

INTERPRETING THE FUNCTIONAL ABILITIES FORM CRITERIA

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In Ontario, health care providers are required by the WSIB (Workplace Safety & Insurance Board) to complete a "functional abilities form" (FAF) to describe an injured worker's abilities. The employer uses this form to compare the worker's abilities with the demands of the pre-injury or "accommodation" job. In an effort to more objectively and consistently accommodate injured workers, interpretations for each of the criteria on the Ontario Workplace Safety and Insurance Board's FAF were developed by a team of ergonomists, in consultation with medical professionals. This summary can be provided along with the FAF, to the health care provider, and can be used to initiate dialogue between employers, ergonomists and health care providers. It is not intended to be a list of definitive thresholds, but rather a starting point to make the return-to-work process more objective and, ultimately, more successful. The document, and how it was developed, will be presented.

Keywords: Functional abilities, return-to-work, interpretation of restrictions

DÉFINITION DES CRITÈRES ÉNONCÉS DANS LE FORMULAIRE DES CAPACITÉS FONCTIONNELLES

En Ontario, la CSPAAT (Commission de la sécurité professionnelle et de l'assurance contre les accidents de travail) exige que les fournisseurs de soins de santé remplissent le formulaire « Détermination de capacités fonctionnelles » (DCF) pour décrire les capacités fonctionnelles du travailleur blessé ou malade. L'employeur utilise ce formulaire pour comparer les capacités du travailleur par rapport aux exigences de l'emploi avant la blessure ou pour offrir un emploi « approprié ». Afin de répondre aux besoins des accidentés du travail de manière plus objective et en toute logique, chaque critère mentionné dans le formulaire DCF de la CSPAAT de l'Ontario a été défini par une équipe d'ergonomes, en collaboration avec des professionnels de la santé. Ce sommaire peut être transmis avec le formulaire DCF, au fournisseur de soins de santé, et peut servir de tremplin à des discussions entre les employeurs, les ergonomes et les fournisseurs en soin de santé. Il ne s'agit pas d'une liste de critères définitifs, mais plutôt d'un point de départ pour que le retour au travail se fasse de manière plus objective et se solde par une réussite. Nous vous présentons ce document, ainsi que son processus d'élaboration.

Mots clés : capacités fonctionnelles, retour au travail, définition des restrictions

BACKGROUND

Ergonomists are often involved in assisting the return-to-work and “stay-at-work” process. In the course of this process, ergonomists are required to interpret documents from health care providers, or communicate with health care providers in order to quantify employees’ physical capabilities. Issues often arise when the health care provider provides a “restriction” or suggestion that is vague; for example “no repetitive bending”. Employers, particularly those in manufacturing where the jobs are by nature “repetitive”, have difficulty interpreting this restriction. Ergonomists are often asked to intervene. An ergonomist might approach a physician and ask for the clarification of the term “repetitive”. A physician might respond that “an ergonomist should have a better idea of how to define ‘repetitive’”. Indeed, ergonomists are trained to quantify demands, and to evaluate those demands against the capabilities of a user population. The challenge is that ergonomists are trained to evaluate demands against a *healthy* worker population. In fact, we have no way to gauge how far from “healthy” an injured worker is at any given point in his/her rehabilitation. Guidelines that would protect a healthy population from injury may be insufficient to protect an injured worker from aggravating an existing injury.

Our team of ergonomists encountered many inconsistencies between health care providers in the interpretation of various terms used to describe the ability of the worker and the anticipated accommodation. Over the course of several years, we accumulated a long list of interpretations for commonly requested recommendations such as “no heavy lifting” or “no repetitive bending”. In our team meetings, we frequently discussed how best to interpret these accommodations in the absence of dialogue with the health care provider. Our discussions resulted in the development of a list of interpretations, which we used initially as an internal document, to ensure that we were at least consistent with each other in our approach to return-to-work cases.

To better protect injured workers, our interpretations ensured that the thresholds provided here are lower than, or at least as low as, the currently recognized “ergonomic” thresholds that would protect healthy workers from injury. For example, the Kilbom (1994) paper identified that jobs requiring more than 10 wrist movements per minute would be associated with a higher risk, we chose a threshold of 4 movements per minute to characterise “repetitive” wrist bending, which is in line with the RULA (McAtamney and Corlett, 1993) reference. We attempted using a consistent percentage reduction of the currently accepted ergonomics guidelines for all criteria, but agreed amongst our team that this approach could be excessively restrictive for some criteria. For example, we felt comfortable in using a threshold of 4 wrist movements per minute to accommodate an injured worker, even though Kilbom cites a threshold of 10 movements for a healthy worker (a 60% reduction). However, the same Kilbom’s guideline for shoulder movement frequency of 2.5 movements per minute is very commonly exceeded in industry. We felt that using a substantially lower threshold than this might preclude return-to-work more often than necessary. Therefore, our interpretations for shoulder movement are closer to (although still lower than) the Kilbom guideline, but not a 60% reduction.

The interpretations document also clarifies details that are sometimes seen as “common sense”, but were, in our experience, not consistently interpreted by health care providers or employers. For example, we specified that the lifting thresholds provided on the FAF referred to two-handed lifting (and therefore thresholds for one-handed lifting would be lower), and that “lifting” included “lowering” and carrying objects.

INTERPRETATIONS DOCUMENT

Table 1 describes our interpretations for the criteria on the Ontario WSIB's FAF. It also includes references that describe how each interpretation is at least as protective as the currently used ergonomics threshold that would protect a majority of healthy workers. A introductory paragraph regarding the intended use of the document was provided for the reader.

Table 1. Proposed interpretations for WSIB Functional Abilities Form

The following interpretations were derived through a synthesis of many research sources, which are listed at the end of this document. The interpretations **are not** injury risk thresholds. "Ergonomics" guidelines (identified in *italics* and listed as references at the end of this document) that would protect a majority of healthy workers would be **less** protective than the thresholds proposed here. This interpretation attempts to cover most worker/job matches. However, these interpretations may not apply to all situations, and professional judgement should be used. These interpretations are based on the best information that we have available right now (February, 2011), and they may change as new research becomes available.

<i>Functional abilities</i>	
Walking	Forward movement of the body, more than 3 steps (approx. 2.5 metres). Does not include side stepping 1-2 steps. Note: The distance indicated on the FAF is a maximum walking distance "at one time". (An employee who can walk 100 metres at any one time, could walk smaller distances periodically throughout the shift.)
Standing	Bearing weight on the feet, including both standing stationary (feet stationary for more than 6 seconds) and walking. Note: If the duration of standing should be limited to 15, or 15-30 minutes, the employee could resume work in a standing position after sitting for 5 minutes.
Sitting	Resting on a stool or on a chair, where the employee is not required to support his/her full weight on his/her feet. Note: If the duration of sitting should be limited to 15, or 15-30 minutes, the employee could resume work in a sitting position after standing or walking for 5 minutes.
Lifting	Manually grasping an object and moving the object vertically (up or down) without mechanical aids. Object weights should not exceed the threshold provided in the FAF. Notes: "Waist" height would be based on the dimensions of the specific employee. "Waist to shoulder" would include lifting at any height above waist height, including over shoulder height. Unless specifically indicated, the weight interpretation applies to 2-handed lifting, even if the injury is unilateral. Selecting "up to 5 kg" on the FAF means that the employee should not be required to lift more than 2.5 kg in either hand. Lifting also includes carrying, even without vertical displacement of the load.

<i>Functional abilities</i>	
Stair climbing	<p>Ascending or descending stairs or ramps, with the full foot supported. Notes: The number of steps indicated on the FAF is assumed to represent the total number of stairs the employee can ascend or descend at one time. A hand rail may or may not be present. Climbing into a forklift, where a full step is provided, would be considered "stair climbing".</p>
Ladder climbing	<p>Ascending or descending ladders, where the arms are significantly involved. Notes: The number of steps indicated on the FAF is assumed to represent the total number of ladder rungs the employee can climb at one time. Climbing into a forklift, where a toe hold is provided and the operator pulls him/herself up with the arms, would be considered "ladder climbing".</p>
Repetitive bending/twisting	<p>Neck: Bending the neck more than 20° forward, sideways or backward, or twisting the neck more than 45°, at an overall rate of more than 2 neck movements/minute, for more than 15 minutes at a time. <i>Rationale: more protective than McAtamney and Corlett (1993), and Ariens et al. (2002).</i></p> <p>Back: Bending the trunk more than 20° forward, backward or sideways, or twisting the trunk such that the shoulders are out of line with the hips by more than 20°, at an overall rate of more than 2 back movements/minute, for more than 15 minutes at a time. <i>Rationale: more protective than Norman et al. (1998).</i></p> <p>Shoulders: Flexing or abducting the shoulder more than 60° at a rate of more than 2 shoulder movements/minute, <u>or</u> flexing or abducting the shoulder more than 30°, at a rate of more than 2.5 movements/minute, for more than 15 minutes at a time. <i>Rationale: More protective than Kilbom (1994), Bernard (1997), and Colombini (1998).</i></p> <p>Elbows: Flexing/extending the elbow to the end range of motion, or pronating/supinating the forearm by 90°, at an overall rate of more than 4 elbow movements/minute, for more than 15 minutes at a time. <i>Rationale: More protective than McAtamney and Corlett (1993), Kilbom (1994).</i></p> <p>Wrists: Extending, flexing, ulnar deviating, or radial deviating the wrist, at an overall rate of more than 4 wrist movements/minute, for more than 15 minutes at a time. <i>Rationale: More protective than McAtamney and Corlett (1993), and Kilbom (1994).</i></p> <p>Note: Health care providers often add recommendations against "prolonged", "static", or "sustained" use of specific postures. This interpretation would involve maintenance of a given posture for more than 1 minute at a time, or for more than 40% of the work cycle, or for more than 2 hours total per day. <i>Rationale: more protective than McAtamney and Corlett (1993), Ariens (2002), and OHSCO (2008).</i></p>
Work at or above shoulder	<p>Raising the hands above shoulder pivot height (based on the dimensions of the specific employee), regardless of the elbow position. Note: If the injury is unilateral, only the injured arm is restricted.</p>

<i>Functional abilities</i>	
Use of hands: gripping	<p>Gripping includes squeezing an object between the palm and fingers (e.g. squeezing a trigger to operate an air tool), power grips, hook grips, all pinch grips, single finger triggers, and all finger or thumb presses with forces greater than 1 kg.</p> <p>A suitable job would not require the employee to grip or pinch at a rate of more than 4 times/minute, for more than 15 minutes at a time.</p> <p>The job demands must not exceed the following grip force interpretations: 9.0 kg power grip, 2.7 kg chuck pinch, 1.6 kg tip pinch, and 2.3 kg lateral pinch. Does not include handling objects with the weight balanced on the palm of the hand, such as holding a tray or bowl, or "palm pressing", such as pushing open a door.</p> <p><i>Rationale: more protective than Putz-Anderson (1988), Work in Progress (2007), Mathiowetz et al. (1985).</i></p>
Use of hands: pinching	<p>Pinching includes squeezing an object between the thumb and finger(s) (e.g. turning a key), chuck, tip, and lateral grips.</p> <p>A suitable job would not require the employee to pinch at a rate of more than 4 times/minute, for more than 15 minutes at a time.</p> <p>The job demands must not exceed the following force interpretations: 2.7 kg chuck pinch, 1.6 kg tip pinch, and 2.3 kg lateral pinch. Does not include power grips, hook grips, palm presses, or finger presses.</p> <p><i>Rationale: more protective than Putz-Anderson (1988), Work in Progress (2007), Mathiowetz et al. (1985)</i></p>
Pushing/pulling	<p>Limiting forces to within the following interpretations:</p> <ul style="list-style-type: none"> ▪ While walking: 10 kg of initial push/pull force, and 4 kg of sustained push/pull force ▪ While sitting or standing: <ul style="list-style-type: none"> 1-hand pull with 2.3 kg of force (2-handed pull with 4.6 kg) 1-hand push with 4.1 kg of force (2-handed push with 8.1 kg) 1-hand sideways pull toward the body (adduction) with 1.6 kg of force 1-hand sideways push away from the body (abduction) with 1.3 kg of force. <p><i>Rationale: more protective than Snook and Ciriello (1991), and Diffrient (1981).</i></p>

HOW TO USE THE INTERPRETATIONS DOCUMENT

The document will evolve and be updated when new information is available, or constructive feedback is received. Dialogue between ergonomists/workplaces and health care providers will be more successful and efficient if it begins from a common starting place. When we openly asked for a threshold, health care providers were reluctant to provide one. Using this interpretation document, health care providers are more likely to respond that they feel that the thresholds are acceptable, too liberal or too conservative. The document encourages the health care provider to imagine the effect of the job on his/her patient more vividly, and to provide more useful feedback to the employer. It was never intended to act as a definitive list of thresholds for these criteria.

We use this document in two ways during the return-to-work process:

- a) Our clients attach a one page version of this document (without the rationale or references) to the FAF, when the employee is sent to see the health care provider. Ideally, they also send a copy of the physical demands description (PDD) for the pre-injury or return-to-work job as well. (The PDD should include a summary of the

functional job demands, using the same criteria as the FAF.) If the health care provider reviews the document, s/he can complete the FAF knowing how the interpretation will be used. If s/he prefers an alternative interpretation, s/he can note it on the FAF. For example, the health care provider may determine that an employee should be restricted to 1 back movement per minute or less (a more conservative interpretation of “repetitive bending” than ours). Based on the interpretations document, s/he would know that the FAF would allow this frequency even if “no repetitive back bending” was indicated. Therefore, the health care provider could note “Limit back bending to 1 movement per minute” on the FAF.

- b) The interpretations document is also used to clarify restrictions after they are provided. If a health care provider fills out an FAF with “no repetitive shoulder movements” indicated, we would send the relevant interpretation to the clinic, and ask for feedback. The health care provider can then agree with the interpretation, or propose an alternative.

We have posted the document on our web page (at www.taylorordergo.com) and on the website of the Occupational Health & Environmental Section of the Ontario Medical Association. We hope that we will receive feedback from those who use it, to enable us to update it on an annual basis. This presentation is part of our initiative to distribute the document in the hopes of refining the thresholds to make them more meaningful and useful to all parties who are involved in return-to-work.

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