

# An Overview of the Field of Occupational Medicine

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# Lecture Objectives

- A broad overview of the components that comprise the specialty and field of Occupational Medicine
- Provide relevant information regarding disability prevention and management



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# Occupational Medicine

- Falls within the field of Preventive Medicine
- Definition:  
Occupational is a specialty within the profession of preventive medicine that focuses on the diagnosis and treatment of work-related injuries and illnesses.



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# Occupational Medicine as a Specialty

- Certification in Occupational Medicine and Specialty training by ABPM and AOBPM

- ACOEM and AOCOPM



AMERICAN COLLEGE OF  
OCCUPATIONAL AND  
ENVIRONMENTAL MEDICINE



American Osteopathic College  
of Occupational & Preventive Medicine

- Most often practiced by Family Practice, Emergency Medicine or Internal Medicine Physicians
- Divisions of Occupational Medicine
  - Aerospace Medicine
  - Public Health
  - Occupational and Environmental Medicine
  - Disability Medicine
  - Correctional Medicine



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# Scope of Occupational Medicine

- Provider based clinical services
  - Injury treatment
  - Preventive assessments/ medical surveillance
- Ancillary services/ Drug testing
- Aid in regulatory compliance



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# Clinical Services

- Worker's Compensation Injury Care
  - Diagnosis, treatment and assessment of work capacity
- Clinical Examinations
  - Pre-placement
  - Return to work
  - Fitness for duty
  - Respirator clearance
  - Disability Examinations/ IME
  - Periodic Surveillance
  - DOT examination



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# Ancillary Services

- Pulmonary Function Testing
- Laboratory testing
- X-rays
- Tuberculin Skin Testing / IGRAs
- Physical abilities testing
- Drug testing and MRO services
- Audiometric testing
- Immunizations



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# Preventive Medicine

- Wellness/Health Promotion
  - Health Programs or Periodic assessment
    - Blood pressure and cholesterol screening
    - Counseling on preventive care and health maintenance
  - Individual counseling and education regarding recommendations of PPE (egs. respirators, protective eye wear, kevlar gloves, hearing protection etc.)
- Worksite Visit



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# Work-Site Visit

- Ergonomic evaluation of the work site
  - heavy lifting, repetitive motion, awkward positions
- Dermal exposures
- Respiratory exposures
- Use of PPE
- Chemical, physical, biologic hazards(MSDS)
- General safety - machine guards, safety showers, signs, trip hazards
- Health and medical services available



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# Aid in Regulatory Compliance

- OSHA
  - Respiratory protection programs
  - Hearing conservation programs
  - Surveillance for chemical and biologic hazards
  - NIOSH vs. OSHA
- ADA
- DOT medical clearance requirements
- CDC / Department of Health



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# Physical Examinations

- Pre-placement
  - Cleared to work job (able to safely perform essential duties)
  - Cleared to work job with accommodations/restrictions
  - Not cleared – work poses a danger to patient's health or health of others
  - Need more information to make a determination
- Return to Work
- Fitness for Duty
- Medical Surveillance
- DOT
- General Wellness Exam
- IME / Workability Exam/ Disability Examination



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# DOT Physical Exam

- Maryland law requires an employee to carry a DOT Medical Certificate if:
  - is used for commercial purposes; and
  - weighs more than 10,000 pounds.



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# DOT Medical Certificate



U.S. Department of Transportation  
Federal Motor Carrier  
Safety Administration

Including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Motor Carrier Safety Administration, MC-RRA, 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

## Medical Examiner's Certificate (for Commercial Driver Medical Certification)

I certify that I have examined **Last Name:** \_\_\_\_\_ **First Name:** \_\_\_\_\_ in accordance with (please check only one):

- the Federal Motor Carrier Safety Regulations (49 CFR 391.41-391.49) and, with knowledge of the driving duties, I find this person is qualified, and, if applicable, only when (check all that apply) **OR**
- the Federal Motor Carrier Safety Regulations (49 CFR 391.41-391.49) with any applicable State variances (which will only be valid for intrastate operations), and, with knowledge of the driving duties, I find this person is qualified, and, if applicable, only when (check all that apply):
- Wearing corrective lenses     Accompanied by a \_\_\_\_\_ waiver/exemption     Driving within an exempt intracity zone (49 CFR 391.62) (Federal)
- Wearing hearing aid     Accompanied by a Skill Performance Evaluation (SPE) Certificate     Qualified by operation of 49 CFR 391.64 (Federal)
- Grandfathered from State requirements (State)

The information I have provided regarding this physical examination is true and complete. A complete Medical Examination Report Form, MCSA-5875, with any attachments embodies my findings completely and correctly, and is on file in my office.

Medical Examiner's Certificate Expiration Date

Medical Examiner's Signature

Medical Examiner's Name (please print or type)

Medical Examiner's State License, Certificate, or Registration Number

Medical Examiner's Telephone Number

Date Certificate Signed

- MD     Physician Assistant     Advanced Practice Nurse  
 DO     Chiropractor     Other Practitioner (specify) \_\_\_\_\_

Issuing State

National Registry Number

Driver's Signature

Driver's License Number

Issuing State/Province

Driver's Address

CLP/CDL Applicant/Holder

Street Address: \_\_\_\_\_ City: \_\_\_\_\_ State/Province: \_\_\_\_\_ Zip Code: \_\_\_\_\_  Yes  No



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# DOT Physical

- 2 year certificate maximum
- Not cleared to drive CMV
  - Insulin requiring diabetic – a waiver does exist
  - Epilepsy (whether controlled or not, being on seizure medicine to prevent seizures is disqualifying.)
  - Any medication the examiner feels would pose a safety hazard (long acting opioids)
  - On methadone, Chantix or benzodiazepines
- One year certificate
  - HTN (even if controlled on medication)
  - Diabetes (non-insulin requiring)
  - Heart diseases
  - Chronic diseases that could pose a driving risk



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# Respirator Clearance

- OSHA mandates employers comply with the Respiratory Protection Standard (29 CFR 1910.134)
  - OSHA Questionnaire
  - Additional testing at providers discretion- PE, Spirometry, CXR, EKG
  - Documented clearance
  - Fit testing



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# Workers Compensation Injury Care

- No fault system
- Individual law varies by state
- Maryland – Employer cannot direct but can suggest / recommend



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# Workers Compensation Injury Care

- Large component of musculoskeletal injuries
- Exposures
  - Respiratory, body fluids, dermal, hearing
- Exacerbation / Aggravation of preexisting conditions



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# Occupational Medicine Approach

- Evidence based
- History, examination, treatment and assessment of physical capabilities (work restrictions)



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# Challenges in Workers Compensation Care

- Educating and counseling patients regarding their injuries
  - Can be difficult if not also PCP
  - Selling evidence based medicine to the patient
- Legal issues
- Issues of secondary gain
- Wounded worker syndrome
- Pre-existing conditions / work relatedness to injury



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# Workers Compensation Injury Care

- *Thorough* history - area of injury, mechanism of injury, job history, hobbies, past medical history, review of systems
- Good musculoskeletal exam with meticulous documentation
- Use of appropriate diagnostic testing
- Evidence based treatment plan with a focus on functionality
- Frequent follow up
- Patient education and expectations
- Knowledge of expected response to course of treatment and expected recovery times
- “Malingering testing” when appropriate - non-organic component



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# Assessing Work Capacity

- Do what is best for the patient
- Thorough physical exam focusing on objective measurements of functionality
- Follow recommendations in the evidence based literature
  - egs. bed rest > 2 days detrimental to recovery from low back injuries
  - walking beneficial for low back injuries
- Return to Work Guidelines
  - Official Disability Guidelines - Work Loss Data Institute, AAFP, AMA, ACP American Pain Society, ACOEM, British Occupational Medicine Guidelines, Agency for Health Care Policy and Research, NIOSH lifting limits



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# Assessing Physical Capacity

- Physical Exam
  - Evidence of functional limitations?
- Treatment Guidelines
  - Evidence based functional guidelines
- Physical Therapy Notes
- Functional Capacity Evaluations
  - Isernhagen, Matheson, Blankenship
- Second opinions, independent medical evaluations



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# Assessing Relationship of Work to the Injury

- Used evidence based approach
- Educate patients
  - anatomy, physiology, pathophysiology, treatment plan, prognosis
  - Egs. degenerative findings vs. acute tears in shoulder injuries
  - DDD not “caused” by the fall three weeks ago
  - The example of **Carpal Tunnel Syndrome**



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# Assessing Relationship of Injury to Work

- Carpal Tunnel Syndrome

- Risks for development:

- obesity, hypothyroidism, diabetes, age, wrist dimension, osteoarthritis, autoimmune disease, gout, pregnancy/pospartum
- 2001 Mayo Clinic Study - Heavy computer use not associated with CTS
- NIOSH - CTS not associated with general office work
- American Society for Surgery of the Hand - “current literature does not support a causal relationship between specific work activities and the development of diseases such as CTS.”



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# CTS as an Example of Assessing the Work Relatedness of an Injury

- Arthritis and Rheumatism - November 2007 - heavy keyboard use appears protective against development of CTS
- Meta-analysis studies show evidence of repetition and forceful movements (including forceful grip) of the wrist and development of CTS. Also association with vibration.
- Supreme Court Australia - *Cooper vs. Commonwealth of Australia* - ruled evidence does not support an occupational cause of “repetitive strain injury” aka CTS



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# CTS as an Example of Assessing the Work Relatedness of an Injury

- Peter Nathan, MD
  - hand surgeon treats CTS
  - numerous articles and studies on CTS including etiology
    - from studies on his patients he concludes 16% of CTS is related to work
- NIOSH extensive review of medical literature
  - diagnosis of occupational CTS based on symptoms alone is consistently poor and unreliable and CTS diagnosis should be confirmed with EMG/NCS
- Atroshi et al - JAMA 1992
  - 18 % asymptomatic subjects show abnormal NCV



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# CTS as an Example of Assessing the Work Relatedness of an Injury

- Establish diagnosis based on symptoms and CONFIRM diagnosis with EMG/NCS
- Establish high repetition in work place, vibration high handgrip (forceful movements)
- Evaluate for non occupational medical contributing factors
- Assess overall picture
- Evidence based treatment approach



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# Work Relatedness and Injuries

- The story of mold and the office building.....



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# Work Relatedness and Injuries

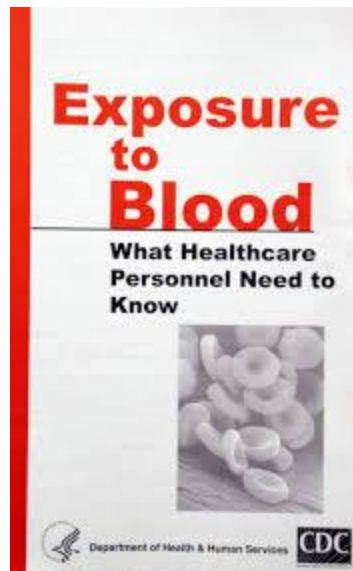
- Gots et al. in press, Shelton et al. 2002
  - For 85 homes with concentrations reported as total spore counts, the average ranged from 68 to 2,307 spores/m<sup>3</sup> for the indoor ambient air and a range of 400 to 80,000 spores/m<sup>3</sup> in outdoor ambient air.
  - Indoor mold carried in from outside
- ACOEM position statement: "Current scientific evidence does not support the proposition that human health has been adversely affected by inhaled mycotoxins in the home, school or office environments."



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# Evaluating and Treating Exposures to Body Fluids

- Blood borne pathogens: HIV, Hep B, Hep C
- Determine significant vs. non significant
  - Does not imply high or low risk, just whether transmission is possible based on the exposure
- Determine need for PEP / Offer or recommend PEP if appropriate



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# Exposure to Body Fluids

- The risk of becoming infected with HIV after an exposure to body fluids from an **HIV infected patient** is low
- A review of 23 studies of needlestick injuries to HCWs exposed to an HIV positive source patient:
  - 0.33 % transmission rate for a needlestick
  - 0.09 % exposure ( one in 1143) to mucosa
  - no exposures to intact skin in 2712 patients
- 58 cases of occupationally acquired HIV in US history with one case since 1999



# Exposure Body Fluids

- Determine significant or non significant
  - Intact skin - non significant
  - Sputum (Saliva) to eyes - non significant (unless visible blood)
  - Vomit - non significant
  - Urine – non significant (unless visible blood present)
  - Blood to intact skin - non significant
  - Needlestick with used needle - significant
- If non significant – STOP
- If significant follow CDC protocol



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# Other Workers' Compensation Injury Issues

- Animal / Human bites
- Toxic exposures
- Eye injuries
- Occupational asthma
- Treating hostile / difficult patients



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# Disability Prevention

- Impairment vs Disability
- Prevent unnecessary disability claims
  - Physical demand / physical ability mismatch
  - Physical work related risk factors
  - Psychosocial risk factors



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# Disability Prevention

- Impairment vs Disability



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# Disability Prevention

- Pre-placement / Pre-hire testing
  - Physical exam
    - Safely perform the essential duties of the job – identify safety issues
    - ADA accommodations
- Drug Testing



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# Disability Prevention

- Lift testing
- Physical ability/ capability testing



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# Disability Prevention

- Reduce Physical Risks
  - Ergonomics
  - PPE
  - Safe work practices



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# Disability Prevention

- USPSTF Psychosocial Risk Factors
  - disputed compensation claims
  - fear avoidance (fear activity will cause worsened damage)
  - job dissatisfaction - including poor rating by supervisor
  - pending or past litigation in relation to injury
  - underlying depression or anxiety
  - reliance on passive rather than active treatments
  - somatization
  - prior history of another disability

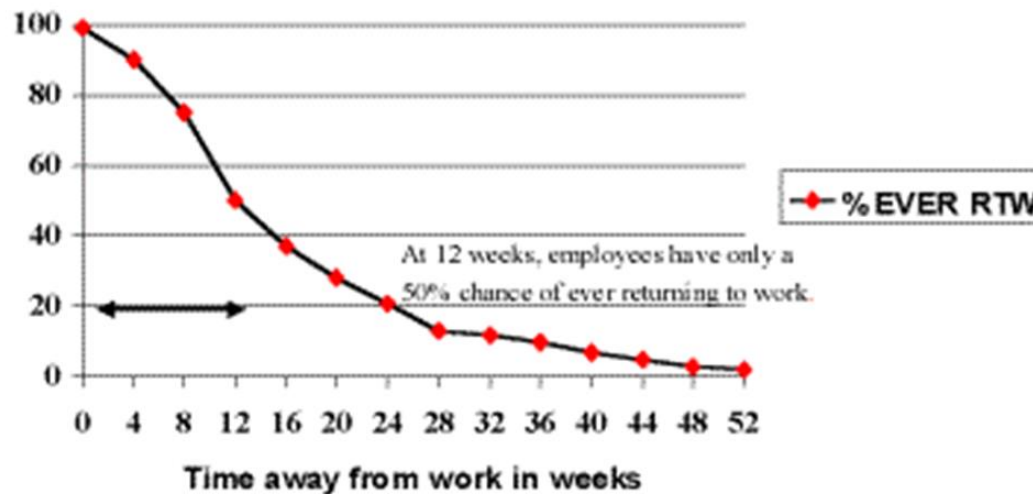


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# Disability Prevention

- Return to work/ Modified Duty

## Time Is Of The Essence



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# The End

*Thank You!*



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