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Studies and Research Projects

■ TECHNICAL GUIDE RG-797



Work Functioning Assessment of the Physically Impaired Person

Clinical Practice Guideline for Occupational Therapists

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Introduction

In Quebec, occupational therapists (OTs) are frequently involved—whether alone or as part of an inter- or multidisciplinary team—in work functioning assessments (WFA) of people with physical impairments. But it is well known in the field that there is a significant degree of variability in WFA clinical practice (1; 2; 3). A number of factors can be cited to explain this variability, including the lack of available training, the range of clinicians' experience (1; 4; 5; 6; 7), the inadequacy of existing conceptual models (8; 9), the lack of available clinical evaluation tools (10; 7), the poor measurement properties of the tools and the lack of studies of them (11; 12; 13; 3; 14; 15; 16), as well as a lack of practice standards (17; 18; 3; 19). The broad variability in WFA clinical practices raises questions about the quality of the services clients receive (19). If differences in clinical practice can lead to different conclusions when assessing the same individual, there will inevitably be a risk of harm. At present, one of the ways being proposed to reduce variability in clinical practice and improve the quality of care is to establish clinical practice guidelines (CPGs) (20; 21; 22). CPGs are made available to clinicians as a source of information on up-to-date evidence on which to base decisions (20). This guideline consists of systematically developed recommendations to help occupational therapists and their clients choose the most appropriate assessment strategies for a WFA.

The guideline is divided into several sections. Section 1 explains the concepts related to work functioning and its assessment, then situates WFA in the rehabilitation process. This section will help readers become familiar with the terminology and concepts used in the recommendations. Section 2 presents the recommendations. Section 3 uses a clinical vignette to illustrate how the recommendations can be put into practice. Section 4 summarizes the recommendations, briefly describes how they were developed and explains the levels of research evidence.

Section 1

General Concepts

General Concepts

Some background is necessary before we go into detail about the recommendations. This section (i) defines the concepts of work and work functioning assessment (WFA); (ii) presents the conceptual work functioning model used in the recommendations; (iii) situates the WFA in the occupational rehabilitation process and (iv) defines WFA goals and describes the different types of work-related assessments.

Work

The word “work” has several meanings:

activity in which one exerts strength or faculties to do or perform something: sustained physical or mental effort to overcome obstacles and achieve an objective or result; the labour, task, or duty that is one’s accustomed means of livelihood; a specific task, duty, function, or assignment often being a part or phase of some larger activity (23).

“Work” can designate either the result of an activity, the effort made to achieve the result or the activities themselves (24). There are probably so many definitions because work is a multidimensional human activity that means different things to different people in different circumstances.

Yet one thing is certain: work takes up a large part of adult life (25; 26). By its nature, it contributes to income, social status, personal fulfillment, etc. In short, work plays a major role in our lives (25; 26; 27; 28). When this role is interrupted, our lives are turned upside down. Consequently, returning to work is an important goal of rehabilitation. Evaluating the work functioning of a person with a physical impairment is an essential part of his rehabilitation.

Note

In occupational therapy, the term “work” comprises all productive activities, including volunteer work, studying and housekeeping, and some recreational activities (28; 25; 29). Although this broad view is fully justified in rehab, this guideline refers solely to paid work.

Definition of WFA

A work functioning assessment (WFA) is an appraisal of a person’s ability to work. The assessment is frequently done as part of occupational rehabilitation (29). A WFA describes and analyses job tasks and requirements and, on the basis of different strategies, determines how the worker can fulfil them (14). A WFA is distinct from a medical assessment, which determines whether a worker is physically or mentally fit to return to work (30). A WFA may be performed in parallel with a medical assessment and supplement it (31).

Generally speaking, the WFA helps to clarify the back-to-work prognosis; determine what rehabilitation treatments to offer and the right time for a safe, sustainable return to work; or provides information that can help with career change decision making (1; 29).

Work Functioning Model

There are a number of models that represent a person's work-related functioning. Sandqvist and Henriksson's (32) is of particular interest because it makes explicit and schematizes the various dimensions and concepts of work functioning, thus enabling OTs to target the most important dimensions to be taken into account in a WFA. It provides a conceptual basis for choosing strategies and evaluation tools, depending on the dimension that the assessment is focusing on.

This model, based on the *International Classification of Functioning, Disability and Health* (ICF) (33), takes into account both the individual's specific functioning at work and any personal and environmental factors that might affect it. Figure 1 (p. 8) illustrates the components of the model. Three dimensions of work functioning are identified: work participation, work performance and individual capacity.

Work participation is defined as a person's ability to get and keep a job and thus play a role as a worker. It refers to involvement in or integration into the labour market. According to the ICF (33), work participation is shown by

- preparing for work (taking academic training, doing an internship, etc.);
- seeking, finding and getting a job, keeping a job, advancing in a position, trade or profession, leaving a job in an appropriate way;
- being involved in all aspects of a job by fulfilling all associated tasks and duties.

This dimension depends not just on the individual, but also on social factors, such as the economic situation, the availability of jobs, prejudice against disabilities and government assistance programs. Restrictions on work participation are determined by comparing the person's participation with social expectations of someone without work performance problems.

Work performance refers to the ability to perform job-related tasks and duties satisfactorily. This can be observed while the person is performing a work task in a situation in which quantity and quality of work count. Work performance is shown by demonstrating

- physical skills required to perform tasks;
- ability to organize time, plan tasks, adapt to changes, solve problems, etc.;
- communication skills and social interactions required to perform tasks;
- etc.

Expected performance is the prevailing standard for tasks done by workers without any health problems. A performance limitation refers to difficulty doing tasks up to the expected standards

of a particular job. Work performance depends on individual capacity and how the worker makes use of it, as well as on the type of task and the setting in which it is done.

Finally, **individual capacity** is what enables a person to perform part of a work task. Skills depend on capacity, which can be measured by tests. We are talking more specifically about maximum capacity (e.g., muscular strength, tactile discrimination, divided attention, hearing, etc.) measured in a neutral setting by an evaluation tool (33).

The three dimensions of work functioning (participation, performance and capacity) affect one another. So although all three are considered at the same time as part of functioning, they must also be assessed independently to clarify their individual impacts on functioning.

Many personal factors (e.g., age, sex, experience) and environmental factors (e.g., workstation set-up) also affect work functioning, either positively or negatively. In Figure 1, these factors are represented by two circles. Their intersection represents the interaction between the person and the environment. Work functioning depends on this interaction. Diminished work functioning is thus the result of a poor fit between the person and the work. In contrast, a good fit results in smooth or efficient functioning. A variety of terms are used in the literature to designate this smooth interaction (1; 14; 25; 26; 34). None of them has been clearly defined. We have chosen to use the term **compatibility** in the guideline because it is already widely used in clinical settings to mean a good fit between the work and the person doing it.

A person's work functioning is also influenced by time (32). A person changes over time (aging, fluctuating health, etc.), as do job requirements (busy periods, new technology, restructuring of company, etc.). As a result, the outcome of a WFA is only a description of an individual's functioning at a specific point in time. In Figure 1, the arrow represents the influence of time on all aspects of functioning and on personal and environmental factors.

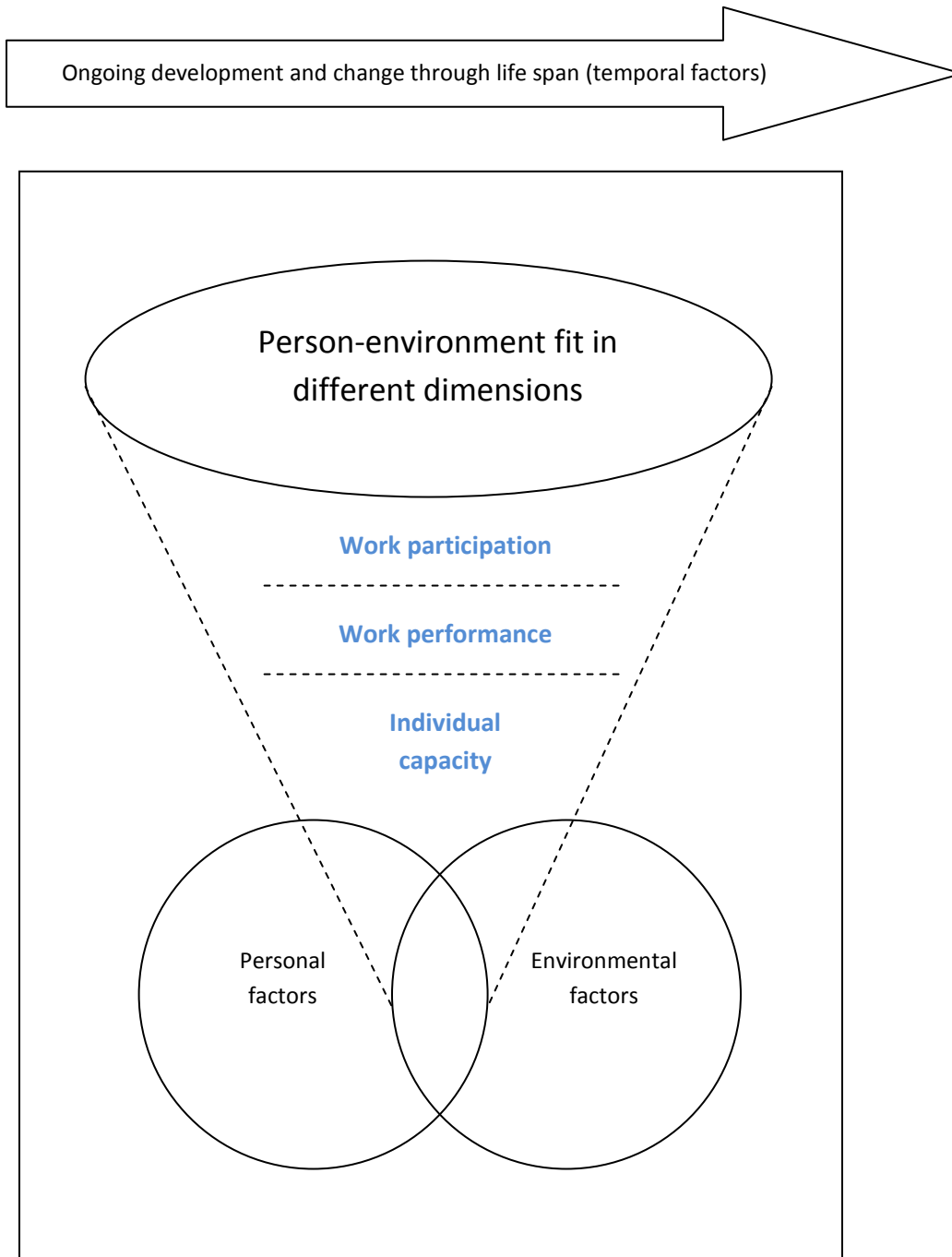


Figure 1 – Work functioning model, from Sandqvist and Henriksson (32)

Occupational Rehabilitation Process

A work functioning assessment is usually part of the occupational rehabilitation process, illustrated in Figure 2 (29; 1). The process has been divided into stages for the sake of clarity. It is not actually sequential. Depending on the person's needs, some stages may be reversed, concurrent or omitted entirely. Very often, the rehabilitation process follows an iterative path between the various stages (1), as represented in Figure 2 by the large upward arrow.

Generally speaking, rehabilitation begins when a person is off work or has trouble doing a job as a result of illness or injury. The desired outcome is determined in Stage 1:

- a) Return to the current job or the one held at the time of injury or problems associated with illness or injury
- b) Return to a different job with the same employer
- c) Return to a new job with a new employer
- d) Documentation of residual capacity

The choice of desired outcome is usually influenced by the medical prognosis, but also by the social participation prognosis (35), which is a prediction of the person's probable degree of functioning by the end of the rehabilitation process. This prognosis is usually established by consensus among the clinicians involved in the case. In this practice guideline, the term "work participation prognosis" is used. The work participation prognosis must be reviewed continuously throughout the occupational rehabilitation process in order to refine it and reconfirm it in light of emerging data (35; 36). This means that the rehabilitation objectives may change as a result of significant events. The horizontal blue arrows in Figure 2 indicate that the work participation prognosis may also change along the way, thus changing the desired outcome of rehabilitation.

After Stage 1, depending on the person's individual needs and the prognosis, various actions are taken, such as functional restoration or training and work hardening (Stage 2), vocational change (Stage 3), specific training for a new job or adaptation of the current job (workstation, tasks, schedule, etc.) (Stage 4). At the end of the occupational rehabilitation process, the person's individual capacity and the requirements of the target (job held at time of injury or different one) should be compatible. Long-term support measures or follow-up may be provided if necessary to maintain compatibility (Stage 5). In some cases, the process ends with the person obtaining compensation or a disability pension (Stage 6).

Of course, total ability to do the target job and total disability are not the only possible outcomes of rehab. There are many other possibilities, such as the ability to work part time while receiving income-replacement benefits or the ability to do a particular job with reduced productivity while the employer receives financial compensation. The possibilities depend on the support measures available (government, insurance companies) and the flexibility of the employer and the labour market.

Note that Figure 2 does not specify the point when the person returns fully or partly to the workplace, which may occur at any time in the process. In fact, some people will never be off work, in which case the rehab goal is to help them cope with their functional limitations so that they can stay at work.

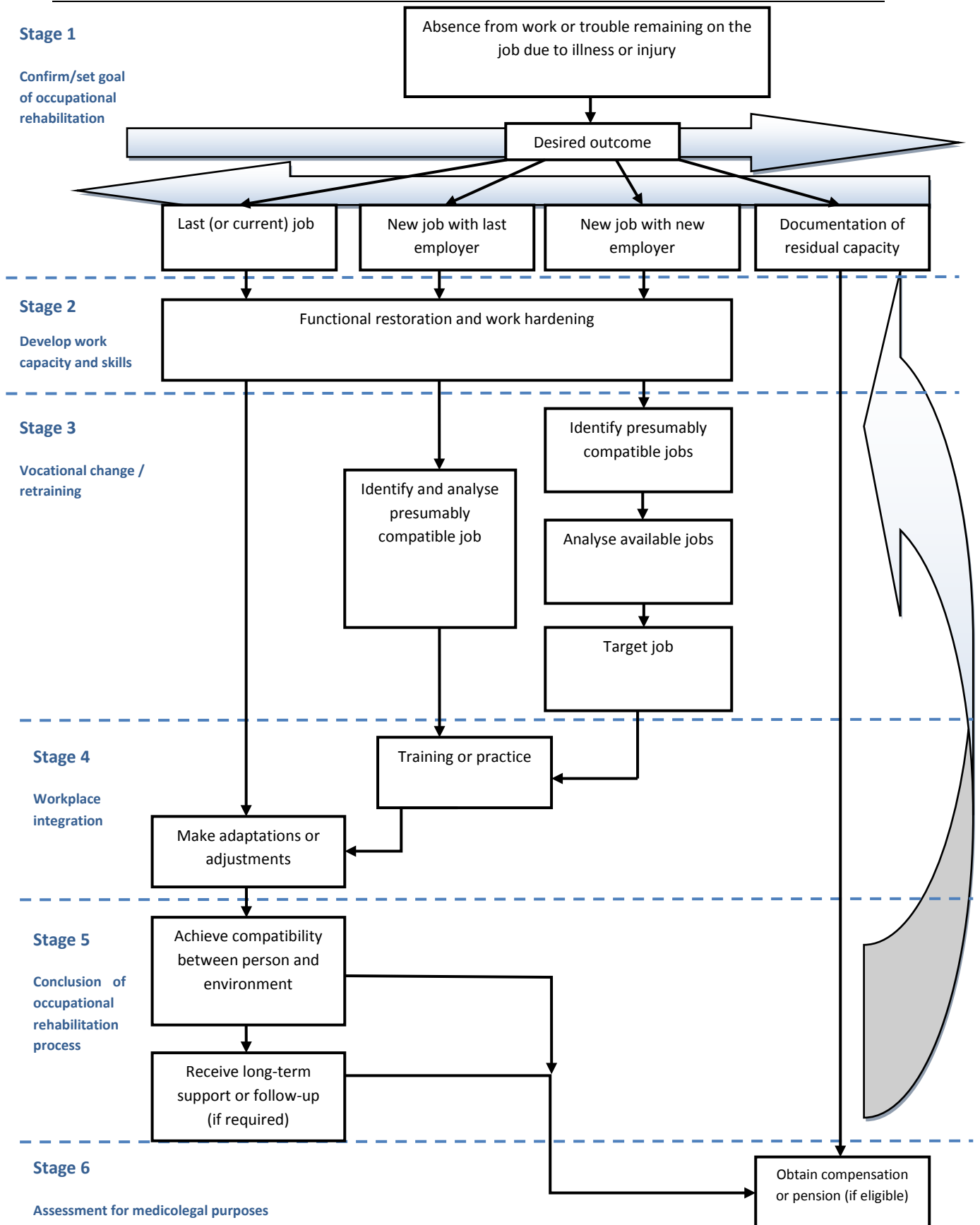


Figure 2 – Occupational rehabilitation process (1; 29)

WFA Objectives

The WFA has a variety of purposes. It is an essential tool in planning rehabilitation interventions targeting a return to work or for adapting a workstation. The results of a WFA may also be used to determine eligibility for income-replacement benefits. Table 1, WFA objectives (p. 13), shows the various possible objectives throughout the occupational rehabilitation process (1; 29; 14; 17; 37; 38; 39; 11; 31; 3).

Types of Work-Related Assessment

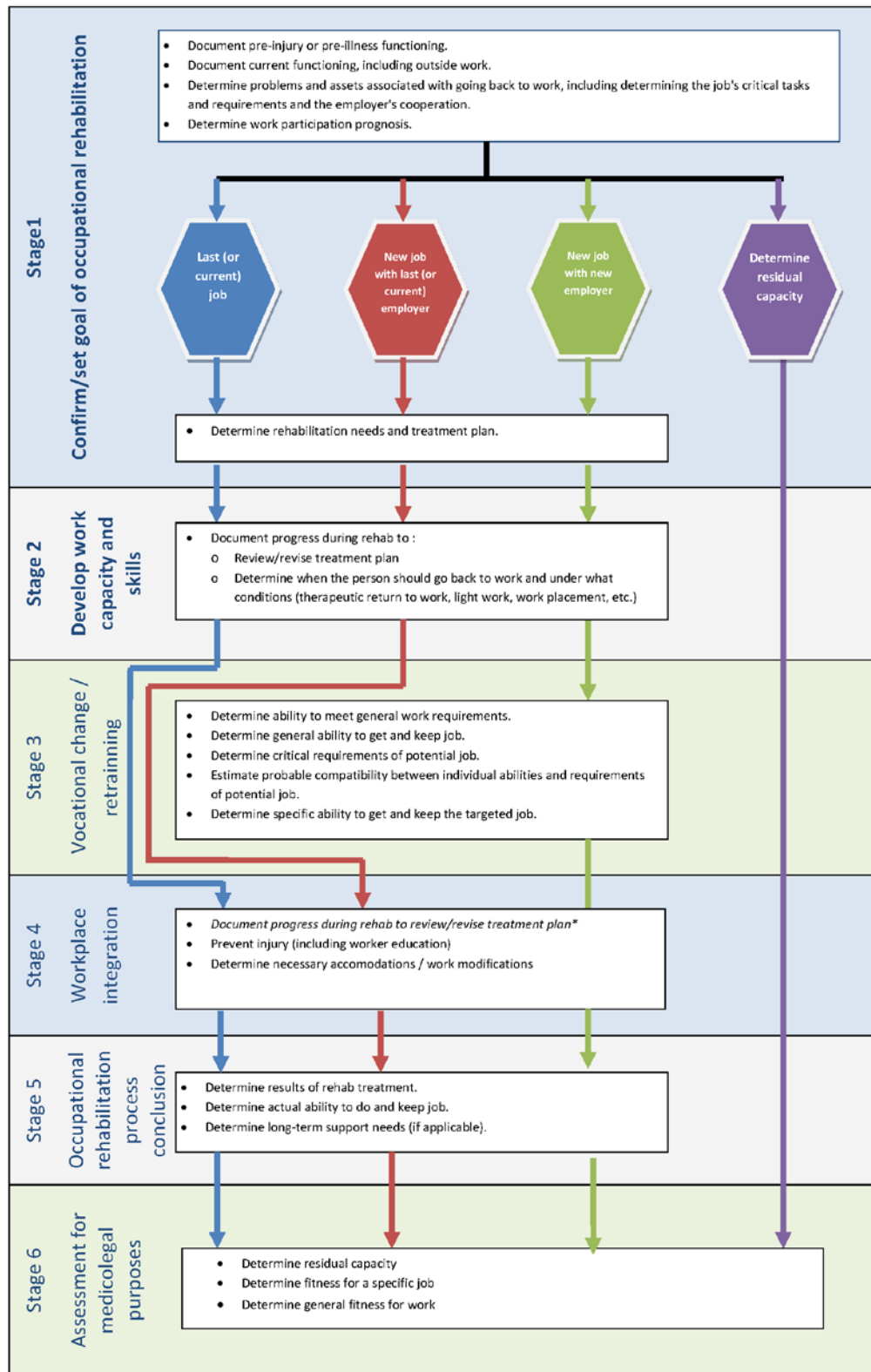
Innes and Straker (40) divide work-related assessments into two broad categories: functional capacity evaluations (FCEs) and workplace assessments (WPAs).

Functional Capacity Evaluations

Functional capacity evaluations generally consist of a battery of tests that measure a worker's maximum capacity in terms of certain physical work requirements, such as load handling; sitting, standing and walking tolerance; manual dexterity; holding constrained positions (e.g., bending, squatting); climbing; and crawling. (17; 9). Sometimes cognitive abilities, such as concentration, organizational ability and problem-solving skills, are also evaluated (41; 42). Evaluations of this kind are usually performed in a clinic and may take anywhere from a few hours to a few days or even a few weeks (42; 40; 2; 17). FCEs involve different data collection methods, including standardized tests (e.g., Valpar work samples) and job task simulations. They can be either job-specific or general (40). Job-specific FCEs measure individual capacity in terms of the particular tasks and requirements of a given job. A positive assessment indicates a presumed compatibility between the individual's capacity and the job requirements (1; 14; 36). A general FCE gauges individual capacity in terms of general occupational requirements (40). Most of the time, these batteries of tests refer to the requirements listed in the U.S. *Dictionary of Occupational Titles* (43), the *Canadian Classification and Dictionary of Occupations* (44) or other similar classification systems (9). The results of the general FCE are therefore relative to those general requirements, such as being able to remain standing and walking, frequently pick up loads of up to about 20 lb from the ground to chest height, perform simple, repetitive tasks or solve simple, concrete problems. A general FCE may be used, for example, to guide the vocational counselling process towards potentially compatible jobs.

Of course, the opinion issued after performing an FCE is based on a **presumed** compatibility between the person and general work tasks. An opinion on actual compatibility cannot be issued until after a WPA has been done (1; 36).

Table 1 – WFA objectives



Workplace Assessments

A workplace assessment (WPA) is done at the worksite and involves the injured worker performing the duties of the actual job. WPA document how the worker interacts with the specific job and environment (40). Direct observations, interviews with stakeholders (e.g., worker, employer) and questionnaires are typical means of gathering data. Such assessments can take anywhere from a couple of hours to several weeks, depending on the objectives. To the best of our knowledge, there is no standardized WPA method. Checklists of parameters to be documented in the workplace are sometimes used, however (41; 45). In addition, some conceptual models or frames of reference can guide the assessment of specific client groups, such as the *Approche idéale de l'évaluation en regard du travail* [ideal approach to work-related assessment] for people who have suffered severe injuries in motor vehicle accidents (1) or *Marge de manœuvre* [margin of manoeuvre] for those with persistent musculoskeletal pain (36). For a WPA, OTs usually triangulate several data sources and collection methods to obtain a true picture of the person's compatibility with the job in question (1; 41). A wide variety of parameters may be assessed, depending on the person's condition, the type of job and the purposes of the assessment.

Innes and Straker (40) include job analysis under workplace assessment. The job analysis is an integral part of the WPA, but it can also be an assessment in itself. In fact, at certain times it may be necessary to document job tasks and requirements, as when examining a potential job for someone who is in the process of vocational counselling (1). The job analysis consists in identifying and describing a worker's job requirements. It can be used to check the information obtained from the client during the interview and from the available job description. It also helps identify the aspects/requirements that may present a problem when the person goes back to work. A job analysis helps the OT establish the work participation prognosis and plan what interventions are needed. It is an essential stage in the occupational rehabilitation process (46; 47).

Note

In this guideline, "workplace assessment" includes a job analysis, but "job analysis" refers solely to that.

A WPA gives very precise, specific results. It answers equally precise questions (48), such as these: How long does it take until the person's work pace slows down significantly due to fatigue? How frequently should task rotation take place? How many centimetres should the work surface be raised? How does the person handle stress when things get busy? What tasks can the person delegate? What conditions must be met for the person to keep the job over the long term? Does the person have sufficient latitude to maintain acceptable productivity while preserving her health and quality of life? If not, what arrangements need to be made? Of course, the results and ensuing recommendations cannot be generalized. Because the results are valid only for a specific work situation, it will be hard to draw any conclusions about the person's work functioning or the appropriateness of the recommendations for other tasks or settings. This also means that when job changes occur, the WFA results must be revalidated.

Innes and Straker (48) place the various types of work-related assessment on a continuum based on the results, going from generalizable (person’s general capacity) to specific (associated with a specific work situation). A general FCE is typically on the generalizable end and a WPA on the specific end of the continuum. A job-specific FCE is somewhere between the two.

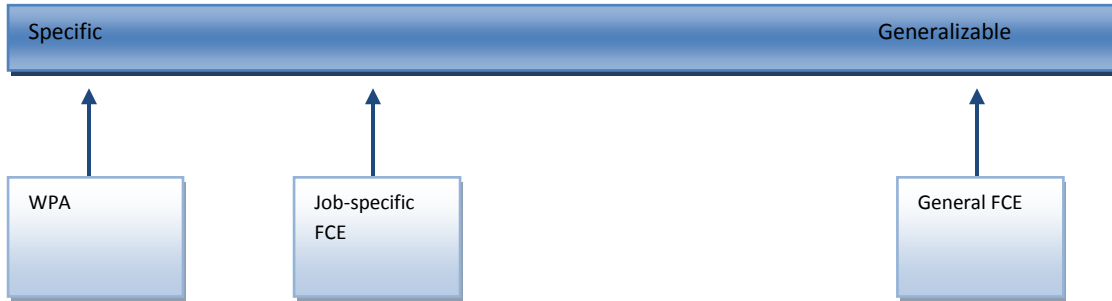


Figure 3 – Continuum showing types of work-related assessment and specificity of results

The next section presents the recommendations for clinical practice and summarizes the supporting research evidence.

Section 2

Recommendations

Recommendations

Innes and Straker (48) have systematically and rigorously identified the attributes of WFA excellence and thus the quality of WFA results. They have defined a set of attributes common to all types of work-related assessments. A good WFA is **safe, accurate, comprehensive, credible, flexible, practical** and **useful**.

Dutil and Vanier (1) add that a WFA should also be started **early** and conducted **continuously** throughout the rehabilitation process. The recommendations in this section are grouped by these attributes. Each of the 17 recommendations is introduced by a summary of the evidence on which it is based and an indication of the strength of the evidence.

A WFA Must Be Safe

Safety is a sine qua non condition of a WFA. Assessment procedures must neither cause injury nor aggravate the person's condition (17). To that end, a physical or medical assessment should be considered before proceeding with a WFA. Special precautions must be taken during the WFA to avoid aggravating an existing organic condition (17; 1; 49), such as rotator cuff tendinitis or a herniated disc.

As a result, if the person, the employer or the insurers ask for an assessment that goes beyond the person's functional limitations, the OT must obtain medical authorization before proceeding. An OT is not qualified to override a doctor's assessment of functional limitations.

Level of research evidence: XI and VII

- 1. The OT must check if any medical restrictions are present and modify or omit tests that do not respect those restrictions or, if necessary, postpone the WFA if the person's condition is not suitable.***

The OT must also be vigilant about the person's safety throughout the assessment and be prepared to modify or cease procedures if necessary..

A WFA Must Be Comprehensive

A good WFA must be comprehensive (48). It must contain all the information required to ensure the decision-making process is sensible and effective. Seven recommendations relate to this attribute.

Whether the WFA is done as part of rehabilitation or for medicolegal purposes, it must examine the various dimensions of functioning and the relevant factors to draw a clear, accurate picture of the person's work functioning. The aspects of functioning and the factors that influence it are described in "Work Functioning Model" (p. 6).

According to Sandqvist and Henriksson (32), the goal of occupational rehabilitation is work participation, and the WFA should therefore focus on that aspect of work functioning. Yet, according to Gibson and Strong (49), work performance is just as much a goal as work participation. Individual capacity is useful for identifying the elements that affect the other two aspects of functioning. The purpose of assessing individual capacity is to identify possible solutions. The identification of potential obstacles to going back to work must therefore be supported by data on the three aspects of functioning and their interactions (32; 49).

Level of research evidence: X and VII

2. The WFA must assess the three dimensions of work functioning:

- **Work participation**
- **Work performance**
- **Individual capacity**

Reminder

The concepts used in the work functioning model are explained on pp. 6-8.

See also glossary, p. 53.

Personal, environmental and time factors may be obstacles or assets when a person goes back to work (32). As well, the same factor may be an asset in one situation but an obstacle in another. The factors must therefore be evaluated in relation to specific situations.

Example – A young African woman suffering from hemiparesis who had only recently moved to Quebec failed several times to return to work, for reasons including her impairment, prejudice against her origins and her command of French, which was passable. She finally managed to find

work in a multicultural daycare, where her origins and her familiarity with African languages and cultures were major assets.

Level of research evidence: VII

3. The WFA must look at the personal, environmental and time factors that influence the person's work functioning.

It is sometimes difficult to determine fitness or lack of fitness for work with certainty. According to Sandqvist and Henriksson (32), work functioning fluctuates on a continuum between social participation and disability. Compatibility between a person and a job may vary over time, depending on circumstances (32; 14; 36). The OT must therefore specify the fluctuating nature of the compatibility between the person and the environment in the WFA analysis and conclusions. This is all the more important because WFA results may be used by people less familiar with work functioning and its changing nature (employers, claims-paying agents, etc.). All users of WFA results should be reminded to be careful when referring to them later (3; 50).

Level of research evidence: X and VII

4. The WFA must consider the dynamic, changing nature of the interaction between the person and her environment. The WFA result is a description of work functioning at a specific point in time and should be regarded as such.

In assessing the various dimensions of work functioning, a top-down approach, that is, from the general to the particular, can capture the complexity of the person-environment interaction. In this approach, the OT begins the assessment by determining with the person which roles and activities she would like to perform and the desired level of participation and performance (e.g., full-time work with productivity comparable to before). Next comes direct observation of the person performing roles or activities in her usual environment. By means of interviews and observations, the OT can directly assess the compatibility between the person and the environment and target the factors that have a significant impact on functioning, whether personal (including individual capacity) or environmental. Next, problematic factors are examined more fully in isolation. Such an approach enables the OT to understand the complex phenomenon of functioning and from there, to target actions that will establish or restore compatibility between the person and the environment (51; 52; 32).

Level of research evidence: XI and VII

- 5. When performing a WFA, the OT should take a top-down approach, that is, begin by assessing work participation and performance and then do a detailed assessment of individual capacity and factors that interfere with functioning.**

Roles and responsibilities outside of work often have an impact on a person's work functioning (1; 32; 53; 36). All those different roles are connected in the person's life and influence one another (1). Problems with roles and responsibilities outside of work may keep the person from going back to work or staying on the job (53). The reverse is also true: problems with work functioning may have repercussions on roles outside of work (e.g., the person is too tired to take part in family activities). That is why the WFA should take into account and document how the person functions in roles outside of work (1; 50; 36; 53).

Level of research evidence: X and VII

- 6. When performing the WFA, the OT must have a broader perspective of an occupation than just the work involved and take into account the person's other roles.**

According to the literature, severely injured workers face many complex disability issues and need to be treated by a team of professionals with expertise in a variety of disciplines (1; 54).

Yet according to occupational therapists who are experts in the field, a case that at first sight seems complex, considering the severity of the impairment, may sometimes involve only a fairly simple disability. In such a case, the WFA may be done by the OT alone. On the other hand, a client with a mild impairment (e.g., non-specific neck pain) may have psychosocial problems that seriously hinder her improvement and return to work. In a case of this kind, the WFA and rehabilitation should be done by an interdisciplinary team.

Level of research evidence: VII and XI

- 7. When the person's disability situation is complex, the WFA must be done by a team of professionals from complementary disciplines.**

To ensure that the WFA is conducted efficiently and rigorously and produces valid results, the team member who conducted the initial interview must provide all the others with any relevant information about the results, identified needs, problems or restrictions prior to proceeding with the assessment (39). The members of a team performing a WFA jointly must also make sure that there is a logic and consistency to the assessment of the various work-related dimensions (1; 54).

According to expert occupational therapists, communication alone is no guarantee of collaboration between team members. Other elements are also necessary: ground rules, a common frame of reference and a common goal. An awareness of the interdependence between professionals is an important factor in successful collaboration.

Level of research evidence: VII, X and XI

- 8. *The team doing the WFA must set up mechanisms to facilitate collaboration between team members: ground rules, a common frame of reference and a common goal.***

Early

A WFA Must Be Started Early

One of keys to the success of occupational rehabilitation is early intervention. That allows the person to continue in her role as a worker and reduces the adverse consequences of being off work or being excluded from work (1; 28). Also, with early intervention, steps can be taken to improve the person's understanding (representation) of her condition before it crystallizes into an erroneous representation that could lead to long-term disability (55; 56).

A WFA started early in the rehabilitation process provides essential information to the team, especially regarding factors influencing the work participation prognosis (38), which helps them to set the right rehab target (35; 1).

Level of research evidence: XI and VII

9. *The WFA must be started early in the rehabilitation process.*

Continuous

A WFA Must Be Continuous

The WFA must be done continuously during rehabilitation (1; 36; 37; 41). The OT must continue to gather data throughout the rehab process. This is necessary so that rehab intervention may be adjusted quickly if the work participation prognosis changes (return to the same job, to a different job, no job, etc.). This continuous data collection throughout the rehab process also deepens the OT's understanding of the client's functioning and factors that influence it. Depending on the issues that come up, the assessment will focus more on certain dimensions and factors than on others. When the WFA is done continuously, the OT can react quickly to address any client-environment compatibility problems that may occur during the rehabilitation process, and the client will be more likely to keep her job over the long term (1; 36; 45).

Level of research evidence: X and VII

10. *The WFA must be done continuously throughout the occupational rehabilitation process.*

A WFA Must Be Useful

This attribute applies to three recommendations. First, the WFA must meet the needs and objectives of the person being evaluated, the referring party and the claims-paying agent (if applicable). According to the users of FCE results surveyed by Strong et al. (50), a good WFA gives them the information they need to manage their case. The report must therefore be detailed and interpret the results to provide not just clinical, but also medicolegal guidance (50). Workers evaluated say that a useful assessment is one that helps them devise a concrete action plan (50). The WFA must therefore be designed so as to combine and satisfy the objectives of the various stakeholders. In cases where the WFA would not meet those expressed needs, the information must be clearly communicated to the person to be evaluated, the referring party and the claims-paying agent (50; 39).

Table 1, WFA objectives (p. 13), can help clarify the various objectives—those of the client, the referring party and the claims-paying agent.

Level of research evidence: X and VII

11. The OT must fully understand the WFA objectives before proceeding.

OTs must choose their assessment methods carefully. Some tests or protocols claim to assess work participation or work performance, although they use tools that actually measure individual capacity (32; 49; 9). OTs must be critical of the validity of the tools they use.

Some authors recommend specific assessment methods for different dimensions of functioning. To assess work participation and performance, it is best to use the workplace and actual tasks of the job (1; 9; 14; 49; 50). If the work performance assessment cannot be done in the workplace, task simulations with as realistic requirements as possible may be used (32; 49). An assessment in a simulated situation is a useful source of information if no workplace is available (1; 49).

Table 2 – Dimensions of work functioning and recommended work-related assessments

Dimensions of functioning	Recommended work-related assessments
Work participation	– Workplace assessment with actual job (1; 32; 49; 50)
Work performance	– Workplace assessment with actual job (9) – Workplace assessment with temporarily modified job or tasks (e.g., therapeutic return to work, work placement) (9) – FCE with job tasks simulation (49; 9)
Individual capacity	– FCE without job tasks simulation (9) – Evaluation tools specific to the ability to be measured (e.g., goniometer to measure range of motion) (49; 9)

Level of research evidence: VII

12. The OT must identify the dimension(s) of work functioning to be assessed in order to choose the type of work-related assessment suitable for the dimension(s) in question.

Useful

Some authors prefer certain assessment methods for certain WFA objectives. The specific objectives of a WFA are listed below for each stage in the occupational rehabilitation process (as described in Figure 2, p. 11) and the recommended methods are given.

A WPA is usually the best way to do a comprehensive evaluation of work functioning. Yet particular situations can influence the decision on whether to do a general or job-specific FCE. The decision tree (p. 29) guides this choice, depending on the situation: whether there is a target job or not, the person is at work or not, the person is doing her regular tasks or not, the regular tasks are available or not, performing regular tasks is safe or not (risk of injury, aggravation). Use of the decision tree is suggested below at certain specific stages.

Confirm/set goal of occupational rehabilitation (Stage 1)

To **document pre-injury or pre-illness functioning**, interviews with the worker and other stakeholders (employer, family) are recommended (1; 41).

But to **document current functioning, including outside of work**, different work-related assessments are indicated, depending on the situation (40). (See decision tree, p. 29.)

If the person's health does not permit a comprehensive WFA, it can be limited to interviews, as for the preceding objective (*document pre-injury functioning*) and a job analysis (40). If possible, tests and measurements of personal factors and individual capacity are added. Observation of performance in personal care and household activities can also be used to determine the person's overall functioning (1; 54).

Last, to **determine problems and assets associated with going back to work, including determining the job's critical tasks and requirements and the employer's cooperation, to determine the work participation prognosis and to determine rehabilitation needs and develop the treatment plan**, all the data gathered on pre-injury and current functioning must be analysed (35; 38; 36; 45). The analysis must take into account the various dimensions of functioning and personal, environmental and time-related factors. When other health-care professionals are involved in the rehabilitation process, the analysis should be done by the whole team, drawing on each member's expertise (1; 31).

Develop work capacity and skills (Stage 2)

To **document progress during rehab and review/revise the treatment plan** and to **determine when the person should go back to work and under what conditions**, the same assessment methods are used as for documenting current functioning (preceding stage), depending on the person's health.

Vocational change / retraining (Stage 3)

To **determine the person's ability to meet general work requirements** so it will be easier for him to look for presumably compatible jobs, a general FCE is suggested (40).

When it comes time to analyse the jobs available to guide the choice of a targeted job by **determining the critical requirements of the potential job** and **estimating probable compatibility between the person and the potential job**, a job-specific FCE or a workplace assessment may be used (1; 40). (See decision tree, p. 29.)

To **determine the person's specific ability to get and keep the targeted job**, a multidisciplinary WFA is required, with the involvement of a professional thoroughly familiar with the labour market and assistance programs available (e.g., career counsellor) (1).

Workplace integration (Stage 4)

When rehab takes place in the workplace, a workplace assessment should be done to **document progress** and **review/revise the treatment plan, determine necessary accommodations / work modifications, prevent injury** and **educate the worker** (adjust workstation, good posture, control effort, etc.) (1; 36).

Conclusion of occupational rehabilitation process (Stage 5)

When winding up the occupational rehabilitation process, a workplace assessment is the only option to **determine the person's actual ability to do the job** (1; 32; 36).

More generally, the **results of rehabilitation treatment can be determined** using a type of work-related assessment appropriate to the person's condition and the opportunities offered by the workplace. (See decision tree, p. 29.)

Assessment for medicolegal purposes (Stage 6)

When a WFA needs to be done for medicolegal purposes, such as to **determine long-term disability, fitness for a job** or **general fitness for work**, there are two options. Once the person has completed rehab, the first option is to analyse all the data gathered during the process. (See "Continuous Evaluation," p. 24.) In the case of a referral where the person has been out of rehab for some time and the data in the patient's file are out of date, of course the same methods used at the outset to clarify the goal of occupational rehabilitation are indicated (40).

Level of research evidence: XI, X and VII

13. The type of work-related assessment should be chosen according to the objective of the WFA.

WPA, job-specific FCE or general FCE? It depends on the situation.

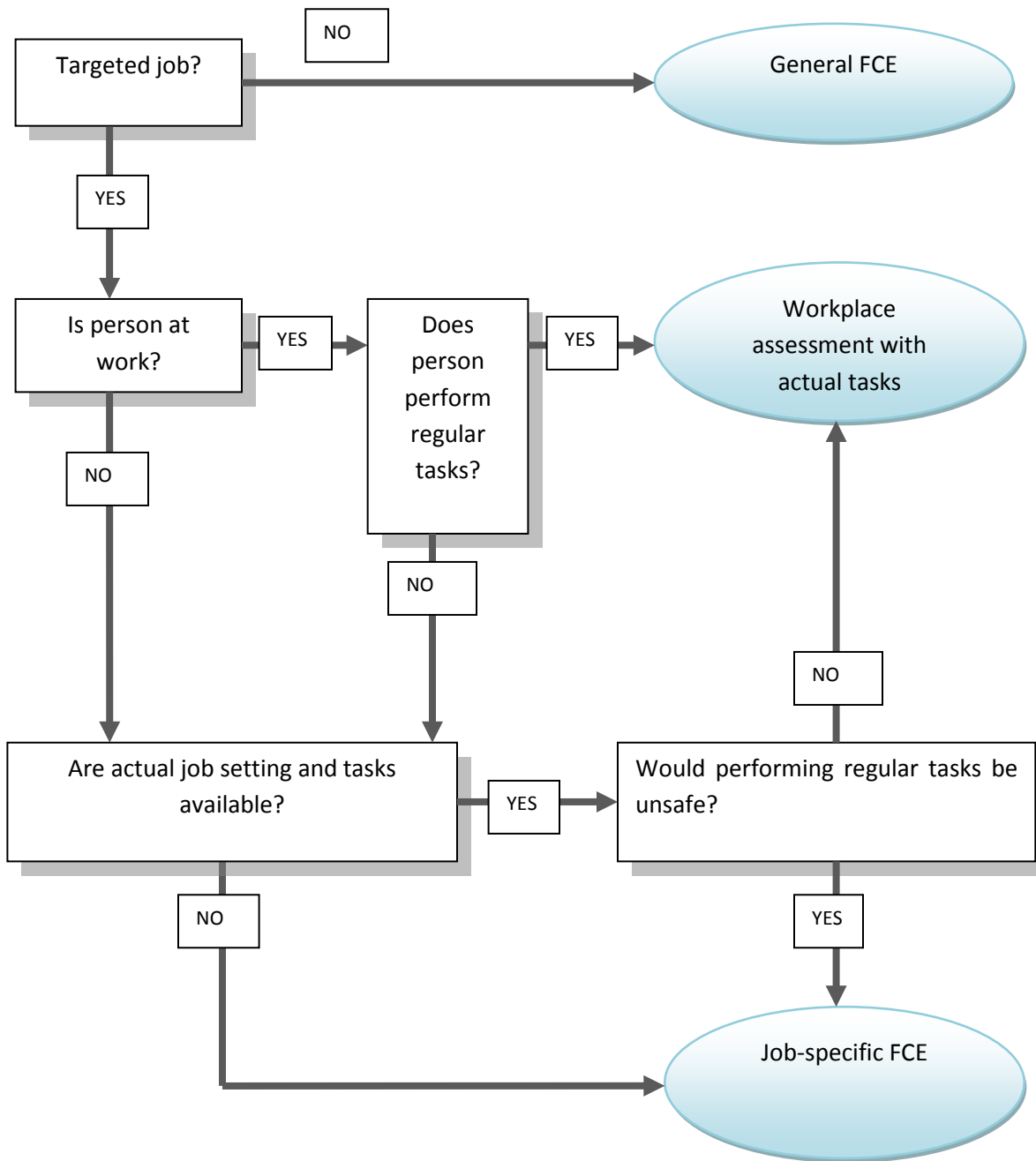


Figure 4 – Decision tree for choosing type of work-related assessment

A WFA Must Be Flexible

Flexibility here refers to the possibility of modifying or adapting the assessment procedure to adequately answer the referring party's specific questions and, of course, meet the needs of the person being evaluated (48; 19). A client-centred approach is essential in occupational therapy (34). A client-centred assessment takes into account the person's interests and changing needs. It gives her decision-making power with regard to the WFA and rehabilitation objectives. It keeps her informed throughout the process and allows her to express her opinions about the services provided (1).

During a WPA, flexibility means tailoring the assessment to the realities of the worker's various tasks/duties and the various workplace requirements and constraints, including the economic situation. In an FCE, flexibility means simulating job-specific tasks as closely as possible, adjusting the protocol to suit the person's needs and in light of data acquired during the process. All modifications should be documented in the report (39).

The WFA must be flexible enough to allow a break if the client's personal or work situation changes, so she can adjust, if necessary, or stabilize her situation (1).

Level of research evidence: XI, X and VII

14. The OT must adapt the WFA to the circumstances of the workplace, the economic situation and the person's own situation.

A WFA Must Be Practical

The costs of a WFA are generally high (15), while health-care system resources are limited and claims-paying agents have economic concerns when they require an evaluation (10; 50). That's why it is important to keep the costs of assessment procedures as reasonable as possible (17). The OT must therefore choose assessment methods that are not only effective, that is, meet the WFA objective, but also efficient, that is, meet the objective using processes that are reasonable in terms of time and effort required.

Level of research evidence: XI, X and VII

15. The OT must aim for efficiency when deciding on the type of work-related assessment and methods to use.

A WFA Must Be Accurate and Credible

WFAs are used to support a therapeutic or medicolegal decision-making process. In a search for therapeutic effectiveness or equity and social justice, the validity of the results is absolutely essential. The OT must therefore ensure that the WFA results are an accurate reflection of reality.

According to Innes and Straker (5), clinicians use several data sources to increase the validity of a WFA. A WPA typically uses a broader range of data-gathering methods and sources than an FCE.

Table 3 shows how often clinicians use different data sources for each type of assessment (5). Three plus signs (+++) indicate that a source is used frequently or constantly to ensure the quality of the WFA and its results. One plus sign (+) indicates that a source is used occasionally or rarely.

Table 3 – Data sources

Sources	Workplace assessment with target job (including job analysis)	FCE with target job	General FCE
Patient's file (5; 41)	+++	+++	+++
Worker (5; 19; 41; 45)	+++	+++	+++
Other health-care professionals (5; 41)	+++	+++	+++
Work environment/tasks (5; 19; 47; 45; 41)	+++	+++	+++
Organizational context (5)	+++	+++	+
Job description (5; 45)	+++	+++	+
Worker's colleagues (5; 41; 45)	+++	+	+
Worker's family (5; 41; 54)	+	+	+

To ensure a good WFA, special attention must also be paid to data collection methods.

Table 4 shows how often clinicians use different data-gathering methods for each type of assessment (5). Three plus signs (+++) indicate that a method is used frequently or constantly to ensure the quality of the WFA and its results. One plus sign (+) indicates that a method is used occasionally or rarely (5).

Table 4 – Data collection methods

Methods	Workplace assessment with target job (including job analysis)	FCE with target job	General FCE
Interview (5; 47; 41; 45)	+++	+++	+++
Direct observation (5; 47; 41)	+++	+++	+++
Standardized measurements (5; 41)	+	+++	+++
Job task simulations (19; 41)	+	+++	+
Photos/videos (5)	+	+	+
Consult documentation (5; 45)	+	+	+
Log (5)	+	+	+
OT tries out worker’s tasks (5)	+	+	+

Level of research evidence: X

16. To perform a WFA, the OT must use several data sources and collection methods.

Innes and Straker (5) have divided the strategies that ensure rigour when gathering data from various sources into two broad groups: quantitative and qualitative.

Quantitative measurements must be taken in a way that limits bias, that is, eliminates anything that might skew the measurements. The following points must be taken into account: (i) test standardization (instructions; equipment used; administration, analysis and interpretation procedures); (ii) qualifications of the test administrator; (iii) validity of the test to measure the factor in question. The OT must therefore opt for **evaluation tools** that have been studied for **reliability and validity**.

Qualitative strategies ensure that the assessment is credible. The following strategies can be used:

- **Describing the data-gathering and analysis process (audit trail)** so that an outsider can check the process and assess the accuracy of the results. The description should note how and where the data were gathered, how the assessment was conducted and how the conclusions and recommendations were arrived at. In practical terms, the OT's report should state where and when he performed the assessment and using what methods. It should also specify if any test protocols were modified and why. The analysis should explain how he reached his conclusions about the person's work functioning.
- Providing **detailed/thick descriptions** (e.g., the context in which work functioning is observed) to enable readers to determine the usefulness of the information for their purposes (e.g., base an administrative decision on the report). In practical terms, the OT should say whether the WFA was done in a clinical setting, in the person's workplace or in another workplace. The workplace should be described in physical, organizational and social terms. Any specific issues (e.g., disputes) should also be mentioned. The OT should describe what he observed of the person's work functioning in detail.
- **Checking** interpretations and conclusions with stakeholders. For example, the results and recommendations should be checked with the worker and employer to make sure they are accurate and comprehensible.
- Performing a **negative case analysis**, which consists in actively seeking evidence that does not support or appears to contradict clinical hypotheses about the person's work functioning. The working hypotheses are then refined in light of new information so that all situations are explained. If there are still some inconsistencies, a plausible explanation is given. In practical terms, this means the OT should test his working hypotheses by gathering data to support them, but also actively seek contradictory data. For example, in a telephone follow-up, a client complains that her back is stiffer after a few hours' work. The data gathered so far suggest that she is not using symptom-controlling strategies in the workplace, although they were effective in a clinical setting. Instead of immediately concluding that this is the case, the OT questions her, goes and does a WPA, observing the worker doing her tasks and asking the employer about the worker's use of strategies to control symptoms. If the data indicate that she is indeed using strategies to control her symptoms, the OT tries to understand why they are less effective now that she is in the workplace.
- **Negotiating recommendations with the stakeholders** to make sure there is a mutual agreement. The necessity and the feasibility of the recommendations are discussed with those involved.
- Conducting a **peer review and debriefing** on the assessment process to ensure that the results are not affected by assessor bias. The OT should ask an impartial colleague to review the assessment process and its results from the standpoint of a neutral observer.
- **Persistent observation and prolonged engagement** in the field (e.g., workplace), which consists in checking information and interpretations in a number of situations. The long,

intensive contact with the worker and/or the workplace is also conducive to the establishment of a working relationship and trust, thus providing access to more information.

- Seeking **data saturation** to make sure of a comprehensive overview of the situation. This means gathering data until there is no new information or the information doesn't add to the understanding of work functioning. In short, the OT has looked at everything.
- Checking **structural coherence**, that is, the plausibility of relations between data. The OT should check that there are no unexplained inconsistencies between the data, their interpretation and the conclusions—in other words, that there is an obvious logical connection between the data, the analysis and the conclusion of the assessment report.
- **Self-reflection** on one's practice, whereby the OT considers whether he needs other knowledge, skills or experiences to improve the quality of the assessment.
- **Triangulation (cross-checking)**, that is, combining the use of several different sources (e.g., worker, employer) or methods (e.g., interviews, observations) to gather data on a given capacity or factor. This mitigates the influence of a given data source or collection method by comparing results between them. The results can then be corroborated to ensure accuracy. For example, to find out the impact of fatigue when a person goes back to work, the OT can triangulate the sources by questioning the person (source no. 1), the employer (source no. 2) and the person's spouse (source no. 3). The OT can also use a combination of interviews and workplace observations (triangulation of methods).

Although there are a number of attributes associated with rigour common to all assessments, their importance varies depending on the type of work-related assessment (48; 5). The choice of strategies to ensure rigour reflects this weighting. The WPA tends to favour quality criteria and assessment strategies that are qualitative in nature. According to the literature, this most probably reflects the sensitivity of work functioning to the complex interactions between the person, tasks and environment. A qualitative approach is better for grasping complex, multidimensional, evolving phenomenon. The general FCE tends to favour quality criteria and assessment strategies that are quantitative in nature. It attempts to objectively quantify and measure individual capacity independent of the influence of the environment. Here again, a job-specific FCE is halfway between the two approaches, seeking both useful and reasonable results for stakeholders (qualitative approach) and objective, reliable results (quantitative approach) (48).

Table 5 shows how often clinicians use different strategies for each type of assessment (5). Three plus signs (+++) indicate that a strategy is used frequently or constantly to ensure the quality of the WFA and its results. One plus sign (+) indicates that a strategy is used occasionally or rarely.

Table 5 – Strategies used to ensure rigorous WFA

Strategies	Workplace assessment (including job analysis)	FCE with target job	General FCE
Reliable, valid evaluation tools (5; 39; 41)	+	+++	+++
Description of data-gathering and analysis process (5)	+++	+++	+++
Detailed descriptions of work functioning and context (5)	+++	+++	+++
Check results and recommendations with worker and employer (5)	+++	+++	+++
Negotiation of recommendations with stakeholders (5)	+++	+++	+++
Negative case analysis (5; 41)	+	+++	+++
Peer review (5; 57)	+	+	+
Persistent observation and prolonged engagement in the field, establishing a working relationship and trust (5; 41)	+++	+++	+++
Data saturation (5)	+	+	+
Structural coherence (5)	+++	+++	+++
Self-reflection (5)	+++	+++	+++
Triangulation (5; 7; 41)	+++	+++	+++

Aside from strategies, the OT's experience and skills are also a major factor in WFA rigour (19). The quality of the interactions between the assessor and the person being assessed also plays a role in the success of the assessment. The assessor must be able to establish a collaborative, trusting relationship and make the person being evaluated feel comfortable so she can perform in a way that reflects her true functioning (50).

Level of research evidence: X and VII

17. The OT must use rigorous strategies to ensure the accuracy of the data gathered, their analysis and the conclusions drawn.

Section 3

Clinical Vignette

Clinical Vignette

This clinical vignette provides a practical illustration of how these recommendations can be applied. The applicable recommendations are given in parentheses throughout.

The stages in the occupational rehabilitation process are indicated in the left margin to show how they related to the different parts of the vignette (see Figure 2, p. 11, for the entire process and Table 1, p. 13, for a reminder of the WFA objectives at each stage). Note that Stage 3, vocational change/retraining, has been left out and some stages, such as capacity development and return to work, overlap.

An explanation of the OT's use of the decision tree (Figure 4, p. 29) to choose the type of work-related assessment to use is provided at the end of the vignette.

Stage 1 – Confirm/set goal of occupational rehabilitation

Chantal is a 32-year-old hairdresser who suffered multiple fractures (legs, pelvis, left arm), damage to the left radial nerve and a mild head injury in a car accident. She is referred to rehab on her discharge from the hospital. The initial assessment is conducted by a multidisciplinary team. Chantal's doctor has recently given her permission to put her full weight on her legs, but her strength, range of movement and endurance are still limited. She experiences various pains, and her right knee and left foot show a slight oedema. She also tires easily and has headaches.

At the initial interview, Chantal states the following expectations: regain her manual dexterity, be able to walk quickly and remain standing for a long time, be able to drive her car, do her daily housework, return to her leisure activities and go back to work as soon as possible (**recommendation 11**).

During the interview, her pre-accident and current functioning are also discussed (**recommendation 5**). Although for the time being, Chantal is in no condition to work, the OT asks about her job, and the two of them explore the probable difficulties and assets involved in going back to work (**recommendations 2, 3, 4 and 9**). Given that at this stage, Chantal's abilities are greatly reduced, a workplace assessment is impossible. The OT therefore opts for a visit to the workplace in order to analyse the job (**recommendations 1, 13, 14**). As Chantal has reported problems with household activities, the OT also goes to her house to assess her functioning when performing household tasks (**recommendation 6**) and identify strategies to facilitate them. The assessment is supplemented by measuring specific capacities and personal factors that hinder functioning, using reliable, valid evaluation tools (**recommendations 3, 5, 12, 13, 16, 17**). Throughout the assessment process, the OT chooses methods that allow him to quickly size up the essential aspects of the clinical picture without overtiring

Stage 1 (cont'd)

Chantal (**recommendations 1 and 15**). The OT is aware that at this stage, his opinion on Chantal's work functioning is only a rough estimate and there is a margin of error. This opinion will go through a validation process later on during rehabilitation, when work tasks will be tried out (**recommendations 9 and 10**).

As data are gradually collected through the interview, job analysis and performance of household activities, the OT assesses her functioning. Throughout the data gathering process, the OT and the other multidisciplinary team members discuss their findings and co-ordinate their assessments (**recommendations 4, 7 and 8**).

The team makes a preliminary work participation prognosis. If the work participation prognosis is favourable to a return to the pre-accident job, then that will be the target of the rehabilitation process. An individualized intervention plan will be developed based on data concerning current functioning and target functioning, as well as the anticipated evolution.¹ The work participation prognosis and intervention plan will be reviewed periodically throughout the occupational rehabilitation process (**recommendations 4, 7 and 8**).

«-- Stage 2 – Develop capacity

Initially, Chantal's functional restoration begins in a clinical setting. Periodic measurements and direct observations of her performing therapeutic activities document her progress and are used to adjust treatment (**recommendations 10, 16 and 17**). Once Chantal has regained sufficient dexterity, job task simulations are incorporated into her therapy. The task simulations can also be used to assess certain elements of work performance (**recommendations 2, 9 and 10**). After a while, Chantal can tolerate standing for two hours, if she takes short breaks. The sensitivity has also returned to her left hand and her dexterity has improved significantly. As her employer is open to a therapeutic return to work (TRW) (37), she will start that while continuing her treatment in a clinical setting. Chantal is a bit anxious about going back to work because there have been changes to the way tasks are organized since she was injured. After her job analysis has been updated and the results of some selected task simulations have been reviewed, tasks compatible with her current abilities are identified (**recommendation 10**).

Stage 4 – Workplace reintegr. «---

On this basis, a TRW plan is drawn up in conjunction with her employer and the SAAQ [Quebec automobile insurance board] rehabilitation counsellor (**recommendation 14**). Through a periodic assessment in the workplace and checking Chantal's functioning off the job, the OT adjusts the progression of tasks and the schedule (**recommendation 6**). With Chantal's involvement, the OT also identifies adjustments to the workstation (e.g., anti-fatigue mat) and ways of working (e.g., taking regular microbreaks) that will improve Chantal's work functioning. Some of these adjustments will be temporary, while others will be adopted permanently (**recommendations 2, 3 and 4**).

1. Intervention related to activities outside of work is planned also, but it is not described in this vignette.

At the end of rehab, an opinion on Chantal’s work functioning in her job as a hairdresser is given in light of data gathered in the workplace in the last few weeks of her therapeutic return to work (**recommendation 13**). The final rehab report will note not just Chantal’s productivity, but also the arrangements and adaptations necessary after her injury to optimize her work functioning (e.g., can work full time, but can no longer work 12 hours in a single day). Her functioning in other roles and responsibilities is also reported, as well as the balance between those roles and work (**recommendation 6**). At the request of the rehabilitation counsellor, the findings on work functioning and functioning in other roles and responsibilities are forwarded to the SAAQ, in the form of the final occupational therapy report, for medicolegal purposes.

Use of decision tree

Twice in the vignette, the OT uses the decision tree to choose the type of work-related assessment to use..

The first time is during Stage 1 of the rehabilitation process. As there is a targeted job (hairdresser), Chantal is off work and it is unsafe for her to do some work tasks, a job-specific FCE is required. In view of Chantal’s very diminished capacity, the OT decides to omit unsafe FCE tests and simulations, but to go ahead with the interview, the workplace visit for a task analysis, and some tests and functional observations.

The second time is during the development of Chantal’s capacity/skills and her reintegration in the workplace. This time, all the required conditions for a WPA are met.

Section 4

***Development of
the Clinical
Practice Guideline***

***Summary of
Recommendations***

Development of the Clinical Practice Guideline

This practice guideline is based on a systematic review of the literature from 1993 to June 2008. The review involved several databases and Web sites and a manual search of the *Revue Québécoise d'Ergothérapie*.

The relevant literature has been classified by the levels of research evidence proposed by Burns and Grove (58) presented in Table 6. Essentially, the levels of research evidence are a hierarchical ranking of the scientific value of research findings. Level I results are considered to provide the strongest evidence. Those at level XI are considered the weakest.

Table 6 – Levels of research evidence (58)

I	Systematic reviews of experimental studies (well-designed randomized clinical trials [RCTs])
II	Meta-analyses of experimental (RCT) and quasi-experimental studies
III	Integrative reviews of experimental (RCT) and quasi-experimental studies
IV	Single experimental study (RCT)
V	Single quasi-experimental study
VI	Meta-analyses of correlational studies
VII	Integrative reviews of correlational and descriptive studies
VIII	Qualitative research, metasynthesis and metasummaries
IX	Single correlational study
X	Single qualitative or descriptive study
XI	Opinions of respected authorities based upon clinical evidence, reports of expert committees

N.B. In this practice guideline, literature reviews, which cover correlational, descriptive and qualitative studies, as well as experts' reports, have been classified as level VII. Papers outlining a frame of reference or conceptual model have also been classified as level VII. See the appendix for the list of references classified by level of research evidence.

After a systematic review of the literature, a first draft of the practice guideline was written, taking into account the levels of research evidence. The draft was assessed in consultation with 24 expert OTs (four focus groups and two individual interviews). The participants gave their opinions on the format and clarity of the practice guideline, the appropriateness of each recommendation and whether the set of recommendations covered the field comprehensively. The interviews were recorded and transcribed, and a qualitative content analysis was performed. Some changes were made to the practice guideline as a result of the consultations.

Summary of Recommendations

<i>Recommendations</i>	<i>Level of research evidence on which recommendation is based</i>
<i>A WFA Must Be Safe</i>	
<p>1. <i>The OT must check if any medical restrictions are present and modify or omit tests that do not respect those restrictions or, if necessary, postpone the WFA if the person's condition is not suitable. The OT must also be vigilant about the person's safety throughout the assessment and be prepared to modify or cease procedures if necessary.</i></p>	<p><i>XI and VII</i></p>
<i>A WFA Must Be Comprehensive</i>	
<p>2. <i>The WFA must assess the three dimensions of work functioning:</i></p> <ul style="list-style-type: none"> • <i>Work participation</i> • <i>Work performance</i> • <i>Individual capacity.</i> 	<p><i>X and VII</i></p>
<p>3. <i>The WFA must look at the personal, environmental and time factors that influence the person's work functioning.</i></p>	<p><i>VII</i></p>
<p>4. <i>The WFA must consider the dynamic, changing nature of the interaction between the person and her environment. The WFA result is a description of work functioning at a specific point in time and should be regarded as such.</i></p>	<p><i>X and VII</i></p>
<p>5. <i>When performing a WFA, the OT should take a top-down approach, that is, begin by assessing work participation and performance and then do a detailed assessment of individual capacity and factors that interfere with functioning.</i></p>	<p><i>XI and VII</i></p>
<p>6. <i>When performing the WFA, the OT must have a broader perspective of an occupation than just the work involved and take into account the person's other roles.</i></p>	<p><i>X and VII</i></p>
<p>7. <i>When the person's disability situation is complex, the WFA must be done by a team of professionals from complementary disciplines.</i></p>	<p><i>VII</i></p>
<p>8. <i>The team doing the WFA must set up mechanisms to facilitate collaboration between team members: ground rules, a common frame of reference and a common goal.</i></p>	<p><i>VII</i></p>

Recommendations	Level of research evidence on which recommendation is based
<i>A WCE Must Be Started Early</i>	
9. <i>The WFA must be started early in the rehabilitation process.</i>	XI and VII
<i>A WCE Must Be Continuous</i>	
10. <i>The WFA must be done continuously throughout the occupational rehabilitation process.</i>	X and VII
<i>A WCE Must Be Useful</i>	
11. <i>The OT must fully understand the WFA objectives before proceeding.</i>	X and VII
12. <i>The OT must identify the dimension(s) of work functioning to be assessed in order to choose the type of work-related assessment suitable for the dimension(s) in question.</i>	VII
13. <i>The type of work-related assessment should be chosen according to the objective of the WFA.</i>	XI, X and VII
<i>A WCE Must Be Flexible</i>	
14. <i>The OT must adapt the WFA to the circumstances of the workplace, the economic situation and the person's own situation.</i>	XI, X and VII
<i>A WCE Must Be Practical</i>	
15. <i>The OT must aim for efficiency when deciding on the type of work-related assessment and methods to use.</i>	XI, X and VII
<i>A WCE Must Be Accurate and Credible</i>	
16. <i>To perform a WFA, the OT must use several data sources and collection methods.</i>	X
17. <i>The OT must use rigorous strategies to ensure the accuracy of the data gathered, their analysis and the conclusions drawn.</i>	X and VII

Glossary

Glossary

Compatibility – Good fit between a person and her job.

Critical requirements – Requirements of a specific job that may present a problem to the person going back to work or staying on the job.

Functional capacity evaluation (FCE) – Assessment usually consisting in a battery of tests that measure a person’s maximum work capacity. Usually done in a clinical setting; may take a few hours, a few days or even a few weeks.

General functional capacity evaluation – Functional capacity evaluation measuring an individual’s capacity in terms of general work requirements, such as standing or walking, handling loads and remaining attentive.

Individual capacity – Capabilities of the person that are required to perform a work activity. One aspect of work functioning.

Job analysis – Documentation of job tasks and requirements. Helps target aspects and requirements that may present a problem in staying on the job or going back to work.

Job-specific functional capacity evaluation – Functional capacity evaluation measuring an individual’s capacity in terms of the particular tasks and requirements of a given job and resulting in a presumption about the compatibility between the individual’s capacities and the job requirements.

Work functioning assessment (WFA) – Assessment of a person’s ability to work.

Work participation – Ability to get and keep a job and thus play a role as a worker in society. One aspect of work functioning.

Work performance – Ability to perform job-related tasks and duties satisfactorily. One aspect of work functioning.

Workplace assessment (WPA) – Assessment that places the person in the situation of performing actual work tasks with a view to documenting how she interacts specifically with the job and work environment.

References

References

1. **Dutil, E., and Vanier, M.** *Évaluation fonctionnelle des capacités de travail: rapport final. Équipe trauma.* n.p.: Société de l'assurance automobile du Québec et Fond de la recherche en santé du Québec, 1998.
2. **Mercier, S.** *L'approche d'évaluation des ergothérapeutes québécois en regard de l'habitude de vie travail.* Montreal: Université de Montréal, 1998.
3. **Strong, S.** Les évaluations de la capacité fonctionnelle: Aspects positifs, aspects négatifs et écueils. *Actualités Ergothérapeutiques.* January/February 2002: 5–9.
4. **Innes, E., and Straker, L.** A clinician's guide to work-related assessment: 3. Administration and interpretation problems. *Work.* 1998c, 11(2): 207–219.
5. **Innes, E., and Straker, L.** Strategies used when conducting work-related assessments. *Work.* 2002b, 19: 149–165.
6. **Innes, E., and Straker, L.** Workplace assessments and functional capacity evaluations: Current beliefs of therapists in Australia. *Work.* 2003a, 20: 225–236.
7. **Lysaght, R.** Job analysis in occupational therapy: Stepping into the complex world of business and industry. *American Journal of Occupational Therapy.* 1997, 51(7): 569–575.
8. **Veloza, C. A.** Work evaluations: Critique of the state of the art of functional assessment of work. *American Journal of Occupational Therapy.* 1993, 47(3): 203–209.
9. **Innes, E., and Straker, L.** A clinician's guide to work-related assessment: 2 – Design problems. *Work.* 1998b, 11(2): 191–206.
10. **Cotton, A., Schonstein, E., and Adams, R.** Use of functional capacity evaluations by rehabilitation providers in NSW. *Work.* 2006, 26(3): 287–295.
11. **King, P. M., Tuckwell, N., and Barrett, T.** A critical review of functional capacity evaluations. *Physical Therapy.* 1998, 78: 8.
12. **Innes, E., and Straker, L.** Reliability of work-related assessments. *Work.* 1999a, 13: 107–124.
13. **Innes, E., and Straker, L.** Validity of work-related assessments. *Work.* 1999b, 13: 125–152.
14. **Pransky, G. S., and Dempsey, P. G.** Practical aspects of functional capacity evaluations. *Journal of Occupational Rehabilitation.* 2004, 19(3): 217–229.
15. **Gross, D. P.** Measurement properties of performance-based assessment of functional capacity. *Journal of Occupational Rehabilitation.* 2004, 14(3): 165–174.

16. **Wind, H., et al.** Assessment of functional capacity of the musculoskeletal system in the context of work, daily living, and sport: A systematic review. *Journal of Occupational Rehabilitation*. 2005, 15(2): 253–272.
17. **Hart, D. L., Isernhagen, S. J., and Matheson, L. N.** Guidelines for functional capacity evaluation of people with medical conditions. *JOSP*. 1993, 18(6): 682–686.
18. **Travis, J.** Cross-disciplinary competency standards for work-related assessments: Communicating the requirements for effective professional practice. *Work*. 2002, 19: 269–280.
19. **Strong, S., et al.** Functional assessment of injured workers: A profile of assessor practices. *Canadian Journal of Occupational Therapy*. February 2004b, 71(1): 13–23.
20. **Davis, D., Goldman, J., and Palma, V. A.** *Handbook on clinical practice guidelines*. Ottawa: Canadian Medical Association, 2007.
21. **Scottish Intercollegiate Guidelines Network (SIGN)**. Web site. [Online] May 1, 2004. [Accessed: August 1, 2007.] <http://www.sign.ac.uk/guidelines/fulltext/50/index.html>.
22. **National Health and Medical Research Council (NHMRC)**. [Online] January 1, 1999. [Accessed: July 29, 2007.] <http://nhmrc.gov.au/publications/synopses/cp30syn.htm>.
23. *Webster's Collegiate Dictionary*, 11th ed. Springfield, MA: Merriam-Webster, 2003.
24. **Dion-Hubert, C., and Therriault, P.-I.** Le travail a-t-il toujours sa place en ergothérapie. *Revue Québécoise d'Ergothérapie*. September 1992, 1(1): 25–31.
25. **Kielhofner, G.** *Model of human occupation: Theory and application*. Baltimore: Lippincott, Williams & Wilkins, 2008.
26. **Law, M., et al.** The person-environment-occupation model: A transactive approach to occupational performance. *Canadian Journal of Occupational Therapy*. 1996, 63(1): 9–23.
27. **Limoges, J., Lemaire, R., and Dodier, F.** *Trouver son travail*. St. Laurent: Fides, 1987.
28. **Baker, N., and Jacobs, K.** The nature of working in the United States: An occupational therapy perspective. *Work*. 2003, 20: 53–61.
29. **Innes, E., and Straker, L.** A clinician's guide to work-related assessment: 1 – Purposes and problems. *Work*. 1998a, 11(2): 183–189.
30. **Serra, C., et al.** Criteria and methods used for the assessment of fitness for work: A systematic review. *Occup Environ Med*. 2007, 64: 304–312.
31. **Lacerte, M., and Wright, G. R.** Return to work determination. *Physical Medicine and Rehabilitation: State of the Art Reviews*. 1992, 6(2): 283–302.

-
32. **Sandqvist, J. L., and Henriksson, C. M.** Work functioning: A conceptual framework. *Work*. 2004, 23: 147–157.
33. **World Health Organisation.** *International Classification of Functioning, Disability and Health*. Geneva: World Health Organisation, 2001.
34. **Canadian Association of Occupational Therapists.** *Enabling occupation: An occupational therapy perspective*. Ottawa: CAOT, 2002.
35. **Lambert, J., et al.** *Le pronostic de participation sociale*. Quebec City: Institut de réadaptation en déficience physique de Québec – Formation réseau, 2006.
36. **Durand, M.-J., et al.** *La marge de manoeuvre de travailleurs pendant et après un programme de retour progressif au travail: Définition et relations avec le retour à l'emploi*. Report R-566. Montreal: Institut de recherche Robert-Sauvé en santé et en sécurité du travail, 2008.
37. **Durand, M.-J., Loisel, P., and Durand, P.** Le Retour Thérapeutique au Travail comme une intervention de réadaptation centralisée dans le milieu de travail: Description et fondements théoriques. *Canadian Journal of Occupational Therapy*. 1998, 65(1): 72–80.
38. **Durand, M.-J., et al.** Helping clinicians in work disability prevention: The Work Disability Diagnosis Interview. *Journal of Occupational Rehabilitation*. 2002, 12(3): 191–204.
39. **Abdel-Moty, E., et al.** Process analysis of functional capacity assessment. *Journal of Back and Musculoskeletal Rehabilitation*. 1996, 6: 223–236.
40. **Innes, E., and Straker, L.** Workplace assessments and functional capacity evaluations: Current practices of therapists in Australia. *Work*. 2002a, (18): 51–66.
41. **Bootes, K., and Chapparo, C. J.** Cognitive and behavioural assessment of people with traumatic brain injury in the work place: Occupational therapists' perceptions. *Work*. 2002, 19: 255–268.
42. **Chappell, I., Higham, J., and McLean, A. M.** An occupational therapy work skills assessment for individuals with head injury. *Canadian Journal of Occupational Therapy*. 2003, 70(3): 163–169.
43. **U.S. Department of Labor.** *Dictionary of Occupational Titles*. Indianapolis: JIST Works, 1991.
44. **Department of Manpower and Immigration.** *Canadian Classification and Dictionary of Occupations*. Ottawa: Information Canada, 1971.
45. **Costa-Black, K., et al.** Interdisciplinary team discussion on work environment issues related to low back disability: A multiple case study. *Work*. 2007, 28: 249–265.

46. **Canelon, M. F.** Job site analysis facilitates work reintegration. *American Journal of Occupational Therapy*. 1995, 49(5): 461–467.
47. **Joss, M.** The importance of job analysis in occupational therapy. *British Journal of Occupational Therapy*. 2007, 70(7): 3001–303.
48. **Innes, E., and Straker, L.** Attributes of excellence in work-related assessments. *Work*. 2003, 20: 63–76.
49. **Gibson, L., and Strong, J.** A conceptual framework of functional capacity evaluation for occupational therapy in work rehabilitation. *Australian Occupational Therapy Journal*. 2003, 50: 64–71.
50. **Strong, S., et al.** Use of functional capacity evaluations in workplaces and the compensation system: A report on workers' and report users' perceptions. *Work*. 2004a, 23(1): 67–77.
51. **Fisher, A. G., and Short-DeGraff, M.** Improving functional assessment in occupational therapy: Recommendations and philosophy for change. *American Journal of Occupational Therapy*. 1993, 47(3): 199–201.
52. **Trombly, C. A.** Theoretical foundations for practice. *Occupational Therapy for Physical Dysfunction*. Baltimore: Williams & Wilkins, 1995.
53. **Angelo, J.** A model for helping persons with physical disabilities return to work. *Occupational Therapy Practice*. 1993, 4(3): 67–73.
54. **Brollier, C., Shepherd, J., and Markley, F.** Transition from school to community living. *American Journal of Occupational Therapy*. 1994, 48, 45, : 346–353.
55. **Vlaeyen, J. W. S., and Linton, S. J.** Fear-avoidance and its consequences in chronic musculoskeletal pain: A state of the art. *Pain*. 2000, 85: 317–332.
56. **Sullivan, M. J. L., et al.** Theoretical perspectives on the relation between catastrophizing and pain. *Clinical Journal of Pain*. 2000, 17: 52–64.
57. **Allen, S., et al.** A framework for systematically improving occupational therapy expert opinions on work capacity. *Australian Occupational Therapy Journal*. 2006, 53: 293–301.
58. **Burns, N., and Grove, S. K.** *The practice of nursing research: Appraisal, synthesis, and generation of evidence*. St. Louis: Saunders Elsevier, 2009.

Appendix

*Classification of
References, by
Level of Research
Evidence*

Appendix – Classification of References, by Levels of Research Evidence

Table 7 – Classification and description of references used in writing the CPG, by level of research evidence

Levels of research evidence	Types of studies	References
I, II, III, IV, V, VI	<ul style="list-style-type: none"> Systematic reviews and meta-analyses of experimental studies Integrative reviews of experimental and quasi-experimental studies Experimental and quasi-experimental studies Meta-analyses of correlational studies 	None
VII	<ul style="list-style-type: none"> Integrative reviews of literature Papers setting out frame of reference or conceptual model 	<p>Abdel-Moty et al.(1996)</p> <p>Baker and Jacob (2003)</p> <p>Dion-Hubert and Therriault (1992)</p> <p>Gross (2004)</p> <p>Innes and Straker (1999a)</p> <p>Innes and Straker (1999a)</p> <p>Innes and Straker (1998a)</p> <p>Innes and Straker (1998b)</p> <p>Innes and Straker (1998b)</p> <p>King et al. (1998)</p> <p>Lysaght (1997)</p> <p>Pransky and Dempsey (2004)</p> <p>Serra et al. (2007)</p> <p>Strong (2002)</p> <p>Sullivan et al. (2006)</p> <p>Vlaeyen and Linton (2000)</p> <p>Velozo (1993)</p> <p>Wind et al. (2005)</p> <p>Dutil and Vanier (1998)</p> <p>Gibson and Strong (2003)</p> <p>Kielhofner (2008)</p> <p>Law et al. (1996)</p> <p>Sandqvist and Henriksson (2004)</p>

VIII	<ul style="list-style-type: none"> Qualitative research metasynthesis and metasummaries 	None		
IX	<ul style="list-style-type: none"> Correlational studies 	None		
X	<ul style="list-style-type: none"> Descriptive longitudinal studies 	None		
		<ul style="list-style-type: none"> Descriptive cross-sectional studies 	Cotton et al. (2006) Innes and Straker (2003) Innes and Straker (2002b) Lysaght and Wright (2005)	
	<ul style="list-style-type: none"> Qualitative studies 	Allen et al. (2006) Bootes and Chapparo (2002) Costa-Black et al. (2007) Durand et al. (2008) Innes and Straker (2003a) Innes and Straker (2002a) Mercier (1998)		
		<ul style="list-style-type: none"> Mixed-method studies (descriptive and qualitative) 	Strong et al. (2004a) Strong et al. (2004b)	
		<ul style="list-style-type: none"> Expert opinions Clinical papers describing clinical interventions and programs 	Angelo (1993) ACE (2002) Brollier et al. (1994) Canelon (1995) Chappell et al. (2003) Durand et al. (1998) Fisher and Short-DeGraft (1993) Hart et al. (1993) Joss (2007) Lacerte and Wright (1992) Lambert et al. (2006) Travis (2002) Trombly (1995)	
			<ul style="list-style-type: none"> Development of tools 	Durand et al (2002)
Unspecified level of research evidence	<ul style="list-style-type: none"> Development of tools 		Durand et al (2002)	