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PHYSICIAN SPOTLIGHT:
CHRISTOPHER P. ASHLEY, MD

APPEALS BOARD WEIGHS IN ON PERM TOTAL

IMPAIRMENTS RESULTING FROM AMPUTATION

To Promote Medicolegal Scholarship for the Tennessee Workers' Compensation Community

AdMIRable Review

In This Issue of AdMIRable Review

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MIR PHYSICIAN SPOTLIGHT
CHRISTOPHER P. ASHLEY, MD

"The benefit of the MIR Program is to give the patient a physician who is willing to spend the extra time to become proficient in the Guides and the evaluation of impairments," says physiatrist Dr. Christopher Ashley, of Nashville. "Plus, opinions given in the reviews are independent of the work comp system and the patients, or their counsel."

A member of the Medical Impairment Rating Registry since the program began in 2005, Dr. Ashley has perfected the art and science of the MIR Report. His work is reliably accurate, impartial, and well supported. A favorite among employees and employers, his background and board certification in Physical and Rehabilitation give him the breadth and depth needed to address a wide range of occupational injuries. He is also certified through the American Board of Independent Medical Examiners.

Dr. Ashley is a physician at Tennessee Orthopaedic Alliance (TOA), where he focuses on the nonsurgical treatment of musculoskeletal disorders while offering a variety of options that include minimally invasive spine procedures, therapeutic exercise, orthotics, and bracing. He is also a member of the American Medical Association, the American Academy of Physical Medicine and Rehabilitation, the Physiatric Association of Spine, Sports, and Occupational Rehabilitation, the American Association of Neuromuscular and Electrodiagnostic Medicine, and the Association of Academic Physiatrists.

Dr. Ashley was born in Charlotte, Tennessee, one of six children of a farming family that raised tobacco, pigs, chickens, cows, horses, turkeys, and rabbits. His father died when he was twelve years old, and his mother, never having a formal "job" other than farm work, took great pains to see both her farm and children succeed, instilling in them self-reliance, self-confidence, and a strong work ethic. To make an already challenging life even more difficult, their house "burned to the ground" when Dr. Ashley was in high school.

"I feel that these experiences were a great part of molding me into someone who did not fear the challenges of becoming a physician."

CHRISTOPHER P. ASHLEY, MD

Rising from the ashes, Dr. Ashley paid his own way through college and medical school, and is now, with a medical career spanning two decades, a successful physiatrist for TOA. He is primarily a musculoskeletal physician, and is particularly interested in electromyography and nerve conduction studies, acute and chronic musculoskeletal pain, interventional pain management, and medical uses of botulinum, type A, for the treatment of spasticity.

"My focus is to always try to give the patient multiple treatment options to try to help them maintain their optimal function. As a physician, I have had multiple orthopaedic injuries myself, including rotator cuff tears, foot fractures, ACL knee injury, nerve injuries and lower back problems, and I think this helps me relate and be empathetic to my patients."

Dr. Ashley graduated from Austin Peay State University with highest distinctions, earning undergraduate degrees in Chemistry, Biology, and Radiological Technology, plus a scholarship to attend a year-long Nuclear Medicine Technology Program at Vanderbilt University Medical Center. He then went on to attend medical school at Meharry, in Nashville, and interned and at the University of Arkansas for the Medical Sciences. After completing a fellowship for Physical Medicine and Rehabilitation, Dr. Ashley returned to Vanderbilt for a residency in Orthopaedic Surgery.

Dr. Ashley and his wife of 28 years, Toni, have five children: Zackary, age 25; Haley, age 23; Noah, age 20; Eli, age 17, and Isabella, age 13. As a family,

(Continued on page 730)

AMPUTATION IMPAIRMENTS *AMA Guides*, Sixth Edition

Jay Blaisdell, MA, and James B. Talmage, MD

As of January 1, 2015, in addition to the requirement to report a work-related fatality, all employers must report any work-related amputation, hospitalization, or loss of eye—a.k.a. "severe injury"—to the federal Occupational Safety and Health Administration (OSHA), or its state-run equivalent. Bearing this in mind, of the 10,388 severe incidents that were reported in 2015 from the 28 states directly administered by OSHA (the other 22 states, including Tennessee, administer their own OSHA-approved state programs) more than 2,600 incidents were amputations. Of these, approximately 60% were in the manufacturing industry, and 10% were in construction, with the balance spread over several industries such as forestry, fishing, wholesale and retail trade, waste management, transportation, warehousing, and oil and gas extraction. Within the manufacturing industry, Tyson Foods, a poultry processing company, and JBS/Pilgrim's pride, a meat processing plant, had the fourth and sixth highest number of severe incidents respectively and the highest proportions of workers affected.

A policy brief from the National Employment Law Project estimates that "a staggering 27 workers a day" suffered severe injuries from January 2015 through September 2016 in states directly administered by OSHA. Accounting for state-administered safety programs as well as unreported incidents, it is likely that nearly 100 workers per day are severely injured in the United States, with more than a fourth of those incidents being amputations (Michaels, 2017). Historically, amputations of the fingers account for approximately 90% of reported amputation claims, followed distantly by toes at 3% and the entire hand at 1.5%. "Workers being caught in, under, or between machines, or striking against machines" accounted for over half of reported amputations (McCaffrey, 1977, p. 37).

SCOPE

Upper extremity amputations are rated in section 15.6 (page 454), and amputations of the thumb or fingers are rated in 15.6a (page 454), using Figures 15-11 and 15-12 (page 458) or Table 15-28 (page 457). Amputations through the hand metacarpals or through the wrist are rated in section 15.6b (page 455), using Table 15-27 (page 456). Amputations of the forearm and/or shoulder are rated in section 15.6c (page 455), using Figure 15-9 (page 456). Lower extremity impairment ratings are rated in section 16.6 (page 542), using Table 16-16. Amputation impairment may be combined with proximal diagnosed-based impairments as well as proximal range of motion impairments (Rondinelli, 2009). The MIR Physician should not rate "for loss of sensation in the amputated part" should an amputation be accompanied by nerve injury (Roninelli, 2009, p.454). Unstated but similarly, do not rate for motor nerve injury involving muscles that have been amputated.

DEFINITIONS

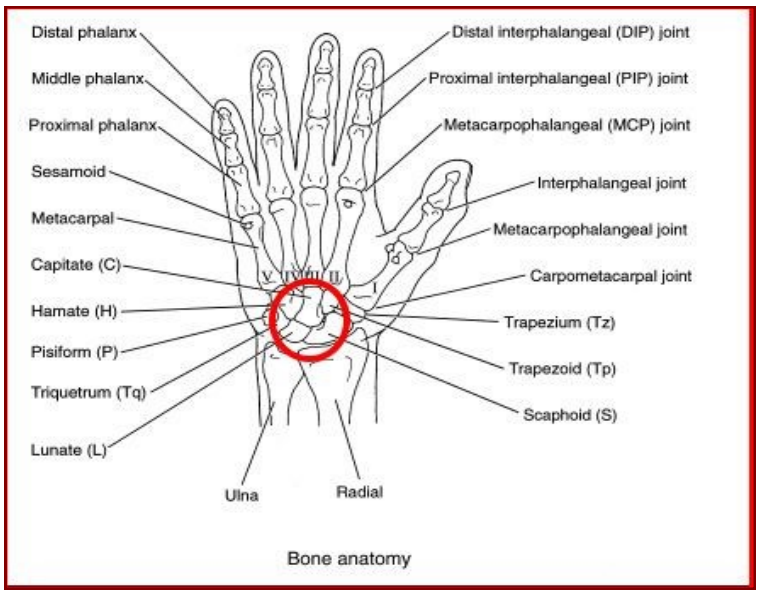
Combined Values Vs. Added Values: To reflect whole person impairment, percentage values from different body parts and organ systems are usually combined using Appendix A, "Combined Values Chart," on page 604, but are sometimes added using simple arithmetic. To combine values using the chart, the MIR Physician locates "the larger of the values on the side of the chart" and the smaller value at the base of the chart. The intersection of the two values within the chart is the combined value (Rondinelli, 2009).

Diagnosis-Based Impairment (DBI) Method: A principle impairment-rating approach within the *AMA Guides* whereby an impairment class, usually representing a range of impairment values within a cell of a grid, is selected through diagnosis and "specific criteria," otherwise known as key factors. The default impairment value within the impairment class may then be modified using non-key factors, also called grade modifiers, such as functional history (FH), physical examination (PE), and clinical studies (CS) (Rondinelli, 2009).

OVERVIEW

Impairment arising from amputations are assigned according to the diagnosis-based method utilizing the appropriate table (pages 456-460) for upper extremity amputations and Table 16-16 for lower extremity amputations (page 542). Impairment values are based on the level of the amputation. Proximal problems of the affected limb may increase the overall rating through the application of grade modifiers: functional history, physical examination, and clinical studies (Rondinelli, 2009). Additionally, amputations may be combined with either other proximal DBIs (in the retained portion of the limb) or range of motion impairment values (in the retained portion of the limb) with the caveat that each digit of the same hand is rated separately and its impairment value is added at the level of the hand, not combined, with other digit impairments of the same hand (Rondinelli, 2009). Finger and hand impairments of separate limbs should be converted to whole person impairments using Table 15-11 before combining with the whole person impairment values of other limbs.

To justify combining additional factors, MIR Physicians could report the additional factors that compromise the patient's expected ability to use a limb prosthesis. For amputations distal to the biceps tubercle on the proximal radius, the individual can usually use a "below elbow" prosthesis. For transtibial amputations with stump greater than three inches, the



Bone anatomy

(Continued from page 726)

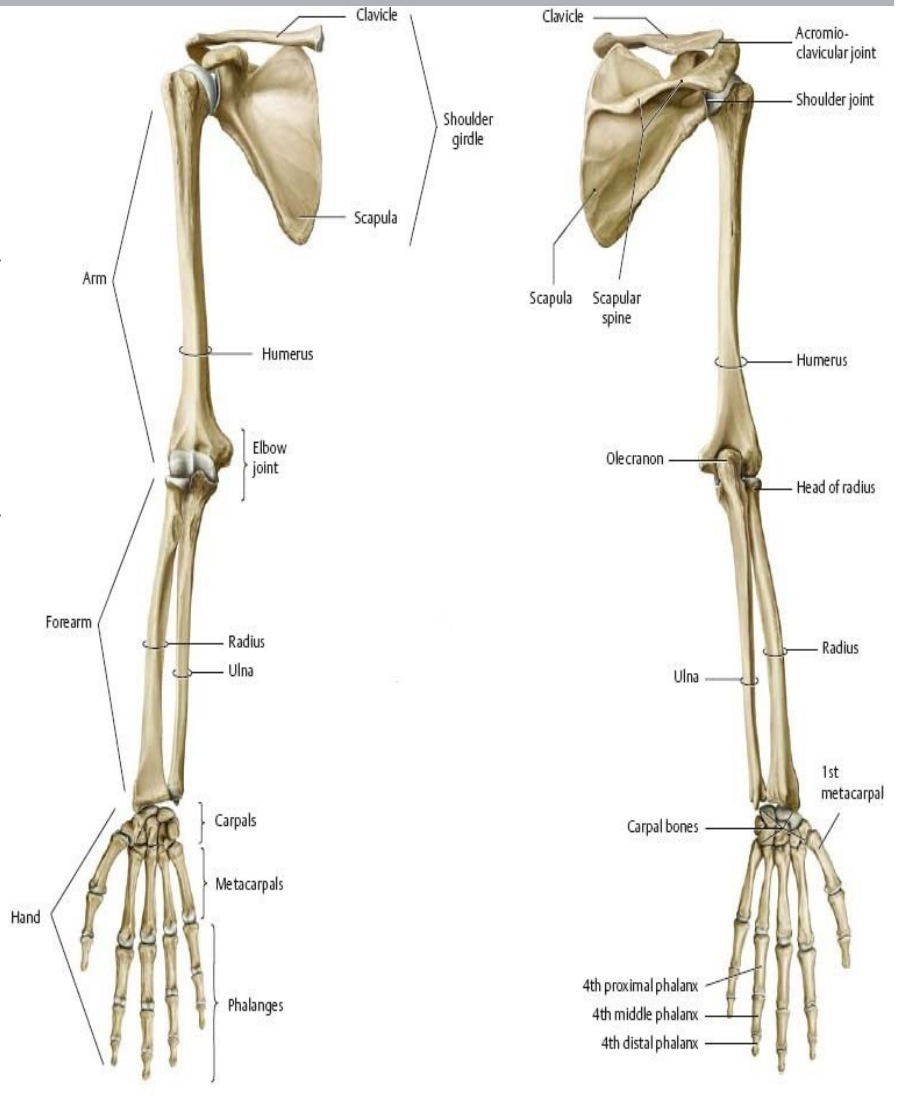
amputee can usually use a "below knee" prosthesis. For transtibial amputations with a stump greater than three inches, or with knee disarticulation, or with a distal transfemoral amputation, the amputee can usually use an "above knee" prosthesis with an artificial knee joint. If proximal diseases or injuries result in inability to wear and function in the expected prosthesis, this should be clearly stated as the rationale for increasing the rating due to consideration of proximal problems in the limb.

METHODOLOGY

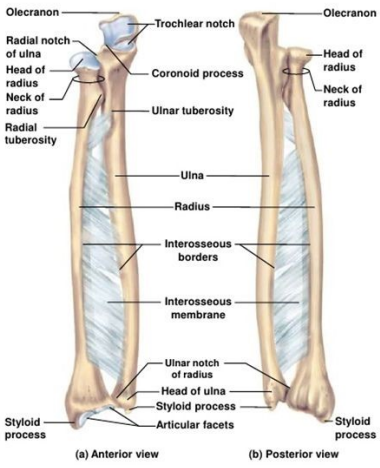
Impairment grids for the lower and upper extremity amputations are divided into five impairment classes—Class 0 through Class 4—with each impairment class further divided (except Class 0) into five grades—A,B,C,D, and E—each with their respective impairment rating, as expressed as a percentage of the extremity. The center value of each impairment class, Grade C, is the default impairment value.

Determining impairment class, and thus the default value of impairment, is fairly straightforward if the amputation occurs directly at the Interphalangeal joint (IP) or Metacarpophalangeal joint (CMP) of the thumb; the Distal interphalangeal joint (DIP), Proximal interphalangeal (PIP), or MCP of the finger; the bicipital tuberosity (bicipital insertion) of the radius or the deltoid tubercle (deltoid insertion) of the humerus; the interphalangeal joint of the greater toe; the first metatarsal; the metatarsophalangeal (MTP) joint(s); the transmetatarsal; or within three inches either above or below the knee. Since these anatomical reference points, with their respective ratings, are explicitly provided in the grids, the MIR Physician simply consults the relevant grid for the default rating, as expressed as a percent of the extremity. If, however, the amputation level does not fall directly at the place mentioned in the grid, then the MIR Physician should consult the appropriate figure. Figure 15-12 (page 458), for example, graphically demonstrates which levels of amputation correspond with which levels of digit impairment. Figure 15-11 (page 458) graphically expresses how different levels of thumb amputation correspond with impairment percentages. Figure 15-9 (page 456), likewise, shows how different levels of upper extremity amputation correspond to respective extremity and whole person impairment percentages. Figure 15-10 (page 456) graphically shows impairments of the digits and hand.

In many cases, the "default" or Grade C impairment can be quickly found in an applicable table (Table 15-27, Table 15-28, Figure 15-9, Figure 15-11, or Figure 15-12, or Table 16-16), and the default can be accepted as the impairment rating, as the amputation usually has the typical effects on function expected for the level of amputation. If, however, there are proximal problems or injuries that seriously compromise the residual function of the limb with an amputation, additional consideration of the range of motion in proximal joints, proximal diagnoses, and grade modifiers may be indicated.



Radius and Ulna



While "it is not possible to decrease impairment values below the value associated with the amputation level," the impairment value may increase due to proximal problems through the application of grade modifiers (Rondinelli, 2009, p. 459). This is reflected in Table 15-29 for upper extremity impairments (page 460) and Table 16-16 for lower extremity impairments (page 542), whereby Grades A and B have the same impairment value as the default value, Grade C. Grade modifiers still have the potential to increase the impairment rating value,

(Continued from page 727)

as Grades D and E are still higher than the default value. However, the likelihood of that happening is low, as explained below.

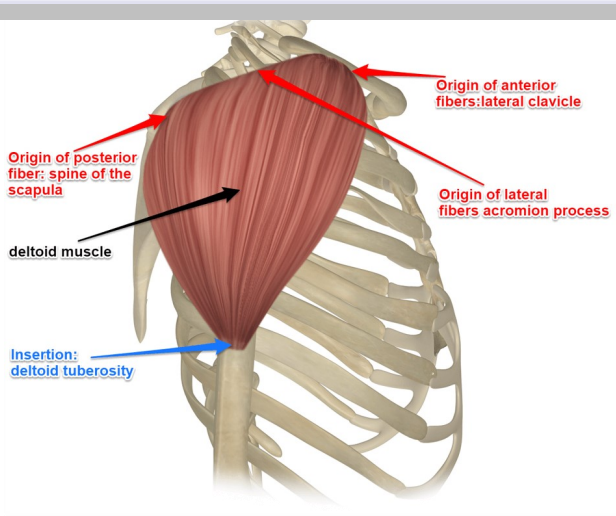
The selection of grade modifiers is explained in section 15.3 (page 405) for upper extremities and section 16.3 (page 515) for lower extremities. In summary, there are three grade modifiers that have the potential to increase amputation impairment ratings: functional history (FH), physical examination (PE), and clinical studies (CS). Functional history is based on the degree to which functional symptoms disrupt activities of daily living and can be chosen with the aid of Table 15-7 (page 406) for upper extremities and Table 16-6 (page 516) for lower extremities. As with all Tennessee workers' compensation claims that occur on or after July 1, 2014, pain should not be considered in assigning the degree of impairment. Therefore, other factors, such as sensory, strength, and mobility loss, must be relied upon instead when applicable. The MIR Physician should also be mindful that the FH grade modifier "should be applied only to the single, highest diagnosis-based impairment" (Rondinelli, 2009, p.406). The FH grade modifier may be deemed unreliable if its value differs by two more grades from either the PE or CS grade modifiers.

For upper limb amputees with a normal contralateral limb, it is hard to find a case with Grade 3 or Grade 4 for the FH grade modifier, as amputees with a single upper limb are usually independent in ADL with aids (e.g. button hooks to permit wearing buttoned shirts and blouses, etc.). Similarly, lower limb amputees usually wear a prosthesis successfully and are stable in it (no need for crutches, canes, etc.) so most would be FH grade modifier of 2, even though the level of amputation might well be Class 4.

Table 15-8 (page 408) is used to determine the PE grade modifier for upper extremity amputations while Table 16-7 (page 517) is used for lower extremities. Greater weight should be given to objective findings in determining the PE modifier. If physical exam findings are determined to be unreliable or inconsistent, they should be discarded from the grading process. Range of motion in retained joints, instability in retained joints, and deformity are the factors that can usually be cited to support choice of the PE grade modifier, as the other factors in Tables 15-8 and 16-7 are generally not applicable. The row for palpatory findings is generally not used, as the first paragraph of page 457 states that soft tissue contour, vascular issues, etc., with the terminal stump are generally not rated in amputations above hand level. Digital neuromas and digital nerve injury have a separate section (pages 457-8).

Finally, the CS modifier is assigned using Table 15-9 (page 410) for upper extremities and Table 16-8 (page 519) for lower extremities. Specials test results, such as electrodiagnostic and radiographic studies, are considered when assigning the CS grade modifier. If deformity is used to determine a PE grade modifier, it should not be used again on imaging to determine a GMCS.

Once all three grade modifiers are assigned, they are applied, along with the assigned impairment class, to the net adjustment formula, as on page 411. Essentially, the impairment class integer is subtracted from each of the grade modifier integers, and the differences are summated for a net adjustment applied to the default rating. A net adjustment of +1 will move the impairment rating from Grade C with the impairment class to the impairment value associated with Grade D. A net adjustment of +2 or greater moves the impairment rating from Grade C to Grade E. Mathematically, the net adjustment formula may be expressed as follows, where IC stands for impairment class:



$$(FH—IC) + (PE + IC) + (CS - IC) = \text{Net Adjustment}$$

Since most grade modifier values will not be above the impairment class value, seldom will the net adjustment raise the percentage of impairment from the default level.

CONCLUSION

Amputations are rated by the DBI method according to the level of amputation. Except in rare instances of bilateral upper extremity amputation or when the patient is unable to wear a prosthesis for a lower extremity amputation, the MIR Physician will usually use the default rating value within the selected impairment class as the final percentage rating. While amputations occur far too often in certain industries, such as meat processing, they are relatively rare compared to musculoskeletal injuries in workers' compensation as a whole. Therefore, before rating one of these injuries, the MIR Physician would do well to re-read the amputation section in the appropriate *AMA Guides* chapter before conducting an amputation evaluation.

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APPEALS BOARD WEIGHS IN ON PERMANENT TOTAL DISABILITY

Jane Salem, Esquire

A divided Appeals Board released an opinion a few months ago that offers guidance on permanent total disability cases under the Reform Act. The Appeals Board reversed the trial court, relying in part on the medical experts' testimony.

FACTS

Duwan Duignan, age sixty-one, worked for Stowers Machinery Corp. as a parts delivery driver. On June 1, 2016, he injured his low back at work. Dr. Patrick Bolt, an authorized treating physician/orthopedic surgeon, diagnosed a herniated disc and provided conservative care. He ordered a Functional Capacity Evaluation (FCE). Afterward, he adopted the FCE restrictions, placed Duignan at maximum medical improvement (MMI), and assigned a seven-percent impairment rating.

Stowers provided light-duty while Duignan recovered until he retired in October 2016 and did not seek employment elsewhere. Duignan began using a cane shortly after his injury. Dr. Bolt disapproved of a cane for patients with back pain, saying it "literally is a crutch."

The employee hired Dr. William Kennedy, also an orthopedic surgeon, for an evaluation. Dr. Kennedy gave a nine-percent impairment and imposed restrictions more severe than Dr. Bolt's. Dr. Kennedy explained his restrictions were "prophylactic" and not based on Duignan's measured abilities. Dr. Kennedy explained he assigns "similar restrictions to everyone he evaluates with this type of injury without regard to the individual's age, work environment, fitness level, or other factors." Regardless, Dr. Kennedy concluded that Duignan could work.

Both parties hired vocational experts. Duignan's expert concluded he was 75% vocationally disabled if the court adopted Dr. Bolt's restrictions, but if it accepted Dr. Kennedy's, he was totally disabled. Stowers hired an expert who concluded Duignan was capable of gainful employment.

After Duignan reached MMI, the parties agreed he couldn't work his former position. Stowers offered a warehouse position. The job exceeded Duignan's weight limits, but Stowers offered lifting devices and allowed him to seek coworkers' assistance when needed. Stowers, however, didn't agree to him using the cane at work, as it wasn't recommended by Dr. Bolt. Duignan refused the position.

Judge Pamela B. Johnson concluded that Dr. Kennedy's opinion was insufficient to rebut the statutory presumption of correctness afforded to Dr. Bolt's opinion regarding his impairment. Judge Johnson accepted Dr. Bolt's seven-percent rating and restrictions from the FCE. She further accepted Duignan's expert's opinion on vocational disability, as well as Duignan's testimony regarding his ability to work, concluding he was permanently totally disabled. Stowers appealed.

THE OPINION

The Appeals Board's analysis didn't focus on the differences between the physicians' impairment ratings. Rather, the Board disagreed with the trial court's determination of permanent total disability.

The Board observed that Duignan didn't look for work, post-injury. The Board cited pre-Reform Act case law holding that an employee's decision to retire because he fears re-injury is unreasonable and would essentially nullify the statute by allowing any employee to refuse employment "based upon an unfounded fear of re-injury."

Writing for the two-judge majority, Presiding Judge Marshall Davidson also took issue with Duignan's refusal to attempt the accommodated position. Judge Davidson wrote, "[B]ecause Employee refused to attempt the job as modified, we have no way of knowing whether Employer would have been able to provide a position within his restrictions, and a finding of permanent total disability would require us to speculate in that regard." The Board was unmoved by Duignan's assertion that he needed the cane at work. "[I]t was Employee's choice to use a cane, and no physician prescribed or recommended the cane. In fact, the authorized physician specifically advised against it," the majority admonished. The majority further pointed out that neither physician indicated that Duignan was unable to work. In fact, Duignan's own medical expert, Dr. Kennedy, acknowledged his restrictions wouldn't preclude him from working. The majority held he wasn't unable to work at a job that brings him an income and therefore wasn't permanently totally disabled.

Judge Timothy Conner dissented. He argued the majority placed too much emphasis on the reasonableness of Stowers' offer of an accommodated position and Duignan's purported unreasonableness in declining it.

A COUPLE OF TAKEAWAYS

It wouldn't be an article by a staff attorney without a disclaimer, right? These are solely my opinions. They're not to be read and accepted as pronouncements from the Court of Workers' Compensation Claims or the Appeals Board.

First, the trial court accepted Dr. Bolt's opinion on restrictions over Dr. Kennedy's. Dr. Bolt based his, in part, on the FCE; Dr. Kennedy's were "prophylactic" and not tailored to this particular injured worker. Although the Appeals Board didn't express any opinion on these varying methodologies, to me, a more individualized approach will likely be more persuasive to the factfinder, as it was to Judge Johnson in this case.

Second, the physicians' opinions on restrictions are critically important in permanent total disability cases. Vocational experts rely on the restrictions, not the impairment rating, to assess disability. As in this case, the restrictions led to the vocational assessments. The Appeals Board majority expressed disapproval of the injured worker's use of the cane contrary to Dr. Bolt's recommendation. Further, regarding his ability to return to work, while Judge Johnson based her ruling in part on Duignan's assessment of his own abilities, the Appeals Board majority signaled that it places more weight on the medical and vocational experts' opinions.

Finally, it appears that no objection was raised about the qualifications of a doctor to provide opinions on whether an individual could work. We can only speculate as to the outcome had this objection been raised and sustained.

A MESSAGE OF HOPE FOR INJURED WORKERS

Brian Holmes, MA

I cannot count the number of times I have disappointed injured workers. As a workers' compensation mediator for 10 years and now as director of the Bureau's mediation and ombudsman program, I have had plenty of opportunities.

Injured workers often came to me for some hope that their situation would get better. Their dissatisfaction was not because I wasn't kind, or because I didn't offer the services I was trained to provide, nor was it because I didn't understand what they needed. I did not meet their expectations because I believed the scope of my help was limited to the workers' compensation benefits provided by law.

Workers' compensation physicians understand my regret. The workers' compensation law provides for medical treatment. Physicians diagnose, operate on, and treat injuries to help an injured worker recover. Employment, financial, and marital problems stemming from the work injury can obstruct recovery. Yet, what physician is able to help with these issues?

Employers and insurance adjusters also understand the frustration. Federal laws and regulations affect their ability to provide assistance on a number of personal issues an injured worker endures after a workplace injury. Keeping a business profitable so that others can keep working is important. How can a business help one worker if it is financially detrimental to the workplace? Also, knowing how to safely perform the work is one thing, but how does someone who is disabled do it?

The time has come for a new message, a message of hope that provides a plan to fully recover from injury. It is time for a plan that addresses the broken bones and torn tendons, provides for the financial and emotional toll on the injured worker, and provides an optimistic future for employment opportunities. This positive change is being driven across the world. The International Association of Industrial Accident Boards and Commissions published a paper on April 19, 2016, titled: "Return to Work: A Foundational Approach to Return to Function." The paper encourages a societal approach to return to work and daily function. Stakeholders and parties to workers' compensation claims are asked to play active roles in an injured person's recovery and their return to a productive and contributory role in society. The costs to do otherwise are untenable. The paper reads, "The absence of effective programs to restore function and return injured persons to work cause nations to have high rates of disability and puts extreme pressure on economies and society as a whole."

A workers' compensation system of dedicated stakeholders, physicians, regulators, employers, and employees can develop programs to help injured workers recover beyond just what workers' compensation benefits provide. For example, we can connect injured workers to resources that help them cope and recover from their depression, even though their mental anguish from losing their jobs is not compensable under the workers' compensation act. In addition, employers are not required to bring an injured worker back to work after or during recovery. However, the system can help injured workers obtain new skills, find new job opportunities, or help employers identify low-cost or no-cost job modifications to keep a loyal and trained employee on staff.

The Bureau is primed to help injured workers in new ways. We are a small agency without significant resources. Fortunately, the State of Tennessee is a leader on the forefront of providing services we can use to help. We will coordinate with other state agencies, medical providers, insurers, employers, and employees to unite and efficiently utilize existing programs to aid the full recovery of injured employees in Tennessee.

Over the next year, this column will features ways the Bureau is working to find new methods to fulfill the promise of workers' compensation to injured workers and their employers. The next article will highlight the Next Step Program. This program answers the question posed by many workers who reached MMI and settled their claim: "What do I do now?" The system will help these workers obtain new job skills to find new job opportunities, successfully return to work, and reduce the personal costs of workers' compensation claims.

Are you ready?

CHRISTOPHR P. ASHLEY, MD

(Continued from page 725)

they enjoy skiing, snowboarding, and camping. Individually, Zack is a competitive body builder who graduated from UT Chattanooga and played high school football and soccer; Haley is a kindergarten teacher at Union Elementary in Gallatin, Tennessee, a graduate of Austin Peay, a former basketball and soccer player, and a current rugby player with the Nashville Women's Rugby Team; Noah, currently a sophomore at UT Knoxville, helped win the state soccer title for Station Camp High School, which ended the year ranked number one in the U.S; Eli is also a promising soccer player for Station Camp and is active in DECA at the state and regional level; and Isabella, a member of the National Honor Society, enjoys competitive dancing at the national level.

Dr. Ashley himself is an avid runner and road biker. He is also a state licensed soccer coach at the club level and has coached youth baseball, Pop Warner football, and basketball.

Muscle Nerve. 2016 Sep;54(3):371-7.
doi: 10.1002/mus.25203

Electrodiagnostic reference values for upper and lower limb nerve conduction studies in adult populations.

Chen S, Andary M, Buschbacher R, Del Toro D, Smith B, So Y, Zimmermann K, Dillingham TR.

INTRODUCTION
To address the need for greater standardization within the field of electrodiagnostic medicine, the Normative Data Task Force (NDTF) was formed to identify nerve conduction studies (NCS) in the literature, evaluate them using consensus-based methodological criteria derived by the NDTF, and identify those suitable as a resource for NCS metrics.

METHODS
A comprehensive literature search was conducted of published peer-reviewed scientific articles for 11 routinely performed sensory and motor NCS from 1990 to 2012.

RESULTS
Over 7,500 articles were found. After review using consensus-based methodological criteria, only one study each met all quality criteria for 10 nerves.

CONCLUSION
The NDTF selected only those studies that met all quality criteria and were considered suitable as a clinical resource for NCS metrics. The literature, however, is limited, and these findings should be confirmed by larger, multicenter collaborative efforts.

. . . . . .

This article is significant. Previously each doctor who did nerve conduction testing to diagnose conditions like carpal tunnel syndrome (CTS) chose his/her own definition of normal, resulting in a wide variation in the clinical question "Does this person have carpal tunnel syndrome?" If a patient went to three doctors for this testing, one would label the patient as normal, one would label the patient as "mild CTS," and the third would label the same patient as "moderate CTS," because each doctor believed in a different definition of normal values for this testing. This has resulted in problems for utilization review and impairment ratings, where diagnosis is a crucial first step in the process.

Happily, AANEM (the American Association of Neuromuscular and Electrodiagnostic Medicine), which is the professional physician organization for those doing nerve conduction and EMG testing, has chosen from the medical literature the same definitions of normal versus carpal tunnel syndrome in nerve conduction testing that are in Appendix 15-B of the *AMA Guides*, Sixth Edition. Meeting this criterion is required for an AMA Guides rating of carpal tunnel syndrome. This AANEM definition of "normal" versus abnormal will hopefully become used by more and more physicians over time, just as physicians accept the American Diabetes Association definitions of Diabetes, and JNC 8 definitions of hypertension.

Spine (Phila Pa 1976). 2018 Sep 15;43(18):1250-1258.
doi: 10.1097/BRS.0000000000002622.

A Comprehensive Review of Low-Speed Rear Impact Volunteer Studies and a Comparison to Real-World Outcomes.

Cormier J, Gwin L, Reinhart L, Wood R, Bain C

STUDY DESIGN
This study combined all prior research involving human volunteers in low-speed rear-end impacts and performed a comparative analysis of real-world crashes using the National Automotive Sampling System - Crashworthiness Data System.

OBJECTIVE
The aim of this study was to assess the rates of neck pain between volunteer and real-world collisions as well as the likelihood of an injury beyond symptoms as a function of impact severity and occupant characteristics in real-world collisions.

SUMMARY OF BACKGROUND DATA
A total of 51 human volunteer studies were identified that produced a dataset of 1,984 volunteer impacts along with a separate dataset of 515,601 weighted occupants in real-world rear impacts.

METHODS
Operating-characteristic curves were created to assess the utility of the volunteer dataset in making predictions regarding the overall population. Change in speed or delta-V was used to model the likelihood of reporting symptoms in both real-world and volunteer exposures and more severe injuries using real-world data. Logistic regression models were created for the volunteer data and survey techniques were used to analyze the weighted sampling scheme with the National Automotive Sampling System database.

RESULTS
Symptom reporting rates were not different between males and females and were nearly identical between laboratory and real-world exposures. The minimal risk of injury predicted by real-world exposure is consistent with the statistical power of the large number of volunteer studies without any injury beyond the reporting of neck pain.

CONCLUSION
This study shows that volunteer studies do not under-report symptoms and are sufficient in number to conclude that the risk of injury beyond neck strain under similar conditions is essentially zero. The real-world injury analyses demonstrate that rear impacts do not produce meaningful risks of cervical injury at impacts of similar and greater severity to those of the volunteer research. Future work concerning the mechanism of whiplash-related trauma should focus on impacts of severity greater than those in the current literature.

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THE VALUE OF RETURNING TO WORK

James B. Talmage, MD

It is important for all involved parties to realize the value of return to work. Philosophers have recognized the value of work for centuries. The Canadians were the first to publish on this, stating, "Prolonged absence from one's normal roles, including absence from the workplace, is detrimental to a person's mental, physical, and social well being. Physicians should therefore encourage a patient's return to function and work as soon as possible." Since then, ACOEM has affirmed this in 2002 and 2008 policy statements, the AMA affirmed this in a 2004 House of Delegates Resolution, as did the Royal Australian College of Physicians and their Faculty of Occupational & Environmental Medicine in 2010. The Australians (RACP) have also published a biannual electronic newsletter entitled *The Health Benefits of Good Work*, asserting in their 2010 first policy statement: "As physicians, we see firsthand the personal tragedies that long term work absence, unemployment and work disability wreak on individuals, families and communities. We see marriages end, capable individuals excluded from employment, breadwinners become reliant on pensions, and mental health problems like anxiety and depression develop." Rubbing salt in the wound, extended time off work often sees a worsening rather than an improvement in symptoms and conditions it is supposed to ameliorate.

The British Department of Work and Pensions has established that, "for most adults of working age, including people with disabilities and many common health problems, there is strong evidence that [return to] work:(1)promotes recovery and aids rehabilitation; (2) improves physical and mental health and well-being; (3) reduces social exclusion and poverty. The beneficial effects of work generally outweigh any risks of work. There is strong evidence that long periods out of work can cause or contribute to: (1) higher consultation, medication consumption and hospital admission rates (2) two to thee times increased risk of poor general health (3) two to three times increased risk of mental health problems; and (4) 20% excess mortality. Furthermore, "the longer anyone is off work, the lower their chances of getting back to work." Sickness certification is a major clinical intervention with potentially serious long-term consequences. Two-thirds of sickness absence, long-term incapacity and ill-health retirement is now due to "common health problems" – mild/moderate mental health, musculoskeletal and cardio-respiratory conditions. Much of this should be preventable. Some of the excess mortality that occurs in adults who become unemployed is due to suicide, traffic collisions, and drug overdose, but most of the excess mortality surprisingly is due to medically unexplainable increases in heart and vascular disease and cancer. Traditional medical risk factor analysis cannot explain the increase, so it appears unemployment is a toxin to the human.

Thus, the BWC has an interest in programs that will help injured workers who experience work injury related unemployment in retraining, and improving transferable job skills so that they can return to work.

2019 TN WC PHYSICIAN EDUCATION CONFERENCE MUSIC CITY SHERATON

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AdMIRable Review accepts electronic submissions for medicolegal articles related to Tennessee Workers' Compensation. Manuscripts prepared in accordance with the American Psychological Association (APA) guidelines are preferred and must not exceed 20 typewritten, double-spaced pages. Tables, charts, notes, and references should be on separate pages. A double-spaced summary of approximately 100 words as well as a biographical paragraph describing the author's affiliation, research interest, and recent publications is appreciated. Submission of a manuscript implies permission and commitment to publish in *AdMIRable Review*. Authors submitting manuscripts to *AdMIRable Review* should not simultaneously submit them to another public-administration journal. Submissions and inquiries should be directed to *AdMIRable Review*, Editorial Staff, at Jay.Blaisdell@tn.gov .

BUREAU ANNOUNCEMENTS

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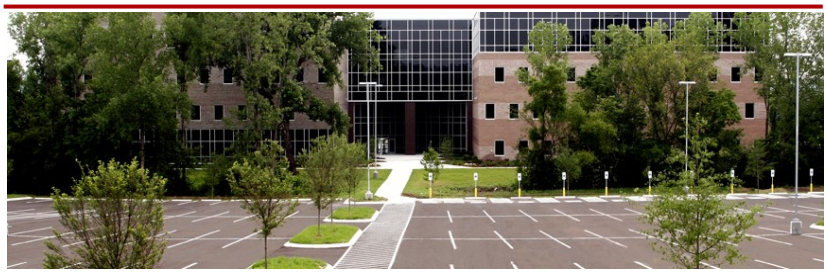

Tennessee Bureau of Workers' Compensation

AdMIRable Review,
Tennessee Bureau of Workers' Compensation
220 French Landing, Suite 1-B, Nashville, TN 37243
P: 615.253.5616 | F: 615.253.5263 | Jay.Blaisdell@tn.gov