Effective use of Physical Therapy and Occupational Therapy

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Outline

- What is PT and OT?
- Musculoskeletal (MSK) conditions appropriate for PT and OT
- Components of a prescription
- Utility of modalities (Thermotherapy, TENS)
- Prescriptions for specific MSK conditions
Physical Therapy

• PTs are experts who specialize in treatment and prevention of impairments and activity limitations related to movement, function, and health

• PTs receive extensive education in safe and appropriate application of modalities.
Physical Therapy

• Create individual treatment plans to match each person’s goals, helping people improve their fitness and function, avoid surgery, reduce the use of opioids and other drugs, and partner in their own care.

• Experts in the assessment of movement and can help individuals move better, often with less pain, through skilled manual therapy, therapeutic exercise and patient education.
Physical Therapy

• Common MSK conditions managed by PTs
  o Low back and neck pain
  o Rotator cuff injuries and shoulder problems
  o Osteoarthritis
  o Plantar fasciitis
  o Muscle strains
  o Joint sprains, pain, swelling
  o Chronic pain
  o Tennis or Golfer’s elbow
  o Carpal Tunnel Syndrome
Occupational Therapy

• OTs help people of all ages and abilities take part in what they want to do through the therapeutic use of everyday activities ("occupations")
  o Their effectiveness comes from using activities that are personally meaningful to each client during therapy to help the client meet their goals.
Occupational Therapy

• Common issues addressed by OTs
  o Help older adults safely stay as independent as possible.
  o Help people recover from an accident or injury, get back to doing what they want to do
    • Evaluations of home and other environments
    • Recommend adaptive equipment, training in equipment use
    • Task/activity modifications to facilitate participation
    • Guide and educate family and caregivers
Occupational Therapy

• Specific MSK issues
  o General rule...shoulder and below!
    • Shoulder (rotator cuff disease)
    • Elbow (Tennis or Golfer’s elbow)
    • Wrist (deQuervain tenosynovitis)
    • Hand (Osteoarthritis, trigger finger)
Components of a Prescription

• Diagnosis
• PT or OT
• Range of Motion
• Stretching
• Strengthening
• Frequency
• Duration
• Modalities
• Home exercise program**
• Precautions
I think my patient needs PT or OT

- First step is to establish goals and desired outcomes for your patient
  - Typically decrease pain and/or swelling
    - Swelling can increase perception of pain → pain can inhibit muscle activation → poor biomechanics
  - Improve range of motion
  - Improve mobility, gait and/or balance?
  - Increase strength
  - Promote independence
Modalities (Thermotherapy)

• Heat
  o Generally used for sub acute and chronic processes
  o Reduction of muscle spasms
  o Pain reduction (myofascial, low back, neck)
  o Reduction in joint stiffness, contractures
  o Arthritis, collagen vascular diseases
  o Chronic inflammation

• Examples include hot packs, Paraffin baths (superficial heat 1-2 cm depth) and Ultrasound (deep heat 3-5 cm depth)
Contraindications to heat therapy

• Ischemia—i.e., arterial insufficiency  
  o Heat increases metabolic requirement  
• Bleeding disorders (e.g., hemophilia) or hemorrhage  
  o There is an increased blood flow with heat  
• Impaired sensation  
  o central (e.g. stroke) or peripheral neuropathies may predispose individuals to burns  
• Inability to communicate or respond to pain (e.g. Dementia)  
• Malignancy  
  o may increase tumor growth and spread
Contraindications to heat therapy

- Acute trauma or inflammation
  - diffusion across membranes is increased
- Scar tissue
  - elevation of temperature increases the tissue’s metabolic demand. Scar tissue has inadequate vascular supply and is unable to provide an adequate vascular response when heated, which can lead to ischemic necrosis
- Edema
  - diffusion across membranes is increased.
- Atrophic skin
- Poor thermal regulation

Modalities (Thermotherapy)

- Cold
  - Generally used for acute process
  - Acute or chronic myofascial pain
  - MSK conditions and articular inflammatory states—arthritis, bursitis, muscle sprains
Contraindications to cold therapy

• Cold intolerance or hypersensitivity to cold (Raynaud’s disease/phenomenon)
• Arterial insufficiency
  o areas with circulatory compromise, such as ischemic areas in patients with peripheral vascular disease affecting the arterial system
• Impaired sensation
  o insensate skin is at risk for burns
• Cognitive and communication deficits that preclude the patient from reporting pain
• Cryopathies: cryoglobulinemia, paroxysmal cold hemoglobinuria
Thermotherapy in a nutshell

• Heat vs. cold?
  • If pain is the primary complaint, COLD
  • If stiffness is the primary complaint, HEAT
    o Also appropriate once out of the acute inflammatory phase
  • Acute issues should be treated with COLD
  • When in doubt, use COLD
Transcutaneous Nerve Stimulation (TENS)

- A pocket-size programmable device to apply an electrical signal through lead wires and electrodes attached to the patient’s skin
- It stimulates nerve fibers for the symptomatic relief of pain (block pain signals at level of the spinal cord, release endogenous opioids)
Dx: Rotator cuff disease

- Physical Therapy (OTs will also work on shoulders)
- Reestablish glenohumeral and scapulothoracic range of motion (pendulum, wall walking)
- Stretching: posterior capsule
- Strengthening: rotator cuff (supraspinatus), scapular stabilizers (rhomboids, lavator scapulae, trapezius, serratus anterior)
- Postural education (prevent kyphosis and protraction of shoulders), chin-tucks, educate HEP
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions: patient specific, pain limited

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Dx: Adhesive Capsulitis (frozen shoulder)

- Physical Therapy (or OT)
- **Restoration of range of motion is primary focus!** (pendulum, overhead arm stretch, posterior shoulder stretch)
- Strengthening: rotator cuff (supraspinatus), scapular stabilizers (rhomboids, lavator scapulae, trapezius, serratus anterior) once range improves
- Postural education, chin-tucks, educate HEP
- Modalities: Ultrasound, trial of TENS
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions
Dx: Tennis elbow

- Physical or Occupational Therapy
- Stretching: common wrist extensors
- Strengthening: common wrist extensors, advance from static to progressive resistive exercises
- Patient education, HEP
- Modalities: Ultrasound, TENS, or Ice massage
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions
Dx: Neck pain

- Physical Therapy
- Improve range of motion of cervical spine
- Stretching: upper trapezius, scalenes, sternocleidomastoid, latissimus dorsi, pectoralis major and minor.
- Strengthening: Scapular stabilizers (middle/lower trapezius, serratus anterior, levator scapulae)
- Postural education, HEP
- Modalities: Heat, trial of TENS
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions
Dx: Neck pain

- Consider referral to OT
- Ergonomic evaluation of home or work environment
  - telephone head set, document holders
**Dx: Mechanical Low back pain**

- Physical Therapy
- Improve range of motion of lumbar spine
- Stretching: hip flexor/extensors (hamstrings/quadis), hip abductors (gluteus medius/piriformis), gastrocnemius
- Strengthening: core muscles (Transversus Abdominis), paraspinals (multifidi), hip abductors
- Postural education, HEP
- Modalities: Heat, trial of TENS
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions
Dx: Knee Osteoarthritis

- Physical Therapy
- Improve ROM
- **Strengthening: Quadriceps** (primary stabilizer of the knee joint) static to dynamic exercises
- Postural alignment and joint positioning techniques
- HEP
- Modalities: Heat or ice
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions: avoid hyperflexion in presence of effusion
Dx: Patellofemoral Pain Syndrome

- Physical Therapy
- Stretching: Iliotibial Band (ITB)
- Strengthening: Vastus Medialis Obliquus (VMO) - last 30 degrees of knee extension, Quadriceps
- HEP
- Modalities: Ice
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions
Dx: Plantar Fasciitis

- Physical Therapy
- Stretching: plantar fascia, gastrocnemius-soleus complex, hamstrings, quadriceps, gluteal muscles
- Strengthening: foot intrinsics (towel exercise)
- HEP
- Modalities: Ultrasound
- Frequency: 2 x weekly
- Duration: 10 sessions
- Precautions
Dx: Trigger finger

- Occupational Therapy
- Supervised therapy may not be needed. However, may benefit from splinting
  - One OT session for splinting
- Loss of significant function, ROM, or strength warrants supervised therapy
Dx: Trigger finger

• Occupational Therapy
• Improve ROM
• Strength: hand intrinsics
• Educate on HEP, tendon gliding techniques
• Modalities: Ice or Heat (Ultrasound)
• Frequency: 2 x weekly
• Duration: 2-10 sessions
• Precautions: patient specific
Dx: deQuervain Tenosynovitis

- Occupational Therapy
- Supervised therapy may not be needed, unless there is loss of significant function, ROM, or strength.
  - Prescription for Thumb spica splint
Take Home Points

• PT and OT can improve pain and function for your patients suffering from musculoskeletal conditions
• It is important to establish goals and desired outcomes for your patient
• PT and OT prescriptions have components
  o It is helpful to be specific (e.g. muscle groups to target)
  o Remember patients should be transitioned to HEP
  o Modalities can be useful, can include in your prescription
  o Remember your precautions!
Thank You!