VCU

Virginia Commonwealth University

Functional Capacity Evaluation Course

Williamsburg, Virginia
September 14, 2000

ARCON

VerNova FCE

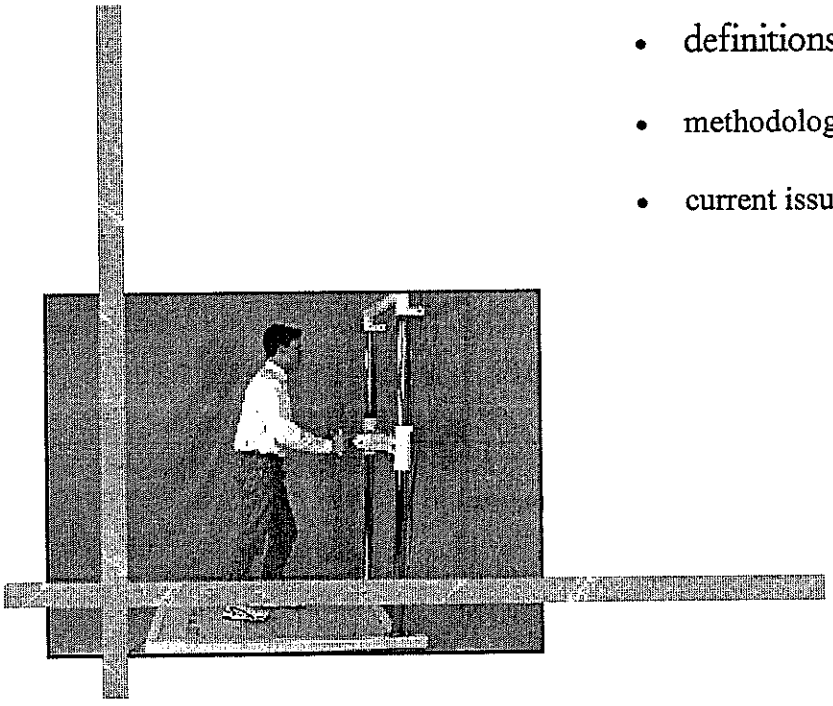
Part 1
Introduction to the FCE

functional capacity evaluation: an overview

I. Introduction
II. History of Functional Evaluation
III. Methodologies
IV. Types of Functional Evaluations
V. Issues in Functional Evaluation

WHAT YOU NEED TO KNOW

- definitions
- methodology
- current issues



I. INTRODUCTION

Virginia Commonwealth University Functional Capacity Evaluation Course

Virginia Commonwealth University (VCU) recognizes a need for Functional Capacity Evaluation Continuing Education. VCU is uniquely positioned to provide this course due to the allied schools and research divisions that have a long standing interest in Functional Capacity Evaluation. The university houses the Medical College of Virginia, the Rehabilitation Research and Training Division, a graduate level Rehabilitation Counseling program, and the Kinesiotherapy Curriculum, Division of Health, Physical Education and Recreation. Faculty from each of these areas convened to express support for development of the curriculum and associated on-going research. The sponsoring faculty selected to collaborate on course design and delivery with VerNova, parent company of the ARCON Functional Capacity Evaluation technology, recognized as the 'gold standard' in functional evaluation.

ACCOMODATIONS AND EQUAL OPPORTUNITY

Virginia Commonwealth University is an equal opportunity/affirmative action institution and does not discriminate on the basis of race, color, religion, gender, national origin, age, or disability. For additional information or to request accommodations, please discuss your requirements with the faculty, or contact Daniel W. Jones, PhD., RKT at (804) 828-1948.

WHAT WILL I LEARN FROM THIS COURSE?

This course is designed to increase the knowledge and clinical skills of clinicians who perform Functional Capacity Evaluations. Practical presentation is provided on:

Scientific Foundations

Work Physiology

Strength Testing

Physical Examination

Physical Ability Testing

Psychosocial Screening

Evaluee Reliability

Reporting and Interpretation

Legal Foundations

This knowledge will prepare the evaluator to perform objective, unbiased testing, determine if the evaluee demonstrates behavior that confounds the results, and give a legally defensible opinion regarding ability to perform occupational demands.

FCE: an overview

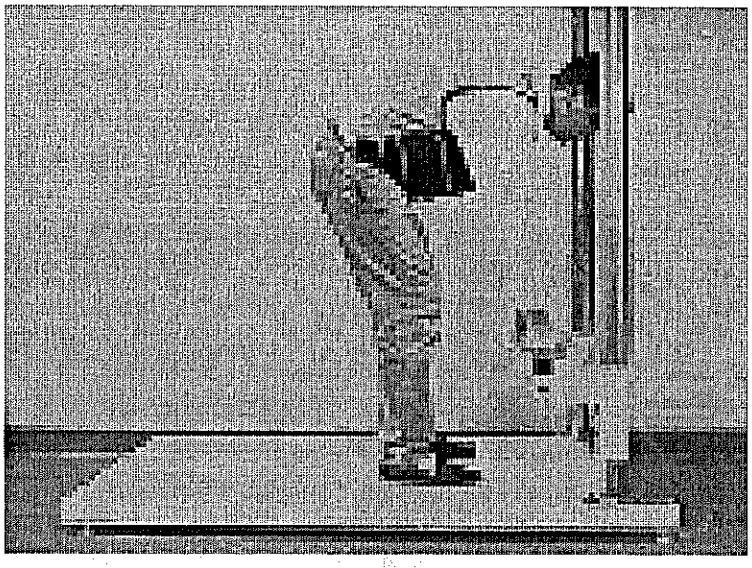
DEFINITIONS

Functional Capacity Evaluation is measurement of an evaluee's performance on a comprehensive series of standardized tests, resulting in data that can be interpreted according to the predictive validity of each test. The goal of the evaluation is to determine the evaluee's ability to perform occupational demands, either to a specific job or to general occupational requirements. This evaluation process may also be referred to under the terms: *Functional Ability Evaluation*, *Work Capacity Evaluation*, or *Work Tolerance Screening.*

Disability Evaluation is a process of comparing Functional Capacity Evaluation results to a legal definition of disability, which may vary between jurisdictions and/or administrative policies.

Impairment Rating is a deficit calculation, based on the measurable consequence of an injury or disease process, with comparison to a published definition of 'normal'.

Post-Offer of Employment Testing is measurement of an individual's performance on a series of standardized tests confined to *bona fide* work requirements. Decisions concerning placement based on testing results remain the domain of the employer, not the evaluator.



II. HISTORY OF FUNCTIONAL EVALUATION

RAPID DEVELOPMENT

Functional Capacity Evaluation developed rapidly in the late 1970's and early 1980's from vocational rehabilitation, occupational and physical therapy, and occupational and rehabilitation medicine disciplines. Development of functional evaluation tests, tools, software and hardware rapidly expanded in response to the need for case management of disability, outcome measurement of rehabilitation and prevention of (re-) injury. Physicians, insurance companies, the legal profession, case managers and employers rely heavily on the results of functional capacity evaluation to make decisions regarding injury compensation and return to work.

EARLY HISTORY

Industrialization in Europe and North America led to sociological changes in the early 20th Century. The relationship of man to work was studied and means to make work both safer and more productive went hand-in-hand. Post World War II North America brought about many of the industrial changes that remain in our current context. Occupational medicine protocols for pre-employment physical exams and post-injury management developed. Rehabilitation sciences developed therapeutic protocols to manage injuries and rehabilitation for maximal restoration of function. Public and private vocational rehabilitation services began standardizing occupational requirements and vocational measurement instruments. Work sample and psychometric testing methodologies developed rapidly from the 1940's to the late 1960's. Disability and social policy insurance based on impairment, functional restoration and earning capacity models became prevalent. Disability rates and premiums increased dramatically in the late 1970's and early 1980's leading to the demand for evaluation methodologies that met insurance models and managed return to work for disabled workers.

Various trends have affected the demand for FCE's;
increased disability rates within worker's compensation and long term disability policies,
the aging worker population, the Americans with Disabilities Act,
the Equal Employment Opportunity Commission Uniform Guidelines on Employee Selection,
(and similar social legislation trends internationally),
and shifting dynamics in employment characteristics.

III. METHODOLOGIES

MULTIDISCIPLINARY PROCESS

Methodologies developed along the scientific principles of each related discipline and within proprietary systems. However, there has been very little scientific research available to the clinician to assist in critical analysis of each methodology. The research tends to validate only a specific sub-test within an FCE, such as the hand grip test, or a specific strength test protocol. It has largely been the commercial providers of functional capacity evaluation equipment, training and individual practitioners who have brought this disassociated research together in a comprehensive protocol in order to create a meaningful evaluation. This is not inherently a deficiency. Other models of evaluation use distinct tests to compose a profile of an evaluee. Neuropsychological and psychological evaluations are the most typical. However, the interpretation of the sum of the functional parts into a whole person evaluation would benefit from predictive validity studies to determine occupational placement outcomes. Unfortunately, methodological issues and confounding variables make this research very difficult to conduct.

MEDICAL MODEL

The *Medical* models of functional capacity evaluation investigate the effect of pathology and impairment due to disease or injury processes on function. Physical examination, lab tests and diagnostics comprise the evaluation methods. Symptom magnification is examined via non-organic signs. The physician makes an estimate of the effect of the loss of function on work requirements. The methodology has construct validity (loss of function is related to work disability) but has little content validity and criterion validity. Physician's attitudes can affect opinions and conclusions as there is an absence of objective evidence to rely on.

An adjunct to the medical model is expected time loss data by diagnosis. Once a diagnosis has been determined, the evaluee can be benchmarked along time loss expectations, and interventions initiated when guidelines are surpassed.

METABOLIC MODEL

The *Metabolic* model of functional capacity evaluation also fits in a medical model. Not only disease and injury process affect cardiovascular fitness, but lifestyle also must be considered. Cardiovascular fitness testing determines the evaluee's ability to perform the metabolic requirements of work. The physician/evaluator determines whether medical improvement could be expected through medical or exercise interventions. Criteria exist for the metabolic requirements of jobs and sustainability through the workday. Hence this aspect of the medical model has criterion validity for return to work.

BIOMECHANICAL MODEL

The *Biomechanical* model of functional capacity evaluation concerns range of motion, muscle strength, joint movement and integrity. This model arises primarily from the Physical Therapy discipline, but is also relevant to the Occupational Therapist and Kinesiologist. Physical examination and range of motion testing via goniometer, inclinometer and manual muscle testers comprise the evaluation methods. Symptom magnification is examined via non-organic signs and inconsistent repeated measures coefficient of variance. The evaluator makes an estimate of the effect of the loss of function on work requirements. The methodology has construct validity (loss of function is related to work disability) but has little content validity and criterion validity. Comparison to other disabled subjects may be performed, with valid outcomes criterion available. However, comparison to disabled, rather than 'normal' workers, raises validity concerns.

PSYCHOPHYSICAL MODEL

The *Psychophysical* model of functional capacity evaluation measures an evaluee's willful output of effort, mediated by internal processes that give the evaluee feedback about their ability to perform the task according to the criterion set. This model is utilized primarily in an Occupational Therapy and Kinesiophysical approach. It is elegantly safe because the evaluee is fully in control of their effort. However, results are suspect when the evaluee has secondary gain conflicts with test performance.

PSYCHOSOCIAL MODEL

The *Psychosocial* model of functional capacity evaluation is crucial as most research on return to work identifies non-physical factors affecting outcomes. Job characteristics, psychological traits, and pain must be screened for and considered in a rehabilitation plan. Screening tests may be performed by licensed allied health care professionals. Remarkable screening results can be used to appropriately refer an evaluee for more extensive (and expensive) psychological assessment or multi-disciplinary pain evaluation. Unremarkable screening results can lead to appropriate case management approaches.

IV. TYPES OF FUNCTIONAL EVALUATIONS

THREE STAGE MODEL

Functional evaluations are used for a variety of purposes throughout the employment and healthcare continuum. The evaluation model follows the three stage public health model closely; PRIMARY, SECONDARY AND TERTIARY. There is a need for evaluations in the PRIMARY stage (hiring process, health maintenance and safety) SECONDARY stage (early intervention and rehabilitation) and TERTIARY stage (disability management, compensation and case closure). Employers, insurance companies, case managers, health care professionals and government social service agencies use functional evaluations to carry out their mandate effectively.

FCE: an overview

PRE-OFFER/PRE-EMPLOYMENT EVALUATION

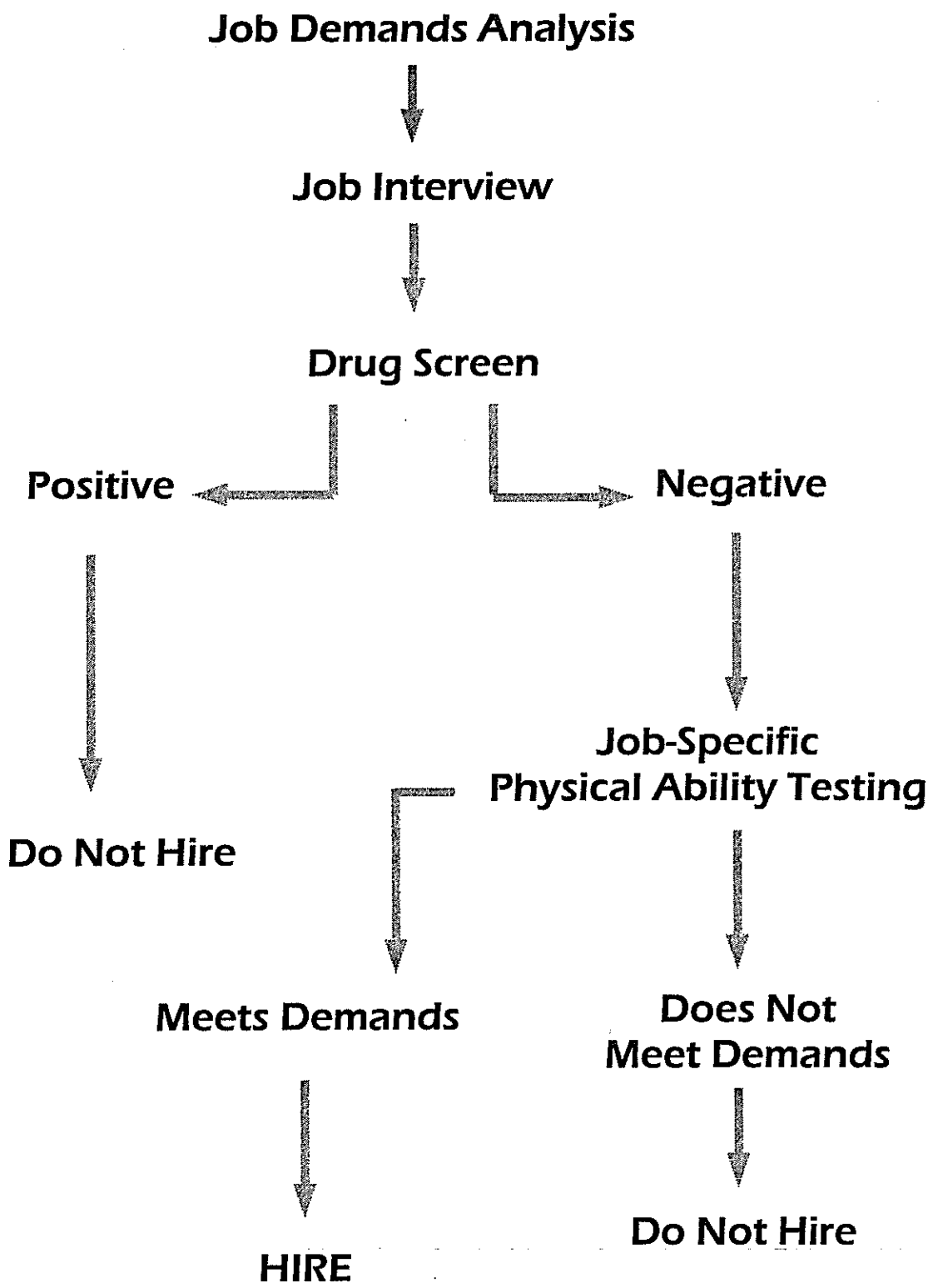
The Pre-offer/Pre-employment Evaluation is an assessment used by employers to identify whether or not an individual is able to perform the essential physical functions of a particular job. The Pre-offer/Pre-employment Evaluation also provides a baseline of the individual's ability to perform the physical demands of the job in question. A pre-testing drug screen may be included in this evaluation. Employers can use the results of a Pre-offer/Pre-employment Evaluation to determine suitability for a particular job.

BENEFITS

- ☑ Individuals who "pass" the evaluation are able to safely perform all physical demands of the job in question at the time of hiring.
- ☑ By identifying whether or not an individual is able to perform the physical demands of a particular job, the employer can prevent injuries at the workplace.
- ☑ By preventing injuries employers are taking the most critical step towards cost containment.
- ☑ Hiring individuals who are suitable for the physical demands of a particular job means increased production.

FCE: an overview

PRE-OFFER/PRE-EMPLOYMENT EVALUATION FLOWCHART



POST-OFFER/PRE-EMPLOYMENT EVALUATION

This is an evaluation that is conducted following an offer of employment. Post-offer/Pre-employment Evaluations usually involve medical examinations. Physical agility testing and drug screening are not considered medical evaluations; however, they may be components of the Post-offer/Pre-employment Evaluation. The utility of this type of evaluation depends on the jurisdiction in which it is implemented.

BENEFITS

- ☑ The Pre-placement/Post-offer of Employment Evaluation identifies individuals that are a direct threat to their own health or safety, or to the health or safety of others at the work site.
- ☑ By identifying individuals who are a direct threat to their own or other employees' health or safety, employers can provide a safe working environment for all employees.
- ☑ Identifying potential health or safety risks lowers the rate of medical and injury claims.
- ☑ Decreased medical and injury claims mean decreased costs.

LEGAL CONSIDERATIONS

When employment is conditional on the results of a medical examination, an offer of employment is usually required ***prior*** to the examination. However, this may vary between jurisdictions.

If a medical examination is required, it must be required of all applicants, or all applicants for a certain position. Physical agility tests and drug tests are not considered medical examinations, and therefore may be allowed prior to making an offer of employment.

The medical examination should be designed to specifically identify medical threats that pose a significant health or safety risk of substantial harm to the applicant or others at the work site. To establish whether or not a condition poses a direct threat, several features of the condition must be considered, including the duration of the risk, the nature and severity of the potential harm, the likelihood potential harm will occur and the imminence of the potential harm.

LEGAL CONSIDERATIONS

If employability is contingent upon test results, then these considerations should be stipulated in the written policy in addition to a list of medical conditions that are considered threats.

If testing indicates that the applicant is able to perform the job safely pending reasonable accommodations, then those accommodations must be met by the employer, provided that they do not impose undue hardship on the employer.

Employers should ensure that medical examinations are standardized for all applicants. Written policies should be made available to all applicants outlining the testing protocol and expected results.

ACCOMMODATIONS

As noted previously, employers must make reasonable accommodations to the known limitations of an otherwise qualified worker, unless to do so would cause an undue hardship on the employer.

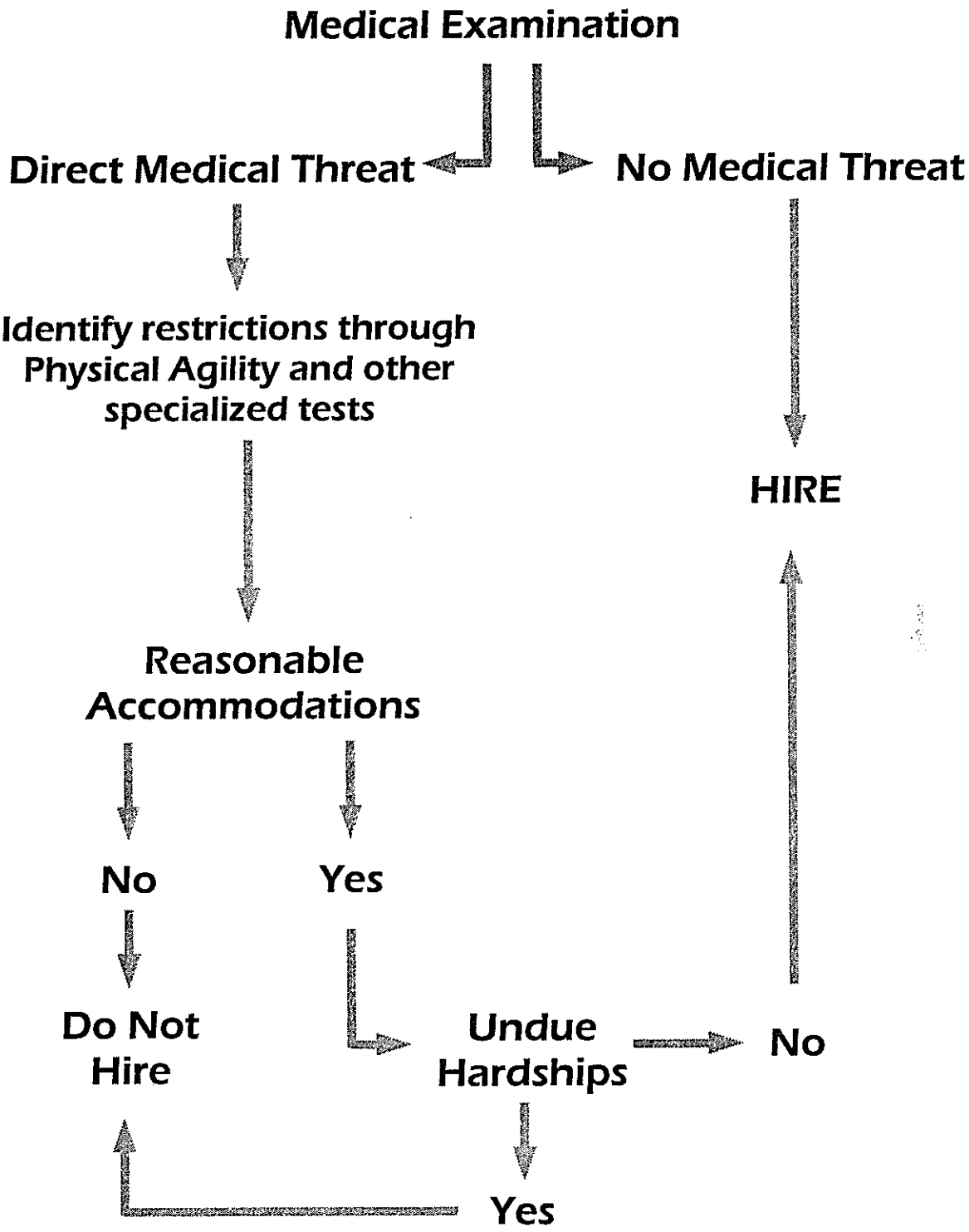
Common Accommodations include:

- ☑ Work-Aids
- ☑ Barrier Removal
- ☑ Work Place Layout
- ☑ Job Restructuring
- ☑ Job Rescheduling

Undue hardships include:

- ☒ Cost
- ☒ Burden on Co-Workers
- ☒ Changes to Nature of Job

POST-OFFER PRE-EMPLOYMENT EVALUATION FLOWCHART



PERIODIC SCREENING

Periodic Screening is an evaluation designed to prevent injury and maintain an employee at work. It is performed periodically, during the course of an individual's employment. The purpose of the evaluation is to determine the employee's continued ability to perform the physical demands of his or her job safely. This is an excellent resource for employers who deal with a high rate of injury claims from physically demanding or repetitive-type jobs. It is also ideal for the aging workforce. Identifying functional limitations as they arise, allows employers to take the proactive, less expensive path in correcting the limitation before it becomes a claim.

BENEFITS

Employees at risk of occupational injury can be identified at a fraction of the cost of an injury claim. These savings become substantial when high risk or repetitive-type jobs are involved. Individuals may not be at risk when they commence employment; however, the nature of some jobs can lead to general wear and tear that may change an individual's ability to safely perform the physical demands of the job. In addition, individual lifestyles or changes that occur with normal aging may also influence a person's ability to perform the essential duties of his or her job.

Through periodic screening, employers can obtain reports on new physical limitations that signal an impending claim.

The cost of just one claim is usually far greater than:

- ☑ Periodic examinations to assess an employee's continued ability to perform the physical demands of his or her job.
- ☑ Rehabilitation, ergonomic modifications, or other intervention strategies that address risks.

LEGAL CONSIDERATIONS

If periodic testing is required as part of a preventative maintenance program, it must be required of all employees or all employees with the same job. The Periodic Screening should be designed to specifically identify newly developed limitations that compromise an employee's ability to continue performing safely in the position tested for. Safety risks include those posed to the employee or to his or her co-workers.

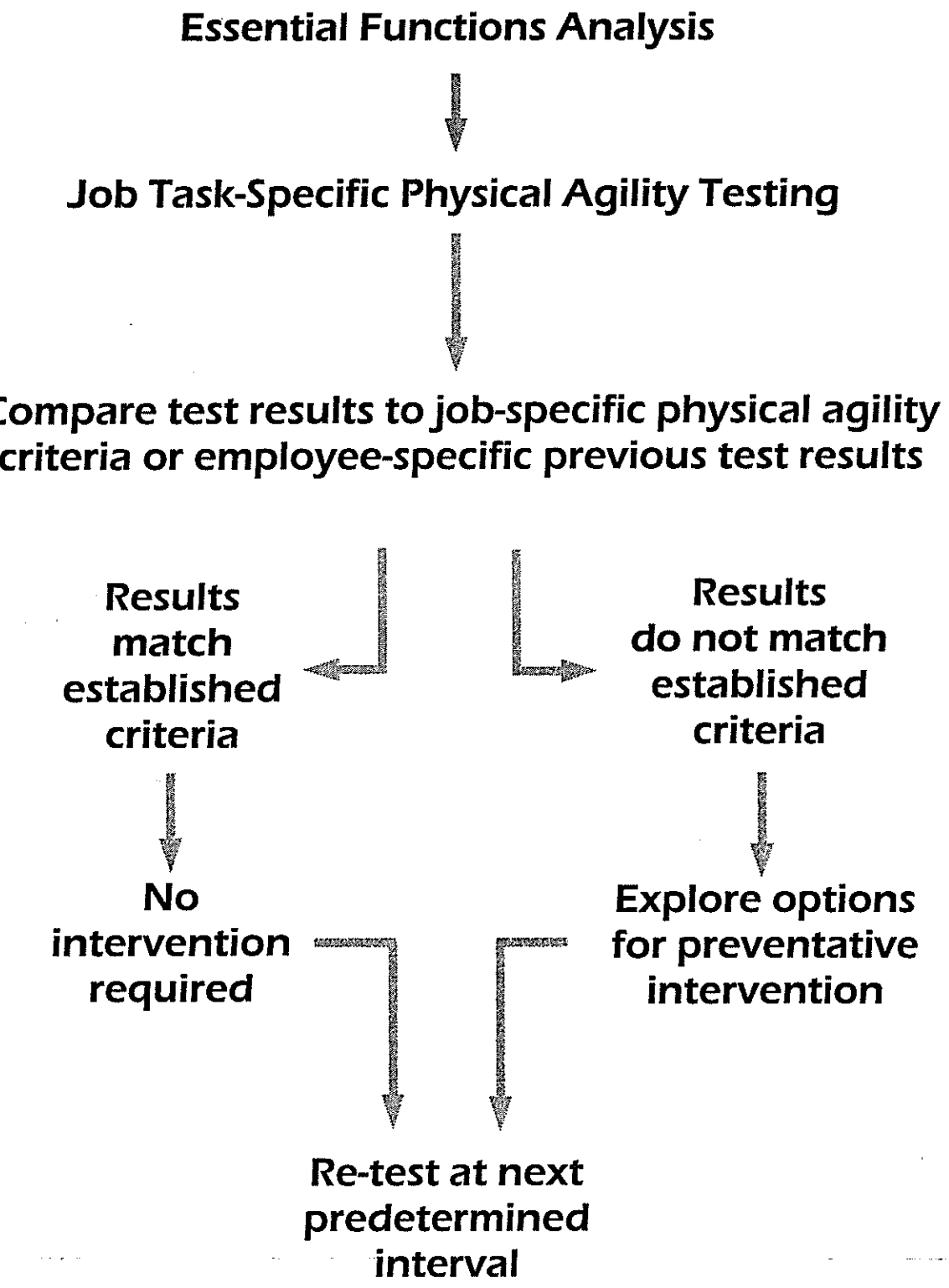
All employees within a particular job should be evaluated with the same protocol and at the same interval of time (unless recognized physical limitations indicate additional testing). Written policies should be made available to all employees outlining the testing protocol and expected results.

Most importantly, once employers establish criteria for periodic test performance, they must act on the results of the criteria. This means that an employee who fails to meet the test criteria cannot be allowed to continue performing his or her job

To establish whether a physical limitation poses a risk, several features must be considered, including:

- ☑ The duration of the risk
- ☑ The nature and severity of the potential harm
- ☑ The likelihood that the potential harm will occur
- ☑ The imminence of the potential harm

PERIODIC SCREENING FLOWCHART



JOB DEMANDS ANALYSIS

The Job Demands Analysis is a systematic process for collecting and analyzing information about jobs, including work performed, work environment, the knowledge, skills, abilities and personal competencies required to perform a given job. The Job Demands Analysis determines the most important and critical aspects of a job.

BENEFITS

The Job Demands Analysis can be an effective tool in the selection process for hiring. It ensures that people are appropriately matched to jobs. Finding appropriate matches minimizes an employee's exposure to risk. This leads to decreased injuries in the workplace, which in turn leads to decreased costs.

The Job Demands Analysis breaks a job down into smaller tasks. This can be used to identify components of a job that an employee can perform following rehabilitation of an injury. This leads to savings through earlier return to work via modified duties.

By having a detailed analysis of the demands of each job on file, employers can avoid unnecessary and expensive legal disputes that arise over differing views on readiness to return to work.

- ☑ A Job Demands Analysis assists in designing the structure of employment interviews. This ensures that interviews are job related and result in employment offers that match the person to the job.
- ☑ Matching the person to the job ensures competency in job performance which can lead to decreased risk of injury.
- ☑ A Job Demands Analysis prevents legal or administrative conflicts by ensuring fair and uniform criteria for hiring, job performance appraisal, human resource planning, return to work, etc.
- ☑ The Job Demands Analysis establishes objective goals for determining readiness to return to work following occupational injuries.

FCE: an overview

JOB DEMANDS ANALYSIS FLOWCHART

Gather Information from a Variety of Sources

Interview Employers and Employees

Collect Information from Job Questionnaires

Experienced Job Analyst Visits Workplace

Compare Information to Relevant Literature

(i.e. *Dictionary of Occupational Titles*)

Create Written Document for each Job

DOCUMENT SHOULD INCLUDE:

- Job Title
- Job Description/Job Summary
- Job Design/Work Environment
- List of Job Tasks, and their importance and frequency
- Competency level
- Required Knowledge, Skills and Abilities
- Description of Equipment Used/ Products Made

THERAPY BASELINE EVALUATION

A Therapy Baseline Evaluation is designed to establish baseline functional levels following an injury, and at the onset of a rehabilitation program. In essence, it is a specialized test, usually the first in a series of tests, designed to compare the injured employee to himself or herself. Readiness to return to work will ultimately be based on objective demonstration of functional improvement when the results of Therapy Baseline Evaluations are compared to subsequent assessments called Benchmark Evaluations. Through the Therapy Baseline Evaluation, the evaluee's readiness to begin rehabilitation can be identified and any limiting factors can be addressed.

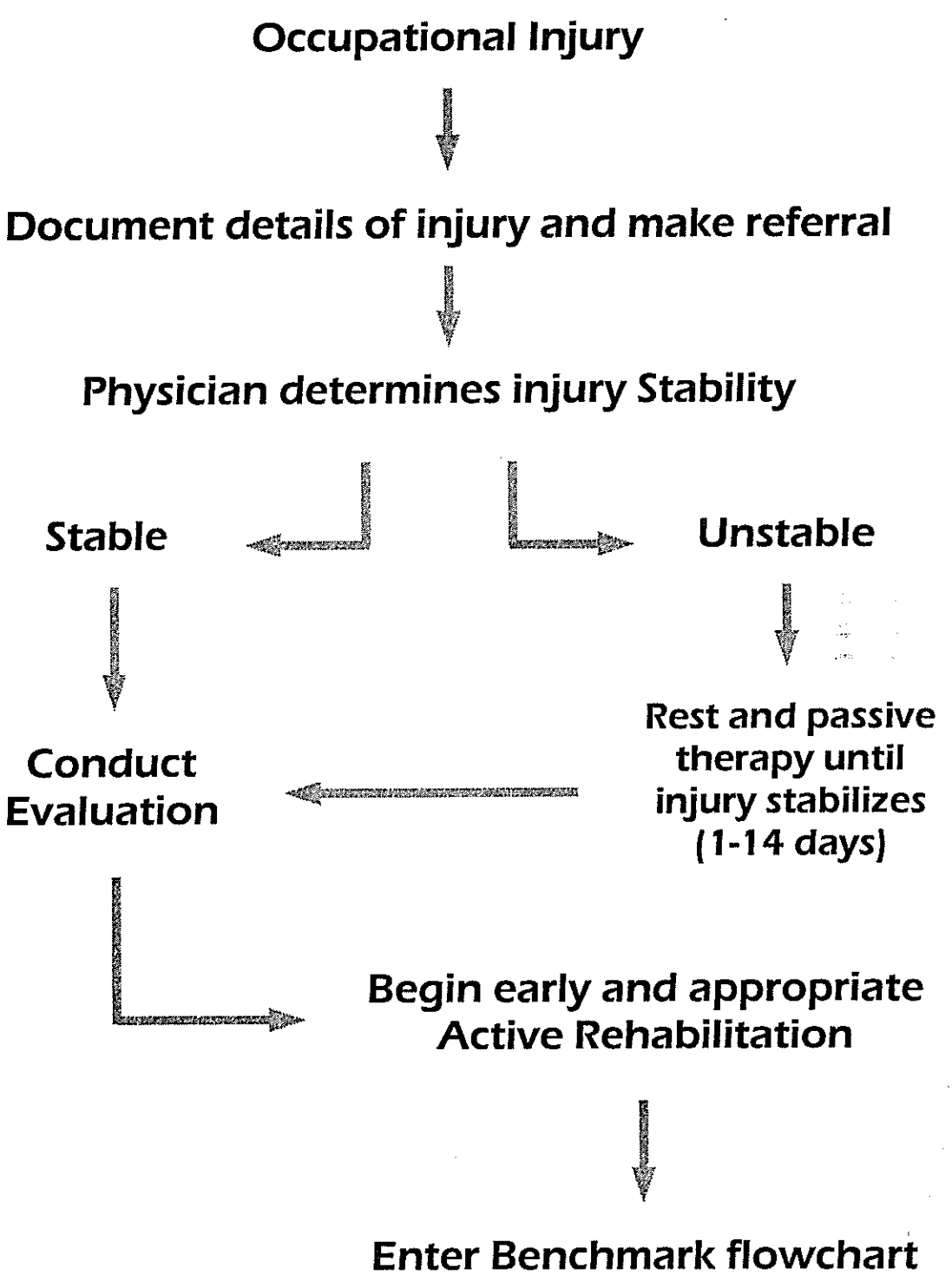
BENEFITS

Therapy Baseline Evaluations are a starting point for early entry into a rehabilitation program. Early intervention, especially through functional rehabilitation, is the best prevention for chronic disability. The injured employee receives education on managing pain and improving function from as early as the first day of injury. This means early return to work.

The Therapy Baseline Evaluation provides a baseline or benchmark of the employee's abilities following an occupational injury. This can be obtained as early as the first day following an injury. Improvement can be measured through objective evaluation. These measurements are easy to understand and can be translated easily to "return to work" timelines. Employers can monitor their expenses throughout the course of an injured employee's rehabilitation by comparing the results of Therapy Baseline Evaluations to future Benchmark Evaluations.

The functional progress of an injured employee and the anticipated date for return to work are the most tangible and valuable pieces of information an employer can posses.

THERAPY BASELINE EVALUATION FLOWCHART



BENCHMARK EVALUATION

A Benchmark Evaluation is an assessment that is performed at regularly scheduled intervals during the course of an injured employee's rehabilitation or work conditioning program. The Benchmark Evaluation identifies:

- ☑ Improvements in function of the injured employee
- ☑ Decline in function of the injured employee
- ☑ Recovery plateau when the injured employee has reached Maximal Medical Improvement
- ☑ Barriers to recovery
- ☑ The need for modifications in the rehabilitation program
- ☑ Reasonable guidelines for terminating rehabilitation or commencing work hardening or return to work

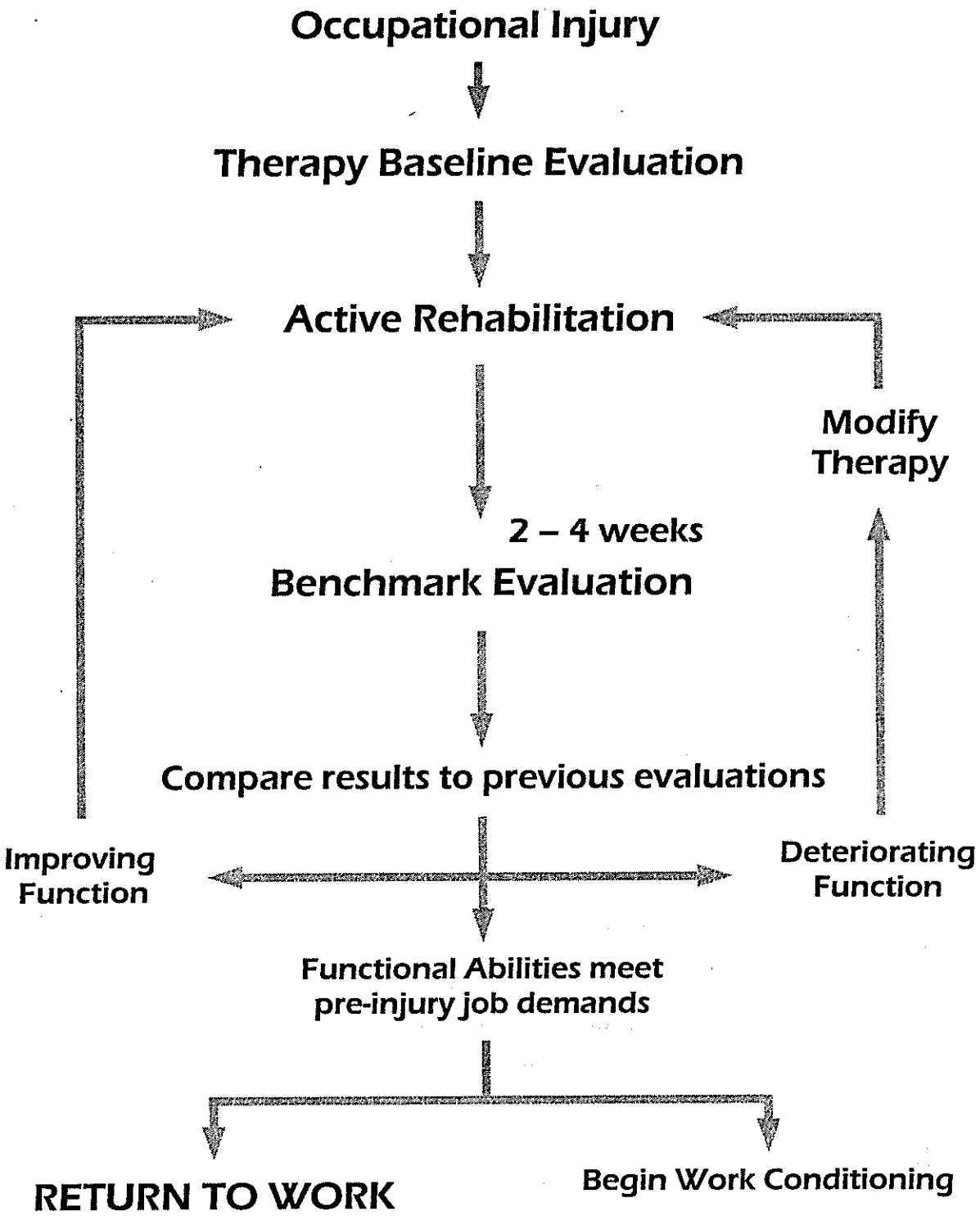
Benchmark Evaluations are also sometimes referred to as Therapy Tracking or Progress Evaluations.

BENEFITS

By conducting periodic evaluations throughout the course of an injured employee's rehabilitation, the exact point at which the employee is functionally ready to meet the demands of the pre-injury job can be identified. This monitoring ensures early and effective return to work.

- ☑ The Benchmark Evaluation guides healthy communication between the employer and the injured employee.
- ☑ The employer can set goals for return to work.
- ☑ Suitable modified positions can be identified for the employee.
- ☑ Identifying barriers to recovery decreases rehabilitation costs by allowing the employer or rehabilitation deliverer to identify appropriate changes in the employee's therapy.
- ☑ Identifying the point of Maximal Medical Improvement prevents the perpetuation of costly, ineffective rehabilitation.

BENCHMARK EVALUATION FLOWCHART



RETURN-TO-WORK EVALUATION

The Return-to-Work Evaluation is a type of assessment designed to identify whether an individual has the physical ability to perform part or all of his or her usual job tasks at some point in time following an injury. The Return-to-Work Evaluation is usually performed following a rehabilitation program or work absence, but may also be performed immediately following an injury. Return-to-Work Evaluations determine an injured employee's functional requirements with respect to his or her job-specific, pre-injury job duties, or functional capacity with respect to generic job duties.

BENEFITS

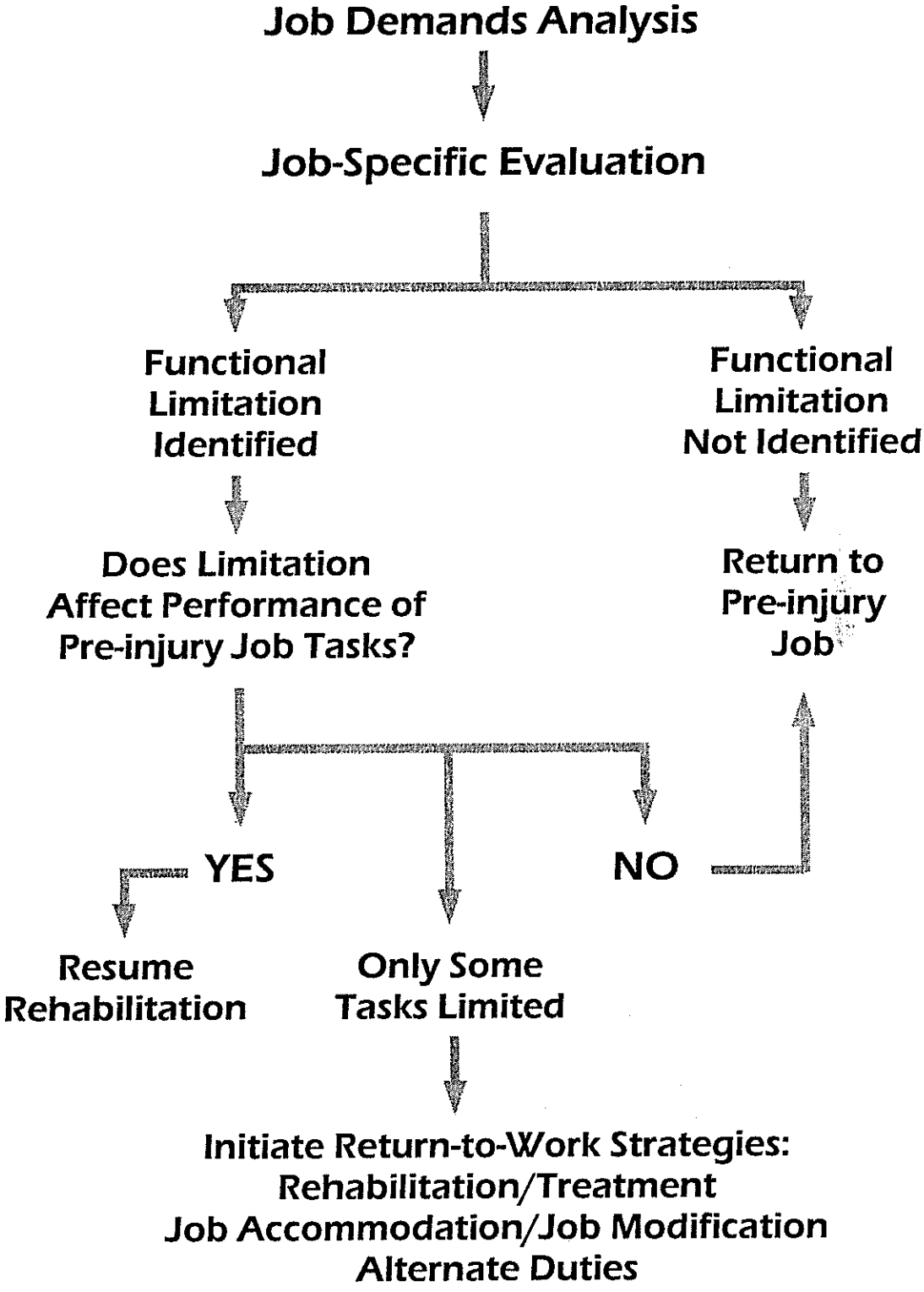
Employers save money through early return to work whether it entails full, partial, or modified duties. Any type of return to work is less costly than an unresolved claim. Savings can come from many sources depending on the nature and extent of injury. Through early return to work, employers can save the costs related to:

- ☑ Hiring temporary staff for the duration of the conflict
- ☑ Training temporary or replacement employees
- ☑ Premiums for workers' compensation insurance
- ☑ Medical, indemnity, legal, and administrative costs incurred during the course of injury claims
- ☑ By identifying an individual's readiness to return to work following an injury, employers can decrease claims costs.
- ☑ Through objective measurement of ongoing functional limitations, employees can prevent costly re-injury which inevitably occurs when employees are returned to pre-injury duties too soon.
- ☑ Employers also have the benefit of using this resource to identify specific functional limitations and at the same time, determine which tasks the employee can perform. This increases the likelihood of early return to work, even if it entails modified or alternate duties.

LEGAL CONSIDERATIONS

The laws governing return to work evaluations will varying according to jurisdictional legislation and contract law.

RETURN-TO-WORK EVALUATION FLOWCHART



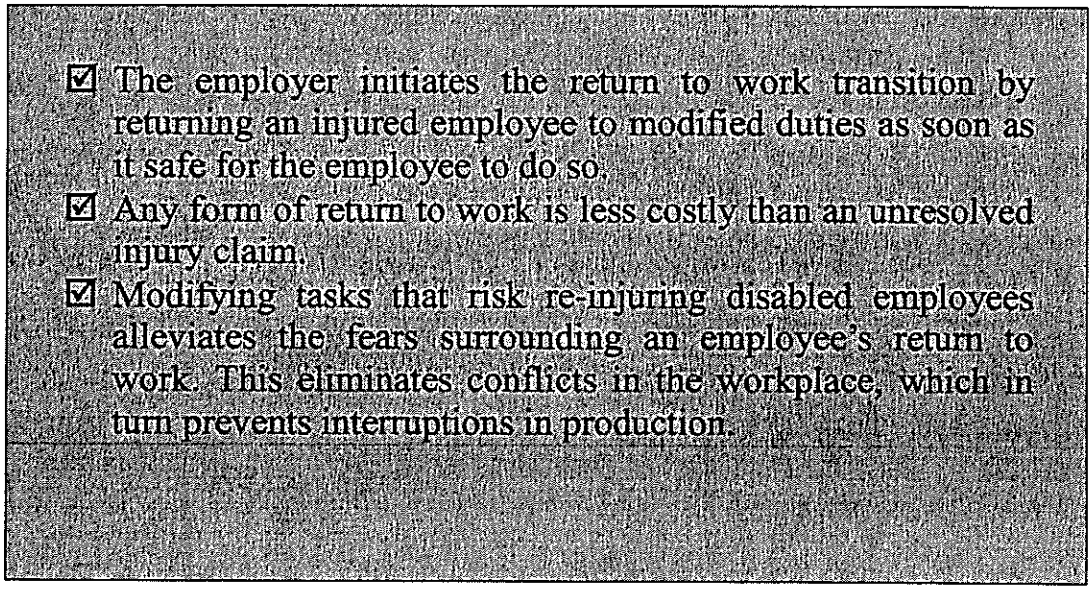
MODIFIED DUTIES ANALYSIS

Injured employees who demonstrate improvements in the course of recovery may be able to perform their pre-injury job with some "modified" duties. The Modified Duties Analysis is designed to identify modifications to an employee's pre-injury job, which ensure his or her safe and timely return to work. These modifications may be administrative or engineering. Functional limitations following an injury are determined through the Return-to-Work Evaluation and cross-referenced with the Job Demands Analysis.

BENEFITS

Returning an injured person to the workforce is one of the greatest sources of savings for employers since it signifies the cessation of claims costs. However, injured employees are often returned to their pre-injury jobs with residual physical limitations. When this happens, there is a high risk of re-injury. This can be accompanied by a steep and unexpected rise in employer costs. According to the Bureau of Labor Statistics, the number of injury claims associated with repeated trauma increased by 128 per cent in the last decade.

By returning injured employees to their pre-injury jobs while ensuring their safety, these costs are avoided.



MODIFIED DUTIES ANALYSIS FLOWCHART

Return-to-Work Evaluation

Job Demands Analysis

Identify Physical Limitations and Abilities

Identify Job Tasks and Nature of Tasks

Conduct Cross Comparisons between Limitations and Corresponding Tasks

Modify Tasks to Accommodate Limitations

ADMINISTRATIVE MODIFICATIONS

This involves changes in policy such as:

- Change in production speed
- Change in rest structure (i.e. Frequent small breaks rather than infrequent long breaks)
- Change in workplace flow

ENGINEERING MODIFICATIONS

This involves changes in the workplace such as:

- Change in layout of the workplace
- Change in travel or carrying distance, or lifting weights
- Addition of work aids

ALTERNATE DUTIES ANALYSIS

Injured employees who show improvements in their course of recovery may still have residual physical limitations that prevent them from performing their pre-injury jobs safely. Despite physical limitations, most individuals will be able to perform some of their pre-injury duties. In some instances, the pre-injury job cannot be modified to accommodate an employee's limitations. When such situations arise, the injured employee may be assigned to an "alternate job" within the workplace. The Alternate Duties Analysis is designed to identify a safe alternate job for an injured employee. The results of a Return-to-Work or Impairment Evaluation (are cross-referenced with the Job Demands Analysis of various jobs in the workplace.

BENEFITS

Returning an injured person to the workforce is one of the greatest sources of savings for employers since it signifies the cessation of claims costs. However, injured employees are often returned to their pre-injury jobs with residual physical limitations. When this happens, there is a high risk of re-injury. This can be accompanied by a steep and unexpected rise in employer costs. By returning injured employees to safe alternate jobs, these costs are avoided.

- ☑ By returning an injured employee to alternate duties as soon as the employee can safely do so, the employer initiates the return to work transition.
- ☑ Any form of return to work is less costly than an unresolved injury claim.
- ☑ Appropriate alternate jobs ensure productivity of the employee.
- ☑ Eliminating jobs that carry a risk of re-injury to the injured employee alleviates the employee's fears regarding return to work. This eliminates conflicts in the workplace, which in turn prevents interruptions in production.

ALTERNATE DUTIES ANALYSIS FLOWCHART

Return-to-Work or Impairment Evaluation

Job Demands Analysis of Alternate Jobs in Workplace

Identify Physical Limitations and Abilities

Identify Job Tasks and Nature of Tasks

Conduct Cross Comparisons between Limitations and Corresponding Tasks

Identify Most Appropriate Alternate Job

RETURN TO WORK

WORK SIMULATION EVALUATION

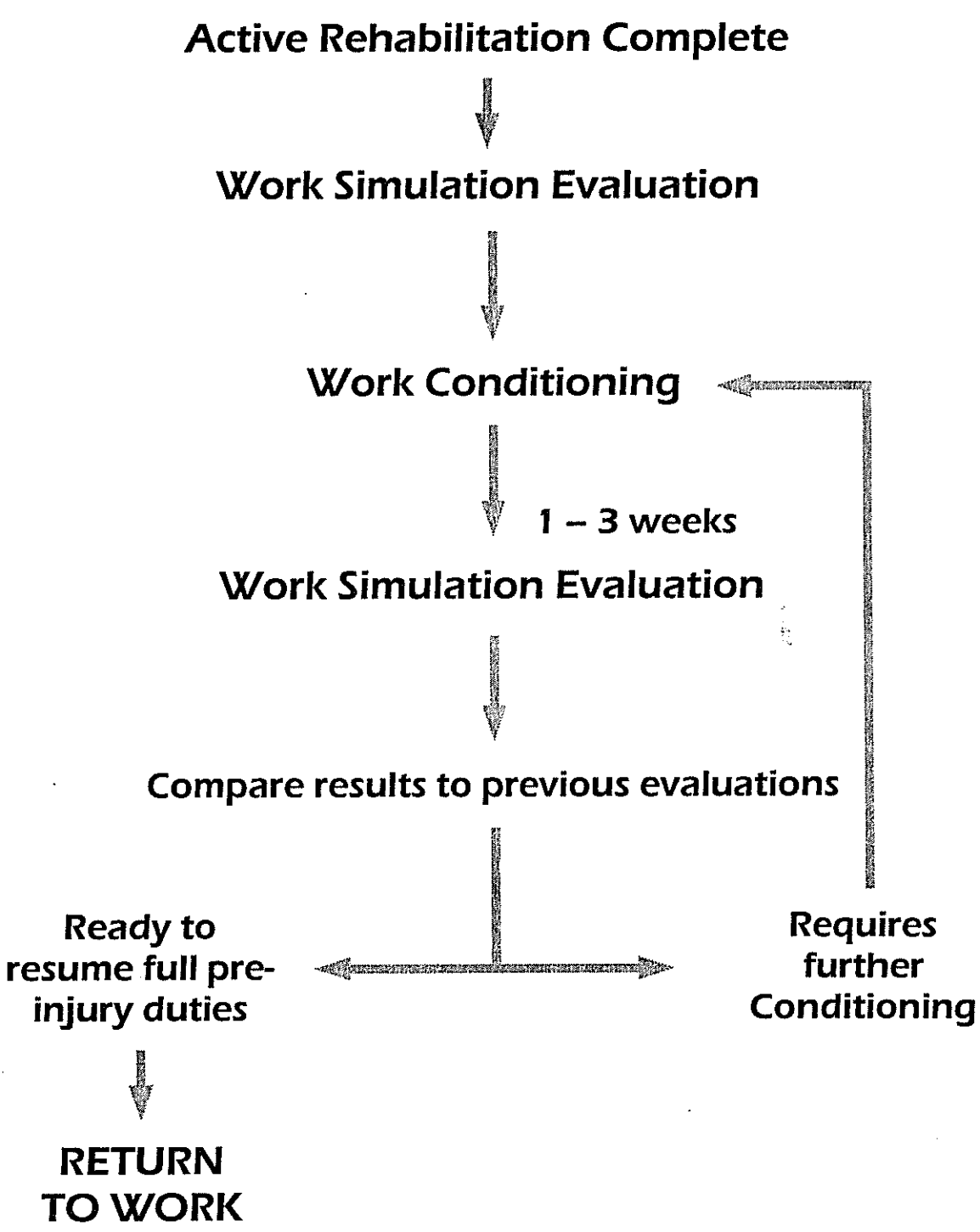
A Work Simulation Evaluation is designed for an individual who is about to enter a work conditioning program. The Work Simulation Evaluation may also be a component of a Return-to-Work Evaluation. The aim of the evaluation is to establish the evaluee's ability to perform the essential tasks of the pre-injury job. Any limitations identified may be emphasized in the work conditioning program. The evaluation may be repeated at scheduled intervals in the course of the work conditioning program to monitor progress or identify barriers to recovery. A Work Simulation Evaluation may be performed at the job site as the ultimate determination of readiness to return to work.

BENEFITS

In some cases, work conditioning takes place at the job site. Conducting a Work Simulation Evaluation will signal the evaluee's readiness to enter this phase of his or her rehabilitation. This means that the employee is back to work while undergoing rehabilitation. This form of return to work is less costly than an ongoing claim.

- ☑ Work Simulation Evaluations allow healthy communication between the employer and the injured employee during the work re-entry phase of his or her recovery.
- ☑ Employers can keep abreast of an injured employee's progress in the work conditioning program.
- ☑ The employer can work with the injured party to set goals for return to work. This also allows the employer to identify suitable modified or temporary alternate positions in the workplace to ease the employee's return to work.
- ☑ Identifying barriers to recovery decreases rehabilitation costs by allowing the employer or rehabilitation provider to identify appropriate changes in the therapy or job modifications.
- ☑ Return to work when the employee is physically ready means lower risk for re-injury which is the most costly claim of all.

WORK SIMULATION EVALUATION FLOWCHART



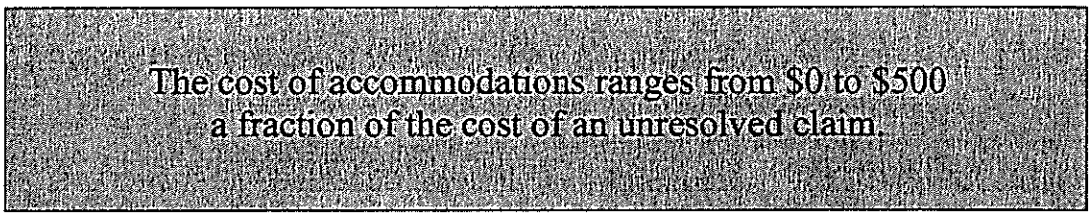
DISABILITY EVALUATION

A Disability Evaluation is a determination of loss of ability to engage in a chosen occupation. The disability determination is made by a multi-disciplinary team of health care professionals since it involves a myriad of aspects including mental and physical aspects. Disability is defined as a decrease in, or the loss or absence of, the capacity of an individual to meet personal, social, or occupational demands, or to meet statutory or regulatory requirements. A Disability Evaluation determines the degree to which the individual does or does not have the capacity to meet the above needs. A disability is considered permanent when the degree of capacity becomes static or stabilized and is not likely to increase despite continuing use of medical or rehabilitative measures.

BENEFITS

Very often, a disability can be overcome through relatively inexpensive workplace accommodations. Identifying the level of disability through a Disability Evaluation is a key step in determining whether return to work is feasible through reasonable accommodation. The cost of accommodations ranges from $0 to $500 – a fraction of the cost of an unresolved claim.

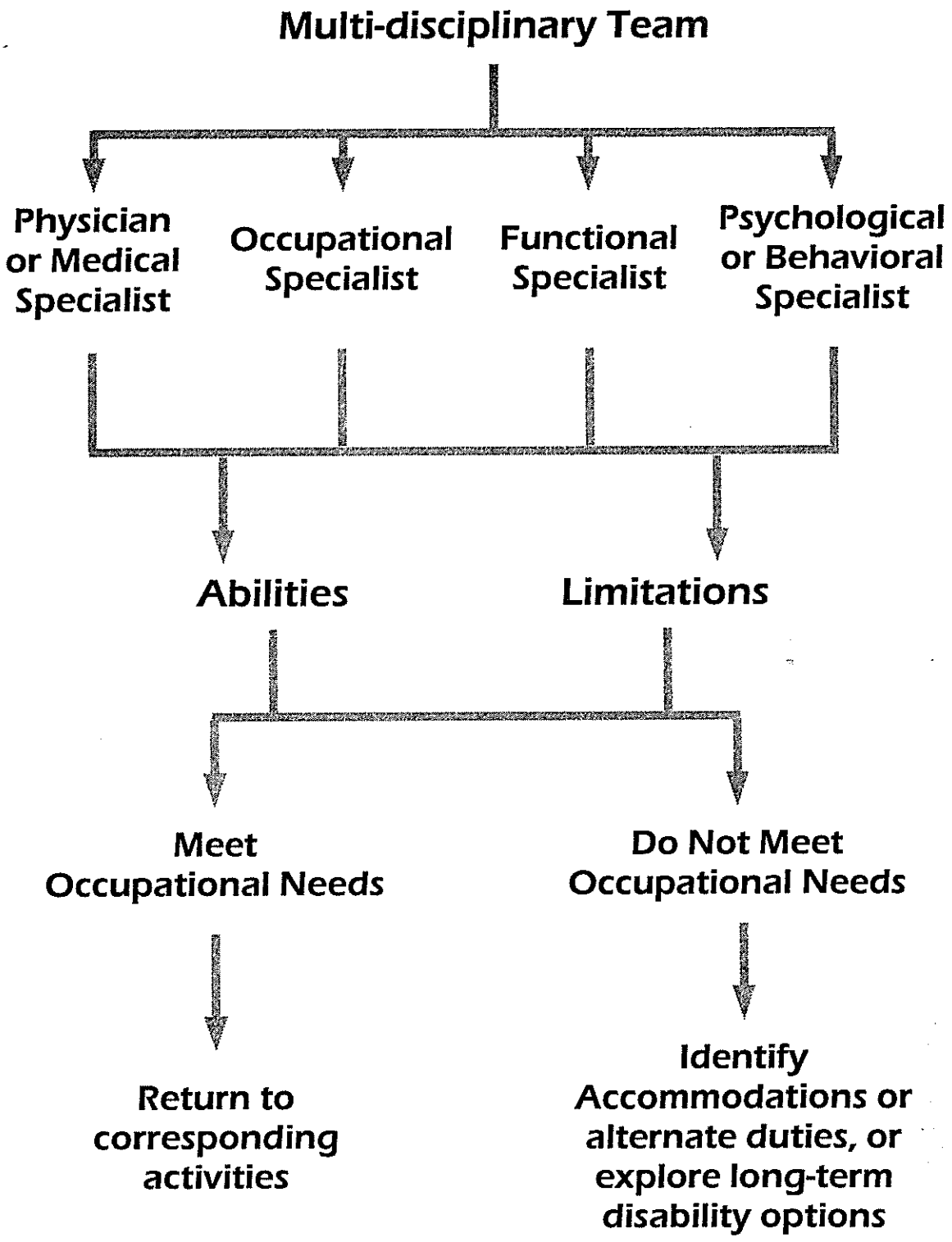
Defining disability and creating ability through accommodations paves the way for employers to save, beginning with early return to work. Return to work creates a healthy environment for all employees and is a strong foundation for organizational harmony. Additional savings include medical, indemnity, legal and administrative costs in claims management, hiring of temporary staff for the duration of a claim, the training temporary or replacement employees, and premiums for worker's compensation insurance.



LEGAL CONSIDERATIONS

The laws governing impairment evaluations will varying according to jurisdictional legislation and contract law.

DISABILITY EVALUATION FLOWCHART



IMPAIRMENT EVALUATION

An Impairment Evaluation is a specialized type of evaluation that utilizes reference normative data to determine a mathematical number that is representative of the level of Impairment. Impairment is defined as the loss, loss of use, or derangement of any body part, system, or function. Impairment ratings are often used when an individual reaches Maximal Medical Improvement (MMI). MMI is the point at which an individual's post-injury function will not improve significantly even with therapeutic intervention. A permanent impairment is considered to be unlikely to change substantially and by more than 3 per cent in the next year with or without medical treatment. Many of the other evaluations measure an individual's ability at some point in time, and that ability may change over the course of time or some form of therapy. The Impairment Evaluation is a final determination of ability to return to work or return to alternative employment.

BENEFITS

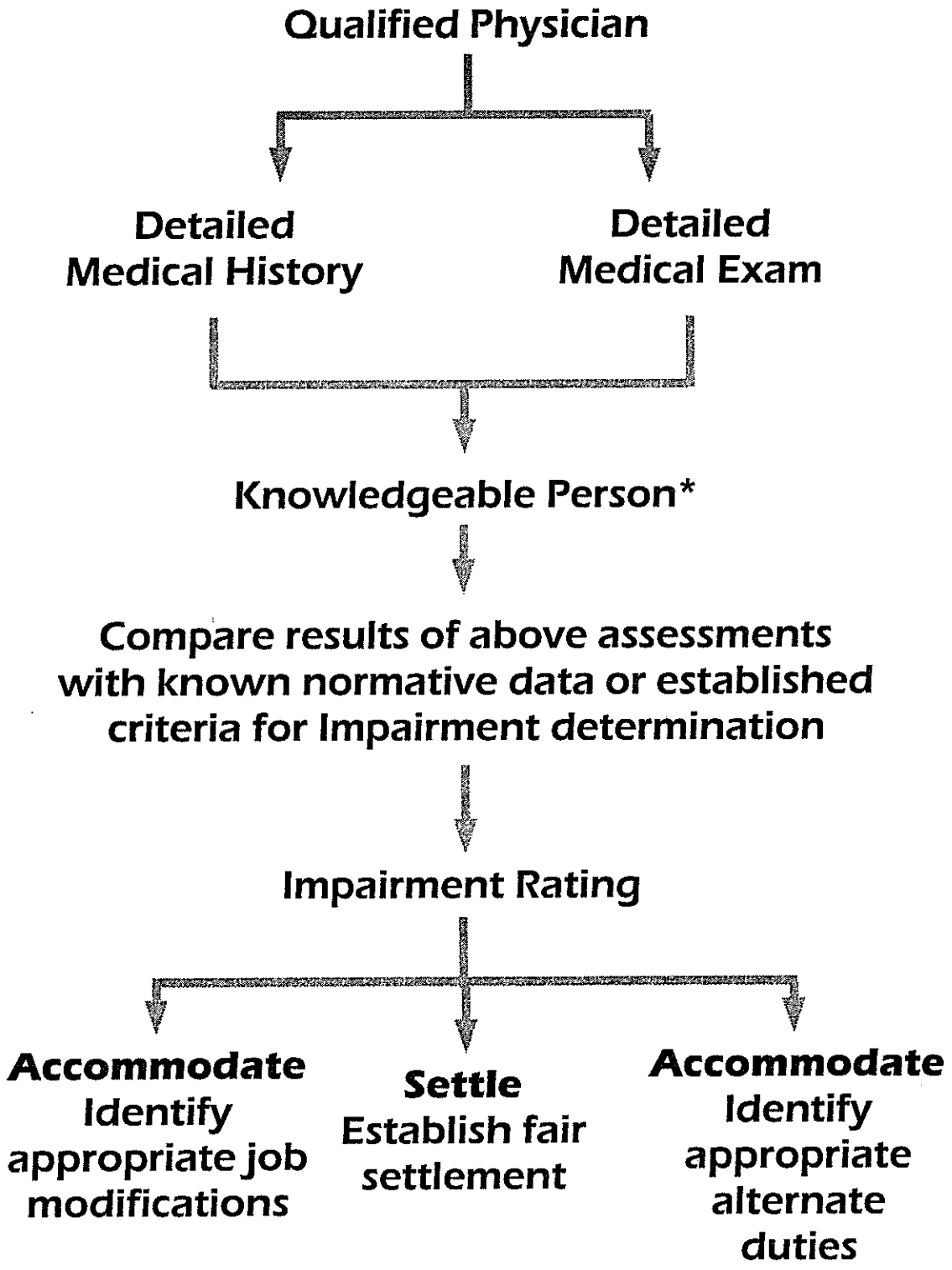
An Impairment Evaluation is a final determination of ability to return to work or return to alternative employment. This brings closure to a claim. If an impairment is identified, a settlement can be made based on the level of impairment.

Impairment Evaluations ensure that the final determination of impairment is objective, fair and consistent among all persons. Employers can avoid unnecessary conflicts that affect productivity and high settlement costs.

LEGAL CONSIDERATIONS

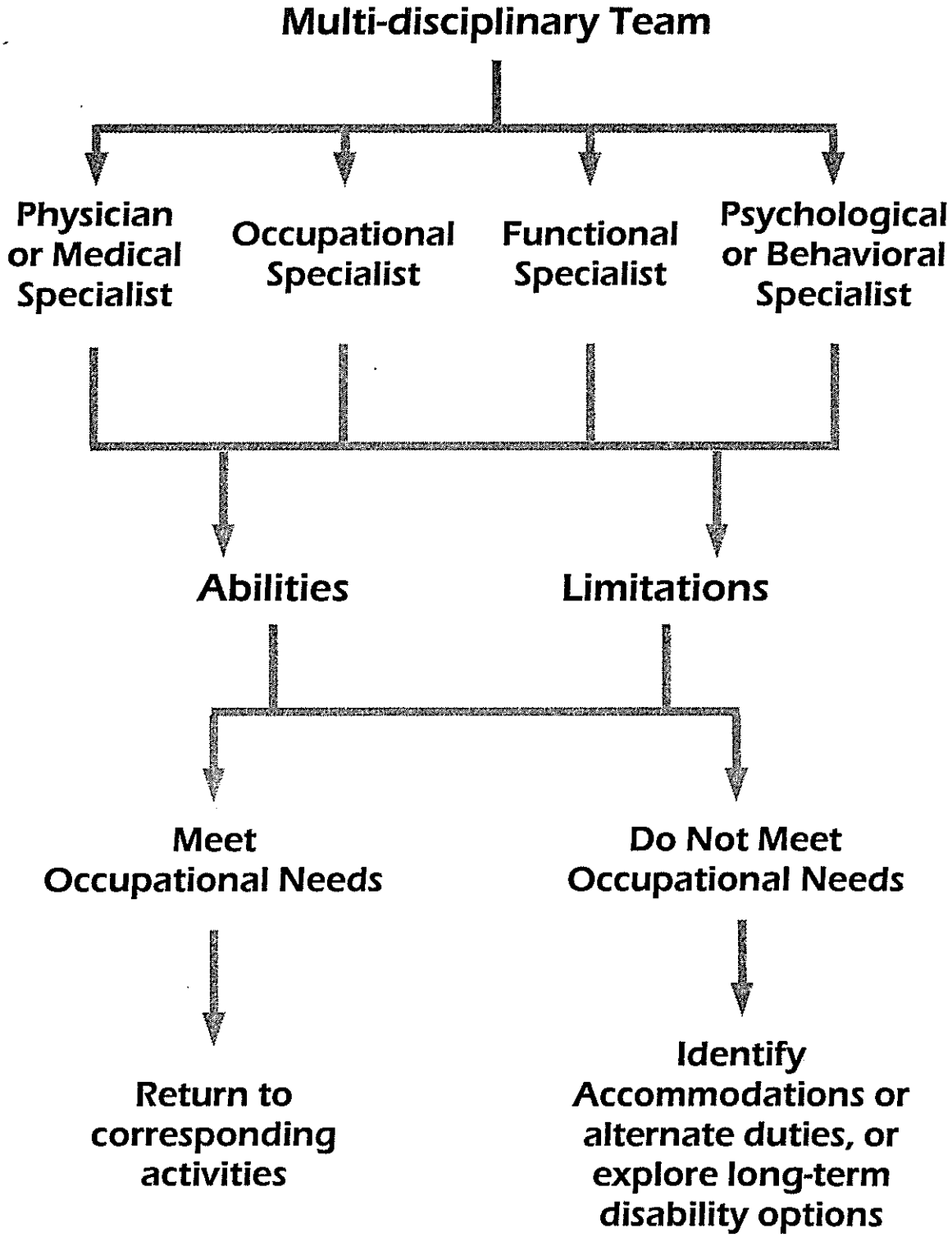
The laws governing impairment evaluations will varying according to jurisdictional legislation and contract law.

IMPAIRMENT EVALUATION FLOWCHART



* Knowledgeable person refers to a person who is knowledgeable in the criteria for Impairment Rating Determination.

DISABILITY EVALUATION FLOWCHART



IV. ISSUES IN FUNCTIONAL CAPACITY EVALUATION

CRITICAL ANALYSIS

Functional Capacity Evaluation (FCE) methodology was developed to measure an injured worker's ability to return to occupational requirements. However, there has been a failure in FCE methodology to meet these objectives with scientific validity and reliability (Rucker, Wehman and Kregel).

Future trends will see advancement in the application of scientific measurement principles to Functional Capacity Evaluation. The health care industry demands economical evaluation. The medical-legal system requires evaluations that can be supported by experts applying scientific methodology. These pressures are catalysts to the research and professional development in this field.

THREATS TO VALIDITY AND RELIABILITY

- ☒ internal validity and reliability of the instruments and tests
- ☒ calibration of instruments
- ☒ lack of general training in testing and measurement
- ☒ lack of specific training in the specific test protocol
- ☒ lack of a proper comparison to measure the evaluee's results

JOB DEMANDS ANALYSIS REQUIRED

The greatest threat to validity arises from an absence of a Job Demands Analysis (JDA). The JDA allows the evaluator to compare the results of the FCE to the demands of the job. Without the JDA the evaluator must use only generic definitions of the work requirements. The evaluator should express caution in interpretation of the results under such circumstances.

QUESTIONABLE OUTCOMES

A recent review by a major insurance company found that 70% of Functional Capacity Evaluations had no impact or a negative impact on case resolution.

WHAT YOU SEE IS WHAT YOU GET

Most FCE's developed as a hybrid of biomechanical observation plus standardized strength testing methodologies with limited content validity. These evaluations tend to output a ***What-You-See-Is-What-You-Get*** (***WYSIWYG***) report based on the evaluee's effort output as observed by the evaluator, inconclusive as to the evaluee's capacity. Self limiting psychophysical behavior is a serious impediment to evaluation of capacity to perform occupational tasks throughout a workday. An evaluation process that defers conclusions because the evaluee did not apply themselves in a consistent, reliable or valid manner has poor credibility. Such a process can exacerbate evaluee symptom magnification and create significant problems for the end users of the evaluation; physicians, case managers, insurance companies and rehabilitation counselors.

Can you tell which image is distorted?

Both are!

In the absence of medical contraindications to non-exertional occupational requirements and in the presence of self limiting behavior, the evaluee should be judged able to perform some measure of occupational requirement.

VOCATIONAL OUTCOMES

The goal of an FCE is to determine an evaluee's ability to meet occupational requirements. The report language must translate the language of the medical and biomechanical model to the vocational model. Function must be stated in terms of ***ability*** to perform work demands, sustainable at a productive level over time. Definition of physical abilities must use language understandable to the vocational case manager and employer. The common language is the Physical Demand Characteristics (PDC) categories of the Dictionary of Occupational Titles (DOT) and the National Occupational Classification System (NOCS) crosswalk to the Canadian Classification and Dictionary of Occupations (CCDO):

???

"Dear Employer. . .The patient presents with a frontalis EMG of 500-800 Hz, and a neurosensory deficit of the right ocular orbit. The patient must be accommodated at work accordingly. . . Dr. J Sorbonne, Neurologist"

???

TERMINOLOGY

Strength Rating	Occasionally (O)	Frequently (F)	Constantly (C)
Sedentary	* - 10	*	-
Light	*- 20	* - 10	*
Medium	20 - 50	10 - 25	* - 10
Heavy	50 - 100	25 - 50	10 - 20
Very Heavy	100+	50+	20+

* - negligible weight

Climbing	Balancing	Stooping
Kneeling	Crouching	Crawling
Reaching	Handling	Fingering
Feeling	Talking	Hearing
Tasting/Smelling		Seeing

Occasionally (0-33% day) Frequently (33-66% day) Constantly (66-100% day)

SUMMARY

The learning objective of this section was to:

- ✓ Introduce the evaluator to the purpose and reason for FCE
- ✓ Acquaint the evaluator with core FCE methodologies
- ✓ Outline the major issues facing the FCE evaluator

FCE: an overview

LEARNING EXERCISE

Define:

Functional Capacity Evaluation

Disability Evaluation

Impairment Rating

Post-Offer of Employment

What methodologies does your FCE use?

What are the greatest threats to validity and reliability in your FCE?

REFERENCES

1. "A novel approach to pre-employment workers fitness evaluation in material handling industry." SPINE 19.18 (1994): 2026-2032.
2. "An industrial model for assisting employment to comply with the ADA of 1990." American Journal of Occupational Therapy 46.5 (1992): 427-433.
3. "Are measures of Function and Disability Important in Lower Back Care?" Physical Therapy 74.1 (1994): 452.
4. "Assessment of capacity of job requirements at the interface between medical and occupational rehabilitation." Rehabilitation 35.1 (1996): 19-22.
5. "Development of Clinical Standards in Industrial rehabilitation." Journal of Ortho Sports and Physical Therapy 19.5 (1994): 232-241.
6. "Employment after rehabilitation for musculoskeletal impairments: The vocational rehabilitation and working on a trial basis." Arch of Phys Medicine and rehabilitation 76.10 (1995): 950-954.
7. "Evaluating the outcome of vocational rehabilitation." Scand Journal of Rehabilitation Medicine 26.2 (1994): 103-112.
8. "Functional restoring. Referring patients with LBP to work: revolution or fad." SPINE 21.7 (1996): 844-847.
9. "Guidelines for Functional Capacity Evaluations of People with Medical Conditions." Journal of Orthopedic and Sports Physical Therapy 18 (1993): 682-686.
10. "Job Site Analysis facilitates work reintegration." American Journal of OT 49.5 (1995): 461-467.
11. "Measuring Physical Disablement." The Contextual Challenge 74.1 (1994): 444.
12. "Measuring the effectiveness of pre-employment screening." Occupational Health 47.6 (1995): 200-201.
13. "Measuring the Functional Status of Patients with Lower Back Pain." Arch. Phys. Medicine of Rehabilitation 69 (1988): 1044-1053.
14. "Musculoskeletal disability, employment and rehabilitation." 22.3 (1995): 505-513.
15. "Occupational Musculoskeletal Disorders." Primary Care: Clinics in office practice 21.2 (June): 313-327.
16. "Personal Risk Assessments under Americans with Disability Act. A decision analysis approach." Journal of Occupational Medicine 35.10 (1993): 100-1010.
17. "Placement screening for back injury and disability." Journal of occupational and environmental medicine 37.10 (1995): 1189-1190.
18. "Pre-employment and pre-placement medical discrimination and confidentiality." LAMP 52.5 (1995): 22.
19. "Pre-employment Screening." Occupational Health 47.5 (1995): 165.
20. "Prognostic for RTW after 1st compensated episode of back pain." Occupational and Environmental Medicine 53.7 (1996): 488-494.
21. "Reduction in turnover, accidents and absenteeism, the contribution of pre-employment screening inventory." Journal of Clinical Psychology 49.1 (June): 109-161.
22. "Reliability and validity of newly developed test of physical performance." Journal of Occupational Medicine 36.9 (1994): 997-1004.
23. "Return to work determination." Physical Medicine and Rehabilitation 6.2 (1992).
24. "Return to work/work? Outcomes of a functional restoration program. A multicentre, prospective study." SPINE 19.17 (1994): 1880-1885.

25. "Task Specific Rehabilitation Programs decrease claims." Occupational Health and Safety 61.8 (1992): 22-24.
26. "The Functional Capacity Evaluation." Occupational Medicine 7.1 (1992): 113-124.
27. "The injured workers: Assessment of return to work status." Cleveland Clinic Journal of Medicine 63.3 (1996): 166-171.
28. "The origin and evolution of activity analysis." American Journal of OT 46.1 (1992): 45-48.
29. "Work Evaluations: Critique of the state of the art of functional assessments of work." American Journal of Occupational Therapist 47.3 (1993): 203-209.
30. "Work For All: For Those with Low Back Pain As Well." Clinical Orthopedics and Related Research 179 (1983).
31. "Worker's Disability and Return to Work." American Journal of Physical Medicine and Rehabilitation 71.2 (1992): 92-96.
32. Abdil-Moty E, et al. "Functional Capacity and Residual Capacity and their utility in measurement of Work Capacity." C.I.J Pain 9.3 (1993): 168-173.
33. Barrows, DM; "Functional Capacity Evaluations of Persons With Chronic Fatigue Immune Dysfunction Syndrome". Am J Occup Ther, 49(4):327-37 1995 Apr.
34. Beutel, M; Kayser, E; Vorndran, A; Farley, A; Bleichner, F; "Integrated Occupational Work Capacity Evaluation in Medical Rehabilitation-Experiences and Prospects Exemplified by Psychosomatic Rehabilitation". Rehabilitation (Stuttg), 37(2): 85-92 1998 May.
35. Catchove RFH, Cohen K. "Effects of directive return to work approach in the treatment of workman's compensation patients with chronic pain." Pain 14 (1992): 181-191.
36. Chaffin DB, Anderson GBJ. Occupational Biomechanics. New York: John Wiley and Sons, (1984).
37. Clark W, Haldman S. "The development of guideline factors for the evaluation of disability in neck and back injuries." SPINE 18.13 (1993): 1736-1245.
38. Daus C. "The functional capacity assessment." The Risk and Benefits Journal Jan./ Feb. (1992).
39. Fey SH, Williamson-Kirkland TE, Frangrove R. "Vocational restoration in injured workers with chronic pain." PAIN 4 (1987): S379.
40. Gallager RM, et al. "Determinants of return to work among low back pain patients." PAIN 39 (1989): 55-67.
41. Granger CV, Greham GE. Functional Assessment in Rehabilitation Medicine. Baltimore: M.D. William's and Wilkins, (1984). 64-84.
42. Hall H, et al. "Effect of discharge recommendations on outcome." SPINE 18 (1994): 2033-2037.
43. Hart DL, Isernhagen SJ, Matheson LN. "Guideline for functional capacity evaluation of people with medical conditions." J Occup Sports Phys Ther 18.6.
44. Harten, JA; "Functional Capacity Evaluation". Occup Med, 13(1):209-12 1998 Jan-Mar.
45. Himmelstein, J.S. and Pransky, G.S. (ed) "Worker Fitness and Risk Evaluations". Hanley & Belfus, Philadelphia, PA (1988)
46. Holmes, D. "The Role Of the Occupational Therapist – Work Evaluation." American Journal of Occupational Therapy. 39 (1985): 300-313.
47. Hook TW. "A private practice work evaluation unit." OT in HC 2.4 (1985-1986).

48. Isernhagen SJ. "Functional capacity evaluation and work hardening perspectives." TG Mayer, JV Mooney, R Gatchel, eds. Contemporary conservative care for painful spinal disorders. Philadelphia: Lea and Febiger, (1991), 328-345.
49. Isernhagen SJ. "Return to work testing, functional capacity and work capacity evaluation." Orthopedic Physical Therapy Clinics 1 (1992): 83.
50. Key LG. "Functional Capacity Evaluation." Returning the Worker to Productivity.
51. Kraus, J; "The Independent Medical Examination and the Functional Capacity Evaluation". Occup Med, 12(3): 525-56 1997 Jul-Sep.
52. Krause, Niklas; Dasinger, Lisa; Neuhauser, Frank; "Modified Work and Return to Work: A Review of the literature". Journal of Occupational Rehabilitation. 1998 Jun; Vol 8 (2); 113-139.
53. Mather JH. "The problem of functional assessment." Political and Economic Perspectives
54. Matheson LN. "Functional Capacity Evaluation." AMA Disability Management.
55. Mayer MD, et al. "A prospective 2-year study of functional restoration industrial low back injury – An objective assessment procedure."
56. Menard M, Hoens AM. "Objective Evaluation of Functional Capacity: Medical and Occupational and Legal." JOSPT 19.5 (1994): 249.
57. Miller M. "Functional Ability: A Vital Component of Work Injury Management." WORK 1 (1991): 6-10.
58. Mitchell RI, Carmen GM. "The functional restoration approach to the treatment of chronic pain in patients with soft tissue and back injuries." SPINE 19.6 (1994): 633-642.
59. Owens LA, Buchholz RL. Principles and Practices of Disability Management. Functional Capacity Evaluation Strategies and the Disability Management Process.
60. Piela CR, et al. "Prediction of functional capacities." WORK 6 (1996): 107-113.
61. Randolf S, Dalton P. "Limited duty work. An innovative approach to early RTW." American Association of Occupational Health Nurses Journal. 37.11 (1989): 446-452.
62. . Rousmaniere, Peter R; "How Should We measure Return-To-Work Success"? The Journal of Workers Compensation, Vol 7 No. 4 Summer 1998.
63. Scheer S. Assessing the vocational capacity of the impaired worker. (Rockville, MD: Assessment Publisher, 1990).
64. Sheilch K. "Occupational injury: Chronic low back pain and return to work." Public Health 101 (1987): 417-425.
65. Shirley DE, Olsheski JA. "Disability management and industrial based work return transition programs." Phys Med and Rehab 6.2 (1992): 303.
66. Smith S, Cunningham S, Wenking R. "Predicting Employment of the Physically Disabled Worker." Occupational Therapy Journal of Research 3 (1983): 178-179.
67. Smith, S, Cunningham, S, Wenking, R. "The Predictive Validity of the Functional Capacity Evaluation." American Journal of Occupational Therapy. 40 (1986): 564-567.
68. Steele-Rosomoff R. "Inpatient and outpatient chronic pain progress can be successful in restoring patients to gainful employment." Clinical Journal of Pain 6 (1990): 80-83.
69. The Functional capacity evaluation. "Measuring maximum work abilities." Occupation Medicine 7.1 (1992): 113-124.

70. Vasudevan, SV. "Impairment, Disability and Functional Capacity Assessment." DC Turk, R Melzack, eds. Handbook of Pain Assessment. New York, N.Y: Guilford Press, (1992).
71. Velozo CA. "Work Evaluations: critique of the state of the art of functional assessment of work." Am J Occup Therapy 47.3 (1993): 203-209.
72. White, KP; Harth, M; Teasell, RW; "Work Disability Evaluation and the Fibromyalgia Syndrome". Semin Arthritis Rheum, 24(6):371-81 1995 Jun.
73. Wright BD, Linacre JM, Heineman AW. "Measuring functional status in rehabilitation." In CV Granger, GE Gresham, eds. Physical medicine and rehabilitation clinics of North America: New developments in functional assessment. Philadelphia: W.B. Saunders

RESOURCES:

Dictionary of Occupational Titles, Revised; 4th Edition 1991, V. 1-2 ,Labor Dept., Employment and Training Administration, United States Employment Service order through US Government Printing Office
https://orders.access.gpo.gov/su_docs/sale/prf/prf.html

National Occupational Classification, Occupational Descriptions; 1993
The National Occupational Classification (NOC) is a systematic taxonomy of occupations in the Canadian labour market. It is based on extensive occupational research, analysis and consultation conducted across the country. THE NOC replaced the Canadian Classification and Dictionary of Occupations (CCDO)
Human Resource Centre of Canada - Administration Office
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301/495-5626 (TTY)
301/562-2401 (fax).
Publications:
The Employment Experience of Persons with Limitations in Physical Functioning (1999).
Rehabdata: on-line searchable database at
http://www.naric.com/naric/search/rhab/index.html