

Developing a Legally Compliant Job Demands Analysis

R.GAGNE, EET, CFE, NADEP

Copyright © 2010 Fit2WRKSM

ABSTRACT

A Physical or Job Demands Analysis is a systematic procedure to quantify, and evaluate all of the physical and environmental demand components of all essential and non-essential tasks of a job. JDA or PDA is a process of establishing what a job is in its entirety, in a way that complies with the law. For the purpose of employee rehabilitation and return to work, a JDA/PDA is the “cornerstone” of the analytical process used to determine compatibility between a worker and a specific job.

The demands of a job are not only used in determining rehabilitation goals and Physician restrictions post injury, but are also used to match an injured worker’s work capability to a job or task, without causing an overexertion injury. The functional abilities of an injured worker are used to assess whether a worker can return to work (RTW), using a Functional Capacity Evaluation (FCE), however, without any information about the physical demands of a job’s essential and nonessential duties, the functional ability information is not useful.

What Role Does the JDA/ PDA Play In The Workplace?

The Job Information can have a variety of roles in the workplace. These roles fall into two main categories, a reactive role in rehabilitation and return to work process, and a pro-active role in accident and injury prevention program.



Their role in rehabilitation and the return to work process:

- Communicate the job requirements to the insurer, and health care providers.
- Provide data for use in job matching and accommodation process.
- Clarify benefits entitlement (i.e. determining work-related injury, disability decisions etc.).
- Identify suitable alternate work or modified work programs.

Their role in injury and accident prevention program:

- Identify jobs, work processes, and equipment that require further ergonomic analysis and Intervention.
- Identify and prioritize safety concerns, engineering and administrative improvements.

Job Functions and subsequent elements of the job can be divided into 2 categories: essential and non-essential duties. Essential functions are the key to determining applicant qualifications. How do you determine whether or not the function is fundamental, and therefore, essential?

“The main purpose of job information and abilities is to facilitate the worker’s timely return to work”.



The following questions should be considered in determining essential functions:

1. Why does the job exist?
2. Does the incumbent actually perform the function?
3. Would the overall purpose of the job be accomplished if this function was not performed?

Both of questions #2 and #3 need to be answered “yes” if the function is to be considered essential.

Nonessential functions are those not essential to the specific job or those shared by many different employees. Nonessential functions must not influence placement of an individual in a particular position.

ESSENTIAL	NONESSENTIAL
Critical	Peripheral
Fundamental	Borderline
Primary	Extra
Required	Nonessential
Main	Passable
Necessary	Incidental
Integral	Minimal
Crucial	Accessory
Vital	Secondary
Indispensable	Auxiliary
Basic	Supplementary
Imperative	Supporting
Key	Ancillary
Intrinsic	Dispensable
Central	Collateral

The tables shown display words defining essential and nonessential. This list may assist in identifying which work functions are essential and nonessential as well as provides examples of criteria for sample job listings:



JOB	ESSENTIAL FUNCTION	NONESSENTIAL FUNCTION
Cafeteria Worker	-Serve Customers	-Unload supply truck
Receptionist	-Answer incoming calls	-Hand deliver messages
Airline Pilot	-Land Airplane	-Greet passengers
Assembler	-Produce required product	-Sweep area
Bus Driver	-Drive bus	-Clean trash from bus
Auto Mechanic	-Fix cars	- Speak with customers
Teacher	-Teach students	-Play sports with students

Do not confuse an Essential or Non-Essential Task with that of being a High Risk component of the work environment, for example the cafeteria worker noted above may serve customers all day, but his/her most strenuous and High Risk activity is the non-essential duty of unloading the supply truck.

Regardless of the variety of Job Demands Analysis structure, all JDA/PDA forms should have:

- Brief information about the job
- List of all essential and non-essential duties
- List of all activities associated with each duty – these are called the elements of each function
- Easy to read and understand by many users.
- Cover the needs of workers with a variety of injuries or illnesses
- Information is reliable and consistent across the organization
- Identify safety and ergonomic concerns, engineering and administrative improvements

When PDA information is used for the purposes of RTW, it should have the following structure:

- Ability to document a job in a non-discriminatory manner
- Comply with ADA and the EEOC – identify the essential and non-essential job functions, describe the work, and document the physical requirements of the job and the worksite
- Use “objective” measurements to determine the standard requirement of each job and task
- Able to assist the injured worker to return to their previous job by identifying specific jobs or tasks that are within the worker’s working capacities
- Provide detailed information to allow therapists to design appropriate treatment goals
- Develop restricted duties or modified work programs from the physical demands information
- Provide union representatives, and employers with information about reasonable accommodations for injured workers

Conducting the Job Analysis

This is a process of breaking up a job in order to examine its individual tasks. When conducting a physical demand analysis, investigators will objectively quantify and evaluate the environmental conditions, use of machines, equipment, tools, work aids, and physical demands of each task. To quantify the physical and environmental demands of the job, direct and indirect observation techniques are utilized. The following is a general step-by-step discussion of the four components of the JDA/PDA Process.

Procedure 1 – Determine Job Function:

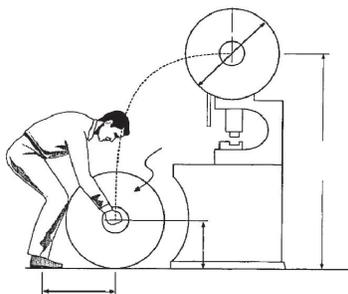
Worker and employer investigators meet to discuss the existing information of the job title and job description. In most cases, there will already be a narrative job description.

Reviewing the existing job description, investigators should determine:

- If the job information is current
- The purpose or intent of the position
- Identify all different components of the job (i.e. all related tasks)
- All essential and non-essential functions. Please refer to Appendix C for detailed information concerning essential and non-essential functions

Procedure 2 - Verification of Job Function:

This process verifies that the duties and tasks outlined by the job description are actually performed in the job being analyzed. The common work areas where the normal performance of the duties takes place must also be verified. Job analysts should obtain a clear under-



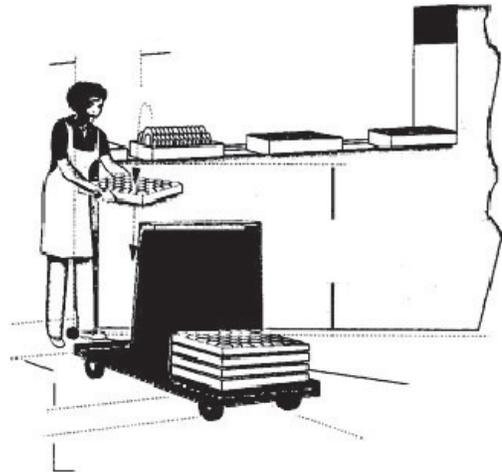
standing of the flow of the work going into and out of the workstation being analyzed, and identify the relationship of the position being analyzed to other positions in the department.

Procedure 3 - Identify Job Function:

The third component of the PDA process is to identify or break down what functions of the job are essential and non-essential. Next, the investigators should determine as objectively as possible the various tasks, sub-tasks or functional components of the job/position. After determining the various tasks, subtasks, or functional components of the job/position, the investigators should quantify the duration of each task/subtask by:

- Timing the time spent performing each function using a stop watch
- Calculating the percentage of time per day, week, or shift spent on various tasks, or
- Counting the cycles or repetitions of functions being performed

“All the tasks should be job related or are required for completion of the job. For example, there may be 6 essential tasks and of those 6 essential functions, 2 of the functions may have 2 subtasks and 2 of the other functions may have 3 subtasks or elements.”



Procedure 4 - Quantify Physical Demands of Each Job Function

The fourth component of the job analysis process is to objectively quantify the physical and environmental requirements for each task/duty. In order to objectively measure the intensity, frequency, and duration of physical functions, the following instruments should be used:

- A portable weight scale (used to weigh loads lifted or carried)
- A tape measure (used to measure work heights, load size and carrying distance)
- A push-pull gage (used to measure pushing and pulling force)
- A grip and pinch force gage (used to measure gripping and pinching force)
- A camcorder or still camera (used to study details of tasks after the observation, and description of workplace layout, equipment, work tools etc.)
- A stop watch (used to record cycle time and duration of task).
- Other measurement devices specific to the workplace (i.e. vibration instruments)

To quantify the physical elements for each task use the following activities:

- mobility (walking, sitting, standing, crouching, stooping, climbing, balancing, crawling and kneeling)
- manual material handling (lifting, pushing, pulling, and carrying);
- reaching (vertical and horizontal work)
- handling
- fingering
- proprioception (feeling, seeing, taste/smell, talking and hearing)

For each essential and nonessential duty, the investigators should determine if any of the physical elements are required to perform the task. If physical demands are required to perform a task, objective quantification of the intensity, frequency, and duration of each physical function should be recorded.

Record Results and Perform Risk Factors Assessment

Once all physical demands of each task are quantified, the following process should be followed:

- 1) Enter the PDA data into a spreadsheet or word processor and create the initial report including the identification of all essential and nonessential functions of the job
- 2) Submit an initial report to the department head, supervisor, and worker representatives for review and sign-off
- 3) The Employer and Union representatives return the initial report with any modifications/corrections to the essential and nonessential function of the job.
- 4) Perform risk factors assessment to identify any injury/accident potential. For example, in assessing lifting/lowering demands, the job analysts can compare the specific aspect of the lifting/lowering task to the NIOSH Lifting Equation. This step may take a little extra time, however it can be a huge payback in terms of reducing injury incidence.
- 5) Investigators prepare the final JDA/PDA report according to all modifications/corrections and potential risk of injury/accident. A separate report that includes only the risk factors assessment and recommendation should also be submitted to the Joint Health and Safety Committee.
- 6) The final report should be signed-off by a worker and employer representatives, to indicate the accuracy of the physical demands analysis of the job. This is not only to indicate the accuracy of the information, but also to ensure that the JDA/PDAs will be more defensible in any legal or arbitration hearing.

Update PDA Information as Required

Updating job information is crucial for the continuous effectiveness of JDA/PDAs and injury prevention. There are several ways to maintain the accuracy of the PDA content. Some of these methods are:

- Update PDAs whenever there is a job redesign, job merger or when a new equipment or work tool is purchased
- Include a memo with all RTW packages that asks the injured worker to review the enclosed PDA for accuracy, or
- Annual review of the current PDA information and sign-off process by both a worker and employer representatives

Sample of Essential Task descriptors for frequency, weight & height and sustained postural tolerances:

Activities	Essential task 1: cleaning meters (60%/shift)	Essential task 2: dissemble meters (20%/shift)	Essential task 3: mount CT on coil plate (5%/shift)
Back: Straight/neutral Stoop/flex Twist/side bend Twist & stoop	57.1% (Frequent) 2.9% (Occasional) 0% (Never) 0% (Never)	12.2% (Occasional) 5.8% (Occasional) 1.7% (Occasional) 0.29% (Occasional)	2.7% (Occasional) 2.2% (Occasional) 0% (Never) 0% (Never)
Arms: Below shoulder At/above shoulder Overhead	54.8% (Constant) 5.2% (Occasional) 0% (Never)	20% (Occasional) 0% (Never) 0% (Never)	4.0% (Occasional) 0.96 (Occasional) 0% (Never)
Legs: Sitting Standing still Walking Kneeling Crouching Crawling Lying	36.4% (Frequent) 21.8% (Occasional) 1.7% (Occasional) 0% (Never) 0% (Never) 0% (Never) 0% (Never)	0% (Never) 19.1% (Occasional) 0.87% (Occasional) 0% (Never) 0% (Never) 0% (Never) 0% (Never)	0% (Never) 4.3% (Occasional) 0.5% (Occasional) 0% (Never) 0.2% (Occasional) 0% (Never) 0% (Never)

Manual Material Handling Activities	Ess. Task 1 (60% / shift)	Ess. Task 2 (20% / shift)	Ess. Task 3 (5% / shift)	Noness. Task 1	Noness. Task 2
Lifting: Beginning Heights (in) Ending Heights (in) Weights (lbs) Frequency (#/min)	6-40" 6-34" 6-32 lb 0.04	9-34" 9-36" 6-50 lb 0.01	36" 55" 20-80 lb (1-2 / mth)	18-22" 17-22" 38-50 lb Occasional	30-35" 71-75" 20-35 lb 0.01
Carrying: Weight (lbs) Distance (in) Frequency (#/min)	6-32 lb 9-60" 0.03	34-46 lb 30-40"	20-80 lb 20-25" (5-10/mth)		34-46 lb 30-40" (1/day)
Pushing: Push Heights (in) Horizontal Force (lb) Frequency (#/min)		30-33" 45-60 lb (1-2/week)			34-46" 30-40 lb (1/day)
Pulling: Pull Heights (in) Horizontal Force (lb) Frequency (#/min)		30-33" 45-60 lb (12/week)			
Reaching (<10 lb): Front Distance (in) Vertical Height (in) Reach Direction Frequency (%/shift)	25-28" 9-60" Front 17.9	25-30" 36" Front 9.9	25-30" 36" Front 1.5		
Handling: Weight of Objects (lb) Grip Force (lbs) Diameter (in) Frequency (%/shift)	3-8 lb 4-7" 9.8	3-35 lb 40-50 lb 2-7" 4.64	6-10 lb 30-50 lb 2-6" 1.6		
Fingering: Weight of Object (lbs) Pinch Force (lb) Pinch Type Finger Flexion (x) Frequency (%/shift)	4-6 lb 6-15 lb key, 3-pt 32.3	4-6 lb key, 3 pt 5.5	1-4 lb 10-15 lb 2 pt X 1.8		

Understanding the legal requirements in regards to the development of a JDA/PDA:

Impact of the Uniform Guidelines on Employee Selection Procedures

The Uniform Guidelines on Employee Selection Procedures states that a thorough job analysis is needed for supporting a selection procedure. Validity studies should be based on review of information about the job. Any validity study should be based upon a review of information about the job for which the selection procedure is to be used. The review should include a recent and detailed job analysis.

A job analysis should describe all important work behaviors, their relative importance, and their difficulty level. "A job analysis should include an analysis of the important work behavior(s) required for successful performance and their relative importance and, if the behavior results in work product(s), an analysis of the work product(s). Any job analysis should focus on the work behavior(s) and the tasks associated with them. If work behavior(s) are not observable, the job analysis should identify and analyze those aspects of the behavior(s) that can be observed and the observed work products. The work behavior(s) selected for measurement should be critical work behavior(s) and/or important work behavior(s) constituting most of the job."

Impact of the Americans with Disabilities Act

With the passage of the American's With Disabilities Act (ADA, 1990), job analysis has taken on an increasing importance. A job analysis can be used to define the essential elements of the job, including the physical demands that the work requires. The ADA specifically states: No covered entity shall discriminate against a qualified individual with a disability because of the disability of such individual in regard to job application procedures, the hiring, advancement, or discharge of employees, employee compensation, job training, and other terms, conditions, and privileges of employment.

The Act defines “qualified individual with a disability” as someone with a disability who:

“with or without reasonable accommodation, can perform the essential functions of the employment position that such individual holds or desires.” (see ADA Section 101. Definitions (8)).

What is an “essential function”?

The Act states: “...consideration shall be given to the employer’s judgment as to what functions of a job are essential, and if an employer has prepared a written description before advertising or interviewing applicants for the job, this description shall be considered evidence of the essential functions of the job.

Determination of “reasonable accommodations”

The ADA requires that handicapped individuals be given “reasonable accommodation” in the workplace so that they will not be unreasonably excluded from employment. Job Analysis is a process to identify the tasks and duties performed on the job as well as equipment used. This information may be helpful in determining what “reasonable accommodations” could be made for an individual to perform the job.

Can the job analysis be used in defense of actions by the employer sued under ADA?

Job Analysis will play a crucial role in identifying the essential functions of a job and also assisting in identifying what reasonable accommodations may be made. If incomplete or outdated then all testing, rehabilitation or return to work decisions can be challenged.

The Job Demands Analysis is the cornerstone of understanding the key elements of any specific job prior to returning a worker to the workplace. Without a properly constructed, recently reviewed JDA/PDA; the rehabilitation professional has difficulty in the preparation of a worker for return to work, the Physician has limited ability to determine work restrictions, the Functional Capacity Evaluation service is rendered ineffective and the Post offer Pre Employment Screen is deemed non-compliant in relation to the ADA and EEOC. Needless to say, the first direction of any company in overall injury reduction is to tie down their job descriptions. A solid JDA/PDA is worth its weight in respect to keeping the continuum of care in focus.

The program noted above is a summary of one of the components of Fit2WRK by USPh. This integrated model is available through USPh in close to 400 facilities and 44 states nationally. For additional information on how the Fit2WRK Model could help your organization, visit; www.Fit2WRK.com or call 1-877-Fit-2WRK.

REFERENCES:

- 1) Shaw JB, Riskind JH. Predicting job stress using data from the Position Analysis Questionnaire. J Appl Psychol. 1983 May;68(2):253–261. [PubMed]
- 2) de Zwart BC, Broersen JP, Frings-Dresen MH, van Dijk FJ. Musculoskeletal complaints in The Netherlands in relation to age, gender and physically demanding work. Int Arch Occup Environ Health (1997) 70:352–360. [CrossRef][Web of Science][Medline]
- 3) Andersen JH, Haahr JP, Frost P. Risk factors for more severe regional musculoskeletal symptoms: a two-year prospective study of a general working population. Arthritis Rheum (2007) 56:1355–1364. [CrossRef][Web of Science][Medline]
- 4) Cheung Y, Guo YL, Yeh WY. A national survey of psychosocial job stressors and their implications for health among working people in Taiwan. Int Arch Occup Environ Med (2001) 74:495–504. [CrossRef]
- 5) Bourbonnais R, Brisson C, Moisan J, Vezina M. Job strain and psychological distress in white-collar workers. Scan J Work Environ Health (1996) 22:139–145.
- 6) Van Dieën JH, Oude Vrielink HH. Evaluation of work-rest schedules with respect to the effects of postural workload in standing work. Ergonomics (1998) 41:1832–1844. [Medline]
- 7) Chiang H-C, KO Y-C, Chen S-S, Yu H-S, Wu T-N, Chang PY. Prevalence of shoulder and upper-limb disorders among workers in the fish-processing industry. Scand J Work Environ Health 1993;19: 126-31.
- 8) Winkel J, Mathiassen SE. Assessment of physical work load in epidemiologic studies: concepts, issues and operational considerations. Ergonomics 1994;37:979-88.
- 9) Hagberg M. Exposure variables in ergonomic epidemiology. J Ind Med 1992;21:91-100.
- 10) Sommerich CM, McGlothlin JD, Marras WS. Occupational risk factors associated with soft tissue disorders of the shoulder: a review of recent investigations in the literature. Ergonomics 1993;36:697-
- 11) Kilbom A. Assessment of physical exposure in relation to work-related musculoskeletal disorders - what information can be obtained from systematic observations? Scand J Work Environ Health 1994;20:30–45.
- 12) Corlett, N, Wilson J, Manenica I, editors. The ergonomics of working postures, London: Taylor & Francis, 1986.
- 13) Wiktorin C, Karlqvist L, Winkel J, Stockholm Music I study group. Validity of self-reported exposures to work postures and manual materials handling. Scand J Work Environ Health 1993;19:208
- 14) WSIB/ON Guidelines for PDA / Toronto Ontario PDA Charts/ Occupational Standards for PDA Guidelines
- 15) NIOSH/ADA/EEOC/CDC references, graphics and simulated work samples