the job as being instrumental to injury prevention. The purpose of this paper is to describe a functional testing process that can be legally and effectively used to identify whether or not an individual is able to perform the essential physical functions of a particular job prior to job placement. The functional testing program described in this paper is designed to meet the standards of the Amended Americans with Disabilities Act (ADAAA) and avoid disparate discrimination as required by the Equal Employment Opportunity Commission (EEOC).

Fit for Duty Functional Testing of New Hires

Functional capacity testing that involves a physical examination and monitoring of heart rate and blood pressure constitutes a medical test, and as such, cannot be conducted on a applicant for a job until a conditional offer of hire had been made to the applicant. Therefore, it is improper to call such a test a “pre-employment test”. The correct terminology is “post-offer, pre-placement functional capacity test”, referred to from hereon as simply “PPFT”.

The PPFT is a functional-based examination that is designed to help identify persons with and without medical conditions, impairments or disabilities in order to determine if they will be placed at imminent risk of injury or pose a risk to co-workers when required to perform essential functions of a job. By performing functional testing, an employer can also determine if a person without a medical problem or disability has sufficient strength, flexibility, and cardiovascular fitness to perform the minimum essential functions of a job. If such a test accurately represents true essential job functions, it can be considered valid and nondiscriminatory. Since functional tests are considered forms of physical stress tests, it is prudent to conduct a detailed physical examination on the conditional new hire before allowing that person to become engaged in physical demanding tests. This is necessary to reduce the risk of injuries during functional testing.

There are various forms of functional abilities testing currently being used today. To be legally performed, employers should ensure that the testing protocol is fully compliant with the

EEOC and ADA by ensuring the absence of disparate discrimination in the functional test design.

This is accomplished by testing the ability of individuals to perform only the essential functions of a particular job prior to placement in that job. Early testing was flawed with inconsistency in testing methodology and the inability to correlate certain tests to the specific physical requirements of the job. Many functional abilities testing programs were designed and implemented with a wide variety of testing procedures and philosophies being developed. In many settings, early functional abilities testing were successful in reducing the incidence of injury. However, many potential workers were discriminated against due to various testing protocols being subjective and not necessarily related to the actual physical demands of the job.

The Impact of the Americans with Disabilities Act (ADA)

In 1990, the United States Congress enacted the Americans with Disabilities Act (ADA) which was amended to be more far reaching in 2009. With its passage into law, sweeping changes were mandated in the area of medical and functional abilities testing as it related to employment hiring practices. Employers were no longer able to make medical inquiries, or conduct a medical examination, until after a job offer was made. Medical examinations were required to be job-related and had to be essential to the function(s) of the job. This meant that a functional abilities test had to correlate specific test components to specific essential tasks required for the performance of the job. This, in turn, caused medical providers to reassess their testing protocols to insure that the tests were true and valid measurements of the essential functions of that particular job. Since the passage of the ADA, medical professionals have had to take a narrower and more focused approach to functional testing when used in a pre-placement, post-hiring context.

With the advent of the Americans with Disabilities Act in 1991, an emphasis was made on testing the abilities of a person to conduct a job safely regardless of real or perceived disability. This foundation established by ADA regulation led to an evolution in medical testing that shifted from speculation based on standard medical exams to job-specific functional testing to assess risk of injury. In order to properly “match” the worker’s physical capabilities to the physical demands of the job, medical testing became dependent on content validity derived from job analyses.

The underlying premise of this type of testing lies in the question of predictability. Can functional abilities testing be used to predict which individuals are at the highest risk of becoming injured? Testing methodology can vary in type, as well as in value.

Some studies using isometric, isokinetic, and dynamic strength testing have shown that workers who demonstrated insufficient strength to meet the physical demands of the job, were at an increased risk of injury. Other research studies have shown that computerized isokinetic and isometric strength testing have no value in employee selection, nor the prediction of back injury. Dynamic (isotonic) lifting capacities have been used to attempt to correlate certain postural lifts to a level of functional ability in workers. Matheson, Isernhagen and Hart demonstrated that the use of lifting tests had a positive relationship to the return to work levels of injured workers. Furthermore, decreased trunk flexibility and weak trunk strength have been found to contribute to lower back injury.

Research has also demonstrated that reductions in the incidence of musculoskeletal injuries can occur when standardized strength tests are used in the employment process. Workers who could demonstrate strength capabilities, exceeding the strength required in the performance of their jobs, had a lower incidence and severity of musculoskeletal injury. The results are dependent upon the quality of

the systematic evaluation of the worker and the performance standards of the task. The quality of the systematic evaluation is dependent upon the inter-rater reliability of the tasks as determined by the experience and the quality of the skills of the examiner. In addition, Gross and Battie found that the assessment of manual material handling is enhanced when the assessment occurs over more than one occasion in order to capture the variability in function.

As physical abilities testing progressed, it became apparent that the assessments and tests must reflect the real workplace. As job demands and characteristics vary, so must the means and methods of abilities testing. The measurements chosen must fit the circumstances and the demands of the specific job a worker has to perform. Evaluating the worker's capacity to perform the physical demands of a specific job is the key issue. The clinician must have the skills to measure the relevant physical demands of the job and the relevant capacities of the work.

Validity of Functional Testing

In order to avoid hiring discrimination, any determination of whether or not an employee can perform a job task safely must be based on a validated PPFT. Validation is most commonly based on data derived from on-site job analysis called a physical demand validation (PDV). A PDV is conducted using force, weight, distance and angle measurement tools, employee interviews and employee verification of data.

This type of validation that directly measures the physical demands of essential job tasks is referred to as "content validation". This is an acceptable method that can be used to design a PPFT that is not discriminatory. The U.S. Department of Labor has defined discrimination, as it relates to post-offer, pre-placement testing, as "the use of any selection procedure which has an adverse impact on the hiring, promotion, or other employment" of individuals (41 CFR 60-3.3). Consideration of suitable selection procedures may be determined to be discriminatory if not validated. The U.S. Department of Labor view three acceptable forms of validity studies: criterion-related, content, and construct validity. Evidence of the validity of a test or other selection procedure by a content validity study should consist of data showing that the content of the selection procedure is representative of important aspects of performance on the job for which the candidates are to be evaluated.

Physical demands validations (PDVs) involve detailed interviews of employee in each job title and a systematic job analysis which may be conducted by properly trained safety and ergonomic specialists. The PDV is essential to assess and measure the essential functional (or physical) demands of a job. Essential functional demands of the job can be defined as the minimum physical demands required of the worker in order to perform job functions that are considered to be of business necessity. For example, a task of transferring packages in a warehouse weighing 10 - 35 lbs from a delivery truck to a conveyor belt on a daily basis may be considered essential if other reasonable ergonomic solutions are not available or feasible. However, requiring an employee to lift a crate that weighs 100 pounds by himself or herself that is delivered once a month and can be handled by more than one employee or by a mechanical lift device, would not be considered an essential job function. In other words, requiring a conditional new hire to perform a lift test involving 100 pounds as the pass criterion for job placement, in this example, would fail to meet the legal requirement of content validity and would therefore not be an appropriate or valid test for hiring determination.

It is apparent then that the PDV process must be performed skillfully. A PDV should assess material handling demands (i.e., lifting, carrying, pushing and pulling) with an accurate

quantification of variables such as weights, dimensions of the material handled, frequency of handling, vertical distance at the origin and termination of the lift, distance the object is moved, horizontal distance of the material handled from the body, coupling characteristics, distance carried, etc.).

The PDV process should involve sampling heart rate responses during identified work cycles to estimate energy expenditure requirements. Once the PDV is completed, the results of this analysis is then translated into comprehensive functional job description (FJD) for each job analyzed. The initial draft of a FJD should then be submitted to review by employees and management personnel who are most knowledgeable about the job that was analyzed. Once the FJD is approved after the review process, data from the validated FJD can be used by the functional capacity testing clinician to customize the PPFT for proper content valid testing of job demands in the clinic.

Evaluation Design

Since all PPFTs are conducted only after a conditional offer of hire is presented to the applicant, medical questionnaires and baseline medical testing can be legally conducted in conjunction with job-specific functional tests. Baseline medical testing is beneficial for establishing pre-injury baseline data and recording of any pre-existing impairments. It also allows the testing clinician to assess any signs of a pre-existing medical condition that could warrant caution and a referral for a medical release prior to allowing the applicant to undergo the more physically strenuous components of job –specific functional testing.

The testing format of a PPFT is divided into two major components involving the following:

1. Baseline Physical Data Collection

- Musculoskeletal (e.g., posture, muscle strength, joint range of motion, etc)
- Neurological exam including assessment of reflexes, balance, and coordination
- Cardiovascular examination (e.g., recording of blood pressure and heart rate)
- Aerobic capacity testing (e.g. YMCA Step Test)
- Special tests as dictated by medical history (e.g. knees laxity test)

2. Validated Job-Specific Functional Tests

- Lifting and carrying
- Pushing and pulling
- Stair and ladder climbing
- Stooping, kneeling, squatting, reaching, etc.

Baseline measurements for resting heart rate and blood pressure, sit and reach flexibility, grip strength, joint range of motion, and aerobic fitness level are useful data to determine pre-injury status of the new hire. Impairments such as loss of range of motion, focalized muscle weakness,

and sensory loss may not actually interfere with job specific functions. The FCT allows objective recordings of these even though the impairments may not interfere with job placement.

The importance of recording pre-existing impairments exists in situations in which an on-the-job injury occurs. For example, when an employee injures his neck at work, without a pre-injury baseline recording, how does one know that the loss of range of motion in the neck recorded after the injury was a direct consequence of the injury? For instance, what if the impaired cervical range of motion was actually the result of a pre-existing football injury? Documented proof of loss of range of motion due to an old football injury, as used in this example, at the time of hire can potentially save the employer significant costs associated with a legal settlement for a physical impairment that was not caused by an injury at work.

Job-specific functional testing should include non-material tasks such as stair and/or ladder climbing. Dynamic lift tests are conducted to determine maximum safe lift capabilities. Prior to and during the PPFT, the applicants being tested should be instructed on proper body mechanics and safe lifting techniques. As a safety measure during lift testing, weights should gradually be added to a lift box on a progressive basis while assessing body mechanics, heart rate, and the person's perception of how stressful the lift becomes (using a lift stress or psychophysical chart). The determination of a person's maximum safe lift capacity is based on three primary criteria:

1. Kinesiological Assessment – Testing is terminated when changes in body mechanics during lifting begin to occur that involve compensatory body motions that signal inability to exhibit proper neuromuscular control.
2. Psychophysical Assessment – testing is terminated when the applicant reports on a psychophysical response chart a self-perceived rating of the weight being very heavy or too heavy to handle safely.
3. Symptomology: Testing is terminated if the applicant reports any symptoms such as pain, dizziness, numbness, pins and needles, nausea etc. that are deemed indicative of an adverse response to testing.

Additional job specific tests may include lift/carry and push/pull assessments. Heart rate and blood pressure are monitored carefully during tasks that are expected to create significant cardiovascular demands. Irregular and/or excessive heart rate and abnormal blood pressure responses resulted in termination of testing and referral to a medical physician.

Withdrawal of Conditional Offer of Hire

A conditional offer of employment may be withdrawn if the applicant is determined from testing to be unable to perform the functional abilities to perform the essential functions of the job without being at immediate risk of injury to self or co-workers. In some cases, medical concerns may be apparent prior to the actual job-specific functional testing component of the PPFT. The physical examination conducted prior to functional testing may reveal symptoms or a medical condition that renders the conditional new hire unsafe to undergo the physical demands of the job-specific work simulation tests. In such cases, the testing is terminated prior to any stressful functional tests. The individual is then informed of the finding and is instructed to consult a healthcare provider to assess and/or correct the problem and acquire a medical release in order to resume the functional testing process at a later date. The manner in which this is handled administratively by the testing clinic and employer is critical. The administrative handling of all cases that require test termination and a medical release must be conducted consistently and

equally at all times. This is essential to avoiding claims of disparate discrimination in the hiring process.

Employers must develop a policy for re-testing of conditional new hires who are determined to be unable to undergo functional testing due to a medical finding (e.g., high blood pressure) that is fair and equitable. This process should be a win-win relationship between parties, the prospective employee and employer. By making a prospective employee aware of a medical condition that requires treatment, the employer helps to ensure his/her safety at work. Once the identified condition is remedied, the employer can then complete the PPFT and place the individual in the job with reduced risk of injury.

There are some testing protocols that also include baseline strength and musculoskeletal assessments. The baseline data helps to provide a “snapshot” of the individual’s strength capacity and document any musculoskeletal deficits or abnormalities, at the time of hiring. This data is valuable in post-injury rehabilitation, should the employee sustain an injury. If there are significant musculoskeletal findings, the clinician may determine that the applicant is not capable of performing the job due to imminent medical risk of injury. This will trigger a requirement of the applicant to seek medical help and return with a medical release to undergo the PPFT. It is always best to provide a prospective employee in such cases with a customized medical release form that describes the job demands (i.e., a validated functional job description) and the actual job-simulated functional tests required in the PPFT for job placement.

The PPFT failure rate will vary depending on the physical demands level of the job. Based on a data base of over 64,000 PPFTs, a failure rate of around 5 - 8% can be expected for jobs classified in the medium physical demand level (PDL) classification. The failure rate is in the range of 9-12% for jobs that fall within the “heavy” PDL classification, and as high as 18- 23% in the “very heavy” PDL classification. PDL classifications in the United States are defined by the U.S. Department of Labor.

Fit for Duty Evaluations for Cause and Return to Work

A fit-for-duty evaluation can be performed at any time when an employee’s physical condition or functional ability is considered to be altered in a manner that poses a potential threat to his/her safety or to the safety of others. In order to help ensure safety, a fit-for-duty evaluation can be performed after a lost-time accident/injury, or non-work related injury, surgery, or illness that may have a negative impact on the individual’s abilities to perform job tasks safely.

The Fit-for-Duty examination will determine whether or not the employee can safely perform essential job duties, and provide a current assessment of safe maximum functional capabilities. The employee will be allowed to return to work when he/she demonstrates abilities that safely meet all the essential physical demand requirements of the job.

EEOC has providing 5 guidelines for employers to use for conducting a Fit-For-Duty Examination on incumbent employees:

1. Following a request for an accommodation or accommodations.
2. Observance of performance problems relate to a known medical condition.
3. Observance of symptoms indicating possible medical condition that threatens safety.

1. Receipt of “reliable information” that an employee has a medical condition that threatens safety.
2. Following return from leave when employer has a reasonable belief that employee’s ability may be impaired and threatens safety.

The following procedures are recommended in cases when an employee is to be returned to work after an injury or illness that has required medical treatment and may present potential adverse residual effects on his/her physical capacities to perform a job task or tasks safely.

1. A medical release must be obtained from the employee’s physician to signify the employee is ready to return to work.
3. The employee must contact the Human Resource Department to obtain authorization to schedule a Fit-for-Duty examination. This contact will also promote consistency in the way all employees are handled in these matters.
4. Once authorization is received, the employee will be given the appropriate information needed to schedule the appointment for the fit-for-duty evaluation.
5. The employer will be contacted by with the results of the fit-for-duty evaluation immediately following the examination.
6. Based on the results of the fit-for-duty evaluation, one of the following actions may be taken:
 - a. Employee will be allowed to return to work full duty.
 - b. Employee will be allowed to return to limited work and /or work with restrictions.
 - c. Employee will not be allowed to return to work and further administrative action will be initiated. The reasons for any failure to demonstrate safe abilities to perform the essential job tasks will be reviewed by human resources and a meeting with the employee will be arranged to discuss a plan of action.

Summary

PPFTs provide a highly effective functional testing system developed for new hires and also return-to-work cases that determine the physical abilities of an individual to safely perform the essential functions of a job. The evaluation includes a physical assessment followed by validated job-specific functional testing conducted in a safe and reliable manner. When designed correctly, the PPFT can be the most comprehensive and effective type of evaluation for employee testing that follows EEOC and ADA guidelines.

Although functional testing can prevent an injury of a new hire, or re-injury of an incumbent employee for return to work cases, there are other significant advantages of a functional examination that need to be pointed out. The functional examination can be used to measure pre-existing impairments that can be used for second injury fund coverage and/or avoidance of claims after an injury for an impairment that was pre-existing at the time of hire. For return to work cases, a job specific fit for duty functional examination can more objectively and accurately identify whether or not accommodations are required for safe return to work. In addition, the

evaluation system can be used to teach the employee proper body mechanics and can provide personal wellness feedback based on the physical assessment and functional performance results.

The net result of this evaluation system is that the employer is much less likely to hire a person or return an incumbent employee to work who will become injured while performing the essential duties of the job. This will translate into a better qualified work force and improved productivity. In addition, the employer will be protected against inappropriate claims of injuries that related to pre-existing injuries. Fit for duty functional evaluations are proving to be the most effective system for matching employees to the job, and reducing injuries and claims. Safety professionals should seriously consider recommending such an employee testing program to their human resources department and integrate these evaluations into a corporate wide ergonomics and safety program.

Bibliography

Althouse, H. *Revealing a true profile of musculoskeletal abilities*. 1980. Occupational Health and Safety. 1980; Vol 1:25-30

Anderson, Charles K. 1990. Impact of Physical Ability Testing on Worker Compensation Injuries and Job Performance.” *Advanced Ergonomics, Inc.* Dallas.

Biering-Sorensen, F. 1984. Physical measurements as risk indicators of low-back trouble over a one-year period. *Spine*, volume 9, 106-119

Bigos, S, et al. 1992. “A Prospective Evaluation of Pre-employment Screening Methods for Acute Industrial Back Pain.” *Spine*: 17(8):922-926.

Bureau of Labor Statistics. 2002. “Lost-Worktime Injuries and Illnesses: Characteristics and Resulting Time Away from Work” (April 10).

Battie, M., et al. 1989. Isometric lifting strength as a predictor of industrial back pain reports. *Spine* Vol, 14, No. 8:651-56

Chaffin D., G. Herrin, W. Keyserling, and M. Foulke. 1977. *Pre-employment Strength Testing in Selecting Workers for Material Handling Jobs*. Cincinnati, Ohio: NIOSH Physiology and ergonomics Branch, Contract No. CDC-99-74-62.

Dolney, P. 1993. “Pre-placement Strength and Endurance Testing.” *Risk Management*: 40:5 (May): 65-70.

Dueker, J., S. Ritchie, T. Know, and S. Rose. 1994. Isokinetic trunk testing and employment. *Journal Of Medicine*, (Jan.) Volume 36, No. 1: 42-48

Harber, P. and K. Soo Hoo. 1984. *Static ergonomic strength testing in evaluating occupational back pain*. Journal of Occupational Medicine (December) Volume 26, No. 12: 877-884.

Himmelstein, J. and G.B.J.Andersson. *Low back pain: risk evaluation and pre-placement screening*.

Keyserling, W., G. Herrin, and D. Chaffin. 1980. *Isometric Strength Testing as a Means of Controlling Medical incidents on Strenuous Jobs*. Journal of Occupational Medicine (May) Volume 22, No.5: 332-336.

Matheson, L., et al. 1992. Effects of instruction on isokinetic trunk strength testing variability,

reliability, absolute value, and predictive value. *Spine*, Volume 17, No. 8:915-921.

Matheson, L., S. Isenhagen and D. Hart. 2002. Relationships among lifting ability, grip force and return to work. *Physical Therapy*, Volume 82, No. 3:249-256.

Notroelt, J. and E. Celentano. 1987. Development of predictive selection and placement tests for personnel evaluations. *Applied Ergonomics*, Dec. 1987, Volume 18, No. 4:279-288.

Smith, S., S. Cunningham and R. Weinberg. 1986. The predictive validity of the functional capacity evaluation. *American Journal of Occupational Therapy*, Aug. 1986, Volume 40:654-563.

United States Department of Labor, Occupational Health & Safety Administration. 2002. "OSHA Announces Comprehensive Plan to Reduce Ergonomic Injuries." *National News Release USDL 02-201* (April 5).

Wheeler, D., et al. 1994. Functional assessment for prediction of lifting capacity. *Spine*, Volume 9, No. 9:1021-1026.

Yelin, E.H., C.J. Henke and W.V. Epstein. 1986. *Work disability among persons with musculoskeletal conditions*. *Arthritis Rheum*. Vol. 29:1322-1333.