

PRESIDENT'S MESSAGE

Rick Wickstrom, PT, DPT, CPE

OHSIG is moving forward! This is a great time to engage and make a difference in occupational health physical therapy:

- Last month, we launched our task force to update our Current Concepts document on Regulatory Compliance in Occupational Health: Regulatory Compliance with participation of OHSIG members Sean Begley, Drew Snyder, Gwen Simons, Richard Bunch, and Alison Helmetsie.
- We still need a couple more volunteers to help update our Current Concepts document for the Role of the Physical Therapist in Occupational Health. We plan to launch this task force this fall.
- Our mentorship program is proceeding under Caroline Furtak's leadership. Carolyn will continue to nurture this program as the Chair of our new Membership Committee.
- Our Work Rehab CPG Writing Team led by Lorena Payne is continuing to finalize this guideline. We are thrilled that Lorena will continue her outreach initiatives on behalf of the OHSIG as the Chair of our new Practice Committee.
- We are excited to welcome Cory Blickenstaff and Marc Campo to our leadership team. Cory is the owner of Forward Motion Physical Therapy, which is a private practice based in Vancouver, Washington. He will be serving as our AOPT OHSIG Communications Chair. Marc is Professor of Physical Therapy at Mercy College in Dobbs Ferry, New York. He will be serving as our AOPT OHSIG Research Vice Chair.
- Our Vice President, Brian Murphy, has re-scheduled a free webinar presentation for OHSIG members on "The Age of Exoskeletons" by Matthew Marino of Briotix Health on September 11th at Noon CST. This will be an inspiring and cutting-edge presentation!
- I am looking forward to participating in the AOPT Strategic Planning Meeting this October.

If you have any ideas or suggestions for us to consider, please reach out to me or any of our officers listed on the OHSIG web page: <https://www.orthopt.org/content/special-interest-groups/occupational-health>.

Finally, in this issue of *Orthopaedic Physical Therapy Practice*, the OHSIG is pleased to introduce an article that offers a fresh perspective about methods that distinguish anatomic impairment from occupational disability. It was a pleasure collaborating with Steve Allison to review the current status of diagnosis-based impairment rating and propose a simple model to quantify the severity of occupational disability after an injury or illness. Our proposed framework for matching validated worker abilities to job demands is relevant to a physical therapist's fundamental role of examining and alleviating participation barriers that limit work or other lifestyle activities. Enjoy!

Differentiating Between Anatomic Impairment and Occupational Disability

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The relationship between impairment and disability has long been a confusing and controversial topic. The International Classification of Functioning Disability and Health (ICF) defines impairment as a loss or abnormality in body structure or physiologic function; whereas disability is an umbrella term that is used to describe the negative aspects of impairments, activity limitations, and participation restrictions that result from having a health condition.¹

AMA GUIDES TO EVALUATE PERMANENT IMPAIRMENT

The *AMA Guides to the Evaluation of Permanent Impairment* ("Guides"), is an established method for rating the severity of impairment in the United States, Canada, Australia, New Zealand, Hong Kong, Korea, The Netherlands, and South Africa. The first edition of *A Guide to the Evaluation of Permanent Impairment of the Extremities and Back* was published in 1958.² An impairment rating is typically done after an injured worker reaches a functional plateau in recovery (maximum medical improvement), in order to justify an award of disability benefits or other financial compensation.³

The most recent 6th edition of the Guides was introduced in 2007.³ This revision was intended to address criticisms of previous versions by Spieler et al⁴ that:

- the Guides fail to provide a comprehensive, valid, reliable, and evidence-based rating system,
- impairment ratings did not reflect perceived and actual loss of function, and
- ratings were more representative of "legal fiction than medical reality."

To address the criticism of inadequate attention to functional assessment, the 6th edition of the Guides incorporates use of standardized, orthopedic functional questionnaires to "subjectively" assess an individual's perceptions about of pain and function during activities of daily living (ADLs). This edition also adopted the ICF conceptual framework for disablement by applying a functional classification to impairment grids that is similar to the 0-4 ICF scale for capacity and performance qualifiers.

Unfortunately, the controversy about using impairment ratings as a basis for financial compensation after an injury has only escalated since release of *AMA Guides to the Evaluation of Permanent Impairment, 6th edition* in 2007. Numerous court challenges, legislative bills, Congressional hearings, debates, and publications have questioned whether the 6th edition of the Guides provides a more

reliable or valid rating of severity for given health conditions in workers' compensation systems.⁵

States have been slow to adopt the 6th edition of the Guides, citing complaints that the 6th edition is overly complex, lacks evidence-based methods, and rarely yields consistent ratings.⁶ Since the Guides were first introduced, there has been limited research to assess for reliability⁷⁻⁹ or validity.^{7,10-11} Nitschke and colleagues⁸ found poor intra- and interrater reliability for the AMA dual inclinometer range of motion method that is used to estimate impairment of subjects with chronic low back pain. Only two research studies have investigated the 5th edition (2001) and 6th edition (2007) of the Guides. Forst et al⁹ compared impairment ratings for back injury cases and reported that the 6th edition produced lower impairment ratings and lower reliability correlations than the 5th edition. Busse et al¹² also found a substantial reduction in impairment ratings for the 6th edition, when compared to the 5th edition of the Guides.

AMA GUIDES WERE NOT INTENDED TO MEASURE OCCUPATIONAL DISABILITY

When an impairment results in work participation loss, this is referred to as occupational disability. Authors of the 6th edition of the Guides state that the Guides are not designed to be used as a direct estimate of work participation restrictions that relate to a specific job or occupation.³ They define *impairment rating* as “consensus-derived percentage of loss of activity reflecting severity for a given health condition, and the degree of associated limitations in ADLs.” Within this context, ADLs refer to basic self-care activities such as feeding, bathing, personal hygiene, and dressing. The Guides further note that most physicians are not trained in assessing the full array of human functional activities and participations that are required for comprehensive disability determinations.³

FUNCTIONAL CAPACITY EVALUATION

A content-valid functional capacity evaluation (FCE) may be used to provide a more valid measure of occupational disability. A best practices guideline for FCEs was published and adopted by the American Academy of Orthopaedic Physical Therapy of the American Physical Therapy Association on April 30, 2018.¹³ The FCE guideline provides recommendations relative to the proper design, administration, and interpretation of FCEs and qualification standards for FCE examiners. This defines an FCE as a comprehensive performance-based medical assessment of an individual's physical and/or cognitive abilities to safely participate in work and other major life activities.

A CONCEPTUAL FRAMEWORK FOR MEASURING OCCUPATIONAL DISABILITY

To assess a worker's occupational physical disability, the worker's residual physical abilities may be compared to the physical demands of the job or occupation performed at the time of injury. This approach addresses a major criticism that an anatomical impairment rating derived with the Guides is not appropriate to quantify severity of loss in work participation after an injury or illness.

Different methods and job-match factors have been used by FCE examiners to quantify the severity of occupational disability. Job matching is preferred in the workers' compensation system to facilitate job accommodation and rehabilitation programs, whereas occupation matching is preferred to justify eligibility for Social

Security or long-term disability benefits. Occupation matching is complex and controversial because only limited data exists about the physical demands and environmental conditions for occupations in the O*NET system that replaced the Dictionary of Occupational Titles (DOT) after its last update in 1991.

The Bureau of Labor Statistics (BLS) is conducting an Occupational Requirements Survey (ORS) to gather current data regarding physical demands; environmental conditions; education, training, and experience; as well as cognitive and mental requirements for jobs in the U.S. economy. This survey is conducted under an agreement with Social Security Administration to meet the needs for decisions in their disability programs. BLS has developed a data collection manual for ORS survey methods used to assess occupational requirements of jobs in order to populate a new Occupational Information System (OIS) to replace the DOT.¹⁴

Applying Worker-Job Match Factors to Assess Occupational Disability

To illustrate how permanent “anatomic” impairment as currently determined by the Guides relates to an injured worker's occupational disability for specific jobs, let's apply the job-match factors recommended for the ORS to the scenario of the injured worker with a full-thickness rotator cuff tear with loss of motion and chronic pain in their dominant right upper extremity.

According to the Guides 6th edition (Table 15-5, page 403), the upper extremity impairment based on this diagnosis could range from 1% to 13%, depending on how the examiner applies adjustment factors for functional history, physical examination, and clinical tests to identify the appropriate grade for an impairment class.³ For the purpose of this example, let's assume the injured worker has a 10% right upper extremity impairment as a result of their rotator cuff injury with a mild loss of motion and chronic pain. Using Table 1-11, page 420, the 10% rating of impairment for the right upper extremity is converted to a 6% impairment of the whole person. When multiple diagnosis-based impairments exist, the examiner uses Appendix A Combined Values Chart on pages 604-606 to combine the results.

Calculating a 10% impairment of the right upper extremity or 6% impairment of the whole person does not determine whether the injured worker has an occupational disability that interferes with the ability to safely perform their specific job or occupation. This consensus-derived estimate of anatomical impairment was intended by the authors of the AMA Guides to reflect the severity of associated limitations in non-occupational activities of daily living (ADLs).² The physical demands of the job must be compared to the worker's functional abilities to analyze the severity of occupational disability after injury or illness. The percentage of occupational disability may be determined by calculating the number of unmatched physical factors as a percentage of all compared factors. This method of analysis yields different results for matching with a low physical demand occupation such as an office clerk job, compared to a medium demand occupation such as a construction electrician. In Table 1, the following equation was used to quantify occupational physical disability:

$$\text{Physical Disability \%} = \text{Number of unmatched physical factors (NOs)} / \text{Total factors} * 50\%$$

A 50% multiplier was applied in this proposed conceptual framework because the scenario presented in Table 1 only considered physical job match factors that relate to work participation

Table 1. Example of Worker-Job Match Analysis to Quantify Occupational Disability

Lift/Carry Factors	Worker Ability	Office Clerk	Match?	Electrician	Match?
Constant Lift/Carry	10 lb	0 lb	Yes	5 lb	NO
Frequent Lift/Carry	20 lb	1 lb	Yes	25 lb	NO
Occasional Lift/Carry	30 lb	10 lb	Yes	50 lb	NO
Work Posture Factors	Worker Ability	Office Clerk	Match?	Electrician	Match?
Climb Ladders	Occasional	Not present	Yes	Frequent	NO
Finger Manipulation	Constant	Frequent	Yes	Constant	Yes
Keyboarding	Constant	Constant	Yes	Not Present	Yes
Low Work Postures	Occasional	Not present	Yes	Frequent	NO
Reach Overhead	Occasional	Not present	Yes	Frequent	NO
Sitting	Constant	Constant	Yes	Occasional	Yes
Standing/Walking	Constant	Occasional	Yes	Constant	Yes
Occupational Physical Disability		0 NOs/10 * 50% = 0%		5 NOs/10 * 50% = 25%	

loss. A similar approach could be used to quantify occupational cognitive disability, when the worker suffers work participation loss due to medical conditions such as a traumatic brain injury. The worker's cognitive abilities could be matched to the cognitive demands of the job/occupation to quantify the functional impairment due to cognitive factors such as decision-making/reasoning, people interactions, spoken communication, and written communication.

As illustrated in Table 1, the injured worker has a 0% occupational disability as it relates to the physical demands for the *Office Clerk* job/occupation. In this example, the injured worker has retained the functional abilities to safely perform all required physical demands and therefore should experience no loss in wages as a result of the injury. In contrast, the injured worker has a 25% occupational disability as it relates to the physical demands for the *Electrician* job/occupation, because of being unable to safely meet 5 out of 10 physical demands.

RECOMMENDATIONS

There is clearly a significant difference in the severity of the injured worker's occupational disability when job loss occurs, even though the permanent right upper extremity "anatomic" impairment as derived by the Guides methodology remained static at 10% regardless of the type of work the injured worker performed.

The proposed job/occupation match method would use the results from a best practices FCE to provide a valid framework and standardized methodology for assessing the severity of an injured worker's occupational disability. This same function-based approach can also be used to assess an individual's loss in participation in common activities of daily living outside of work that is referred to as lifestyle disability.

One way to integrate with a future version of the AMA Guides would be to determine a whole person impairment based on a diagnosis-based method (eliminating the ROM method since functional measures obtained during an FCE will capture functional loss due to ROM loss) and combine (using the combined values chart) the diagnosis-based impairment value with a function-based impairment value based on a functional job match to quantify occupational disability, lifestyle disability, or some combination thereof.

For the example presented, the injured worker with a 10% diagnosis-based upper extremity impairment and 6% whole person impairment for full thickness rotator cuff tear would have a 25% function-based impairment for employment as an Electrician, based on consideration of occupational disability. The 6% diagnosis-based anatomical impairment of the whole person could be combined with the 25% functional impairment due to occupational physical disability to produce a total whole person impairment of 30% using the Appendix A Combined Values Chart.

If this same individual had 0% function-based impairment for employment as an Office Clerk, his or her impairment would be limited to the diagnosis-based method which in this example was 10% upper extremity or 6% whole person. This same methodology could be used to quantify ADLs disability outside of work as we have discussed before based on the results of an FCE by a qualified FCE examiner. This approach could be used to validate AMA methodology for anatomical impairment ratings, as well as to combine physical and cognitive participation losses in work and home/leisure activities.

In conclusion, it is evident that the AMA Guides methodology in its current form does not provide a fair or valid framework that reflects the severity of an injured worker's occupational disability. Therefore, diagnosis-based, anatomic impairment ratings should not be used in workers' compensation systems as the sole basis for awarding disability benefits or financial compensation to injured workers. Hopefully, future editions of the AMA Guides will incorporate an objective and function-based impairment methodology that will more accurately reflect the severity of an individual's functional impairments as they relate to work and other common activities of daily living.

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CSM	2019	2020	2021
	National Student Conclave: October 31- November 2, 2019 Albuquerque, NM	CSM: February 12-15, 2020 Denver, CO AOM: April 3-4, 2020 Minneapolis, MN	CSM: February 24-27, 2021 Orlando, FL

Attention AOPT Members

The 2019 Election taking place this November will be the last time hard-copy, USPS-mailed ballots will be sent to those individuals without an email address in their membership record.

Following this upcoming election and going forward, all voting members will be required to vote via our online voting process.

Please plan to cast your votes in November!




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