

## President's Message

Rick Wickstrom, PT, DPT, CPE

I am pleased to announce that OHSIG leaders have established a new mission, vision, and strategic initiatives to align with the AOPT Strategic Plan and initiative priorities that were finalized at CSM 2020. OHSIG members may access this document from our website at <https://www.orthopt.org/content/special-interest-groups/occupational-health>.

This is a good time to reflect about how our actions moving forward each day position us for future success in our area of expertise. I would like to call out several examples of professionalism and actions within our OHSIG and throughout our professional association that have encouraged or inspired me during this uncertain time:

- Our Work Rehab CPG Subcommittee led by Lorena Payne and Dee Daley has completed a quality review of 291 additional articles for the Work Rehabilitation CPG and have submitted this evidence-based practice manuscript for review.
- Our Communications Committee led by Cory Blickenstaff and Peter McMenamin is forging ahead with an update of our Current Concepts document on the Role of the PT in Occupational Health. This outward facing document will communicate our qualifications and expertise to outside stakeholders.
- We are recruiting members to a new Membership Subcommittee that is charged with our strategic initiative of establishing key contact OHSIG member experts in all states to enhance payment and service opportunities in occupational health. If you have a passion for payment policy advocacy in occupational health in your state, please let us know about your interest in getting involved.
- OHSIG leaders submitted a proposal to AOPT to establish an educational program and certificate in occupational health as our centerpiece initiative to support OHSIG's vision is to lead the world in optimizing movement, musculoskeletal health, and work participation from hire to retire.

Finally, I would like to acknowledge Steve Allison for his assistance with educational and strategic planning in his new role as our OHSIG VP/Education Chair. Steve also took the lead in writing the article for this issue of *OPTP* about the *Role of the Physical Therapist to Promote Fitness-For-Duty of Commercial Drivers*. Steve was the first physical therapist in Louisiana to become a Certified Medical Examiner in 2015, which was before Louisiana upgraded its scope of practice for direct access. His example inspired me to pursue this certification myself during the downtime created by the COVID-19 pandemic. Steve mentored me on a successful petition request to get a letter from the PT Section of the Ohio OTPTAT Board to clarify that DOT Physicals are within the scope of practice of physical therapists. Steve and I both hope that our article and advocacy success in Louisiana and Ohio will prompt physical therapists in other states to pursue this examiner certification in occupational primary care!

## The Role of the Physical Therapist to Promote Fitness-For-Duty of Commercial Drivers

Steve Allison, PT, DPT, OCS, CME | Rick Wickstrom, PT, DPT, CPE

### INTRODUCTION

Obesity is a major concern in Workers Compensation insurance. A retrospective cohort study by Ostbye et al<sup>1</sup> found a strong linear relationship between body mass index (BMI) and the rate of Workers' Compensation claims, lost workdays, medical costs and indemnity costs. This study<sup>1</sup> found that injury rates were 2 times higher, lost workdays were 13 times higher, medical claims costs were 7 times higher, and indemnity claims costs were 11 times higher for the heaviest employees as compared to those employees falling within the recommended weight guidelines.

Obesity is an even bigger concern for commercial drivers when compared to other occupations. The prevalence of obesity is over 69% of commercial truck drivers, compared to 31% of working adults in the United States.<sup>2</sup> Most drivers reported low physical activity, poor dietary habits, and sleep deficits that contribute to obesity.<sup>3-4</sup> Obstructive sleep apnea is associated with obesity and poses a serious public health concern in drivers because of its association with a higher risk of motor vehicle crashes.<sup>5</sup> Long haul truck drivers have additional lifestyle challenges because they may be away from home for days or weeks at a time. A recent study of 2014-2018 Workers' Compensation lost-time claims by the state of Massachusetts ranked Transportation & Warehousing (2-digit NAICS 48) as the highest priority industry sector for prevention.<sup>6</sup>

Traditional workplace wellness programs often emphasize cardiovascular risks but ignore musculoskeletal risks that are more relevant to prevent or manage workers' compensation claims. Song et al<sup>7</sup> demonstrated that clinical biometrics such as blood lipid and productivity outcomes do not significantly improve in response to traditional workplace wellness programs. This approach fails to consider the unusual work lifestyle of truck drivers and musculoskeletal risk factors that contribute to higher injury or disability risks for these drivers compared to more physically demanding occupational groups. Fatiguing job demands, low social support, and not allowing workers to participate in activities during work hours are key factors that reduce worker participation in wellness programs.<sup>8</sup> With these considerations in mind, the purpose of this article is to inform physical therapists about how to become certified to conduct Department of Transportation (DOT) physical examinations and apply expertise in diagnosis of musculoskeletal movement disorders to promote safety and wellness of drivers from hire to retire.

### FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION

The Federal Motor Carrier Safety Administration (FMCSA) is the lead federal government agency responsible for regulating and providing safety oversight of commercial motor vehicles. The mission of FMCSA is to reduce crashes, injuries, and fatalities involving large trucks and buses.<sup>9</sup> The Medical Program Division of the FMCSA promotes the safety of American's roadways through the

promulgation and implementation of medical regulations, guidelines, and polices that ensure vehicle drivers engaged in interstate commerce are physically qualified to perform their jobs as commercial truck and bus drivers.<sup>10</sup>

## PHYSICAL DEMANDS OF COMMERCIAL DRIVING

The physical demands of commercial truck driving requires that drivers be able to have sufficient balance, flexibility, range of motion, and strength to be able to safely perform essential job functions including but not limited to climbing into and out of 18-wheel trucks and trailers; coupling and uncoupling trailers; load, secure, and unload cargo; and to perform pre-trip and post-trip inspections. In addition, CMV drivers need to have adequate vision and hearing to safely operate these large vehicles over the road.<sup>11</sup>

## COMMERCIAL TRUCK & BUS CRASH STATISTICS

Information from the National Transportation Safety Bureau crash statistics has indicated that inadequacy in the medical certification process for CMV drivers with serious disqualifying medical conditions has directly contributed to fatal and injury crashes.<sup>12</sup> According to the most recent full calendar year statistics from the FMCSA in 2018:

- 4,979 large trucks and buses were involved in fatal crashes.
- 96,944 large trucks and buses were involved in injury crashes.<sup>13</sup>

Analysis of 2004–2011 data from the National Health Interview Survey found the highest prevalence of obesity in the transportation and material moving industry sector, especially motor vehicle operators, irrespective of gender and race/ethnicity.<sup>14</sup> A survey by Yeary et al<sup>15</sup> of transit school bus drivers found that resources for healthy eating and physical activity were limited in the garage work locations, which may account for why most bus drivers were obese and unable to meet physical activity or dietary recommendations. The rate of injury for cases that involved days away from work, job transfer or restrictions is 2.7 per 100 workers in the Truck Transportation Industry (NAICS 484)<sup>16</sup> and 2.5 per 100 workers in the Transit and Ground Passenger Transportation Industry (North American Industry Classification System [NAICS] 485).<sup>17</sup> Transit and intercity bus drivers have two times the rate of injury for musculoskeletal disorders when compared to light truck and delivery drivers that have much more physical duties.<sup>18</sup>

## NATIONAL REGISTRY OF CERTIFIED MEDICAL EXAMINERS

The National Registry of Certified Medical Examiners (National Registry) is a Federal program that establishes training and certification requirements for health care professionals that perform physical qualification examinations for commercial truck and bus drivers, commonly referred to as DOT medical examinations. The National Registry was created to ensure that medical examiners have sufficient understanding about how FMCSA medical regulations and related guidance apply to CMV drivers, to enhance CMV driver health, and to reduce CMV driver-related highway crashes. Upon completion of required training, the health care professional may print their certificate qualifying them to sit for the National Registry of Certified Medical Examiners (NRCME) examination and if successful become a Certified DOT Medical Examiner.

## DOT MEDICAL EXAMINATIONS

As of May 21, 2014, only certified Medical examiners listed on the National Registry are allowed to perform CMV driver physi-

cal examinations, to determine a driver's fitness-for-duty using the Medical Examination Report Form (Form MCSA-5875).<sup>19</sup> Medical examiners are required to review the driver's reported health history, and discuss any medical issues or the use of any medications that could be disqualifying or impair the driver's ability to safely operate a large truck or bus. Medical examiners should obtain additional tests or consultations from other medical professionals, as necessary, to adequately assess the medical fitness of a driver.

## BASIC TESTS

Medical examiners are also required to review basic test results and perform a physical examination to determine a CMV driver's fitness-for-duty. Basic test results include:

- Height
- Weight
- Pulse rate
- Pulse rhythm
- Blood pressure
- Urinalysis (specific gravity, protein, blood, and sugar) done by urine dipstick
- Vision screening tests
  - ◆ Visual acuity done by Snellen chart or comparable test
  - ◆ Horizontal field of vision test
  - ◆ Color vision test (red, green, and amber)
  - ◆ Referral for testing by optometrist or ophthalmologist if necessary
- Hearing screening tests
  - ◆ Forced whisper test
  - ◆ Referral for audiometric testing when necessary

Trained assistive personnel may perform the basic tests listed above and record test results. However, medical examiners are required to review and attest to the validity of all documented test results. When blood pressure, pulse rate, or both are significant factors in a medical examiner's decision not to certify a driver, it is recommended that medical examiners obtain their own measurements. Abnormal urine dipstick readings may also indicate the need for referral to another medical provider for additional testing to adequately assess a driver's medical fitness-for-duty.

## PHYSICAL EXAMINATION

The medical examiner is required to perform the physical examination and document any abnormal findings, even if not disqualifying. The medical examiner should indicate whether the abnormality affects a driver's ability to safely operate a CMV, and if additional medical evaluation is needed to adequately determine medical fitness for duty. The DOT physical examination consists of a basic screening of the following body systems for any abnormalities:

- General
  - ◆ Posture, tremors, affect, demeanor, fragile, obese, and signs of alcohol or drug abuse
- Skin
  - ◆ Discoloration, burns, wounds, and scars
- Eyes
  - ◆ Pupillary equality, reaction to light and accommodation, ocular motility, ocular muscle imbalance, extra-ocular movement, nystagmus, and exophthalmos
- Ears
  - ◆ Scarring of tympanic membrane, occlusion of external canal, and perforated eardrums

- Mouth/Throat
  - ◆ Sores or discoloration
- Cardiovascular
  - ◆ Arrhythmia, murmur, extra sounds, enlargement, pacemaker, implantable cardioverter defibrillator, pitting edema in lower extremities, or other signs of cardiac disease
- Lungs/Chest
  - ◆ Abnormal chest wall expansion, respiratory rate, breath sounds including wheezes or alveolar rales, cyanosis, clubbing of fingers, or other signs of pulmonary disease
- Abdomen
  - ◆ Enlarged liver and spleen, masses, bruits, hiatal and umbilical hernia, significant abdominal wall muscle weakness, tenderness, and bowel sounds
- Genito-urinary System including Hernias
  - ◆ Inguinal hernias resulting in driver discomfort and results from urine dipstick results for signs of underlying medical problems
- Back/Spine
  - ◆ Deformities, limitations of motion, muscle spasm at rest or with range of motion testing, and tenderness
- Extremities/Joints
  - ◆ Loss, impairment or deformity of arm, hand, finger, leg, foot or toe; sufficient grasp and prehension in the upper limbs to maintain steering wheel grip; sufficient mobility and strength in the lower limbs to operate pedals properly; sufficient mobility and strength in upper and lower limbs for climbing; signs of progressive musculoskeletal conditions such as muscle atrophy, weakness, or hypotonia; clubbing or edema in the extremities that may indicate the presence of an underlying heart, lung, or vascular condition
- Neurological System including Reflexes
  - ◆ Impaired coordination, speech pattern, deep tendon reflexes, Babinski' reflex, and sensory impairment
- Gait
  - ◆ Ataxia, balance, and limp
- Vascular System
  - ◆ Abnormal pulse and amplitude, carotid or arterial bruits, varicose veins, and other signs of arterial or venous insufficiency

### MEDICAL CERTIFICATION OF CMV DRIVER

The CMV drivers must obtain an updated DOT medical examination at least every two years to ensure they remain medically fit-for-duty. Certain medical conditions and/or findings may warrant periodic medical monitoring with medical certifications issued for shorter time periods, and other medical conditions and/or findings are automatically disqualifying.

Determining medical fitness-for-duty is ultimately the responsibility of the certified medical examiner. While other medical specialists' opinions about a driver's ability to safely operate a commercial vehicle, the final determination rests with the certified medical examiner to protect public safety.

### PHYSICAL THERAPIST EDUCATION

The practice of physical therapy continues to evolve in response to societal needs, regulations, and as evidenced-based clinical practice guidelines become available. Currently, all 256 accredited

physical therapy programs in the United States confer a Doctor of Physical Therapy (DPT) degree. To practice as a physical therapist in the United States, individuals must graduate from a Commission Accreditation of Physical Therapy Education accredited DPT program and pass a national licensure examination.

The required curriculum in all accredited DPT programs includes content and learning experiences in the biological, physical, behavioral, and movements sciences necessary for entry level practice. Topics covered include anatomy, physiology, genetics, exercise science, biomechanics, kinesiology, neuroscience, pathology, pharmacology, diagnostic imaging, histology, nutrition, and psychosocial aspects of health and disability.

The DPT curriculums also include content and learning experiences about the cardiovascular, endocrine, metabolic, gastrointestinal, genital and reproductive, hematologic, hepatic and biliary, immune, integumentary, lymphatic, musculoskeletal, nervous, respiratory, renal and urologic systems, and medical and surgical conditions across the lifespan commonly seen in physical therapy practice.<sup>20</sup>

### PHYSICAL THERAPIST SCOPE OF PRACTICE

Physical therapists are qualified by professional training and national licensure to establish a diagnosis based on an individual's history, systems review, and tests and measures from a physical examination and any other relevant diagnostic testing.<sup>21</sup> Physical therapists practicing in private or hospital-based outpatient clinics routinely perform hundreds to thousands of physical examinations every year. Physical therapists are uniquely qualified to evaluate the effects various medical conditions have on an individual's ability to function. It is not uncommon during physical examinations for physical therapists to uncover medical conditions that have not been diagnosed by a medical doctor. In these instances, physical therapists refer the patient back to their treating doctor or their primary care physician for further medical evaluation.

Physical therapists specializing in occupational health routinely perform physical examinations as part of a pre-employment/post-offer and fitness-for-duty functional testing protocol for employers representing a wide range of industries. It is common to find significant musculoskeletal impairments during physical examinations of "apparently healthy" individuals who have no reported history of problems. Musculoskeletal impairments commonly encountered during physical examinations include rotator cuff tears, joint and spine stiffness with loss of motion, joint instability, scoliosis, and hiatal hernias. However, other medical conditions such as Parkinson's disease, progressive idiopathic polyneuropathy, impending hip fractures associated with avascular necrosis, diabetes, high blood pressure, vision deficits, and hearing loss have all been discovered during physical examinations performed by physical therapists.

### NATIONAL REGISTRY REQUIREMENTS

To become a certified DOT medical examiner and be listed on the National Registry, health care professionals must complete training and testing on the FMCSA physical qualifications standards and guidelines. As of May 21, 2014, all medical certificates issued to interstate truck and bus drivers must come from medical examiners listed on the National Registry. To become a certified medical examiner, a health care professional must meet the following requirements:

- Be licensed, certified, or registered to perform medical ex-



aminations in accordance with applicable State laws and regulations.

- Complete a training program in FMCSA's physical qualification standards and guidelines conducted by a private-sector training provider accredited by a nationally recognized medical profession accrediting organization that provides continuing education credits.
- Pass the FMCSA medical examiner certification test administered by an FMCSA-authorized private-sector testing organization.<sup>22</sup>

Currently, five (5) Physical Therapy State Licensure Boards (TX, AR, LA, ND, and OH) in the United States have determined that it is within the scope of physical therapists to perform physical examinations as required by the U.S. Department of Transportation, Federal Motor Carrier Safety Administration.

## INTEGRATING WELLNESS FOR TRUCK DRIVERS

In the past few decades, workplace wellness programs have grown in popularity to promote healthy lifestyle behaviors and improve the management of chronic diseases such as diabetes, heart disease, chronic lung disorders, depression, and cancer. Among different types of wellness programs and strategies (eg, health coaching, health education/literacy, lifestyle management), 80% of programs offer health screenings such as health risk assessment surveys and biometric screenings with feedback to reduce personal health risks or better manage chronic disease.<sup>23</sup> In a robust review of 51 studies of workplace wellness published between 1984 and 2012, Baxter et al<sup>24</sup> reported a negative return on investment when they only considered randomized control trials and excluded early return to work and workplace injury prevention studies. Wipfli et al<sup>25</sup> conducted a cluster-randomized trial of a weight loss intervention for truck drivers that included a web-based computer and smart phone-accessible format and group weight loss competition that included self-monitoring of body weight and behavior, computer-based training, and motivational interviewing by health coaches. They found that program completers demonstrated greater weight loss than those who did not. Web-based self-monitoring of body weight and health behaviors was found to be particularly impactful for this mobile population.

There are several major concerns about how workplace wellness programs are currently implemented. First, traditional programs often emphasize cardiovascular risks, but ignore musculoskeletal fitness risks that are more relevant to workplace injury prevention, disability management, and lifestyle functioning of workers. Musculoskeletal disorders are the most common medical conditions in adults under 65, resulting in an estimated annual cost of \$980 billion for medical treatment and lost wages in the United States.<sup>26</sup> Second, significant financial and administrative costs are required to implement health risk screening and follow-up program interventions. As a result, smaller employers are more likely to limit the scope of biometric screening to review tobacco use, calculate BMI (weight in kilograms divided by the square of height in meters), and check for abnormal blood pressure.<sup>27</sup> Blood work (eg, blood cholesterol, blood glucose) and aerobic fitness tests are often excluded due to financial or scheduling constraints. Third, feedback in the form of educational messages is often missing or inadequate to promote behavioral change. For example, workers may receive generic recommendations to increase their physical activity when obesity is present; however, no objective biometrics of physical fitness are routinely included in most programs to sup-

port accountable care and promote suitable physical activity of workers from hire to retire.

## RECOMMENDATIONS TO IMPROVE DRIVER FITNESS-FOR-DUTY

Since employers often pay the cost for the DOT physical examination, they often select the site where the driver receives the examination. This examination is mandated to occur at least every two years; therefore, this creates potential for the same examiner to monitor the movement performance of drivers from hire to retire. If a movement screen is integrated with the DOT physical examination process, then pre-injury baseline information collected would support follow-up health coaching to reduce the personal and economic cost of musculoskeletal disorders. The DOT examination process allows flexibility to collect objective metrics that relate to musculoskeletal fitness.

Establishing a baseline of objective measures to quantify functional movement performance to supplement the DOT Physical Examination. This will benefit the design of wellness and health care programs in the following ways:

- Objective measures create accountability to motivate lifestyle behavioral changes to promote healthy physical activity.
- Establishing some normative data on these tests for long haul and passenger transport drivers will support interpretation of driver results to motivate fitness accountability.
- Establishing a pre-injury baseline of functional performance facilitates the setting of realistic functional recovery goals.

Linking the DOT Medical Examination with objective movement biometrics and health coaching would encourage drivers to engage in suitable physical activities and dietary management practices that would be realistic for their challenging work-life schedules.

## CONCLUSION

The extensive training physical therapists receive in screening for disease and evaluation of the neuromusculoskeletal system provide the firm foundation for performing very thorough commercial driver fitness-for-duty physical examinations. Most items required during a DOT physical examination are second nature and routine for many physical therapists. However, there are a few items listed for the DOT physical examination that will require some refresher training during post-professional continuing education.

The authors strongly encourage more physical therapists to use their expertise and specialized knowledge in functional screening to become certified DOT medical examiners. Before proceeding with FMCSA-mandated training, you should make sure that FMCSA has received a clarification letter from your state licensing board that the DOT physical examination is within your scope of practice. This scope of practice issue has already been established as a precedent in Arkansas, Louisiana, North Dakota, Ohio, and Texas. We hope that you consider the Occupational Health Special Interest Group (OHSIG) as a primary resource to excel in services such as DOT Examinations that promote a healthy and safe work force. The OHSIG facilitates professional development, shares current information, identifies opportunities for collaboration among related organizations, and supports physical therapy professionals in occupational health practice and research initiatives.

*(Continued on page 166)*

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