



Overview

Session 1 – Low Back

- Day One:** Pelvic Girdle / Clinical Reasoning using the ICF
- Day Two:** Lumbar Spine / Low Back Examination - demystified
- Day Three:** Lumbopelvic Region / Low Back Pain - diagnosis and management

Session 2 – Hip, Knee, Ankle and Foot

- Day Four:** Buttock & Hip / Observational Gait Analysis
- Day Five:** Thigh & Knee / Integrating Manual Therapy and Movement
- Day Six:** Leg, Ankle & Foot / Lower Quarter Gait Biomechanics

Session 3 – Head, Neck, and Mid Back

- Day Seven:** Thoracic Spine & Ribs / Management of Mobility Deficits
- Day Eight:** Thoracic & Cervical Spine / Neck Pain - diagnosis and management
- Day Nine:** Cervical Spine / Manual Therapy and Exercise for Cervicogenic Headache

Session 4 – Shoulder, Elbow, Wrist and Hand

- Day Ten:** Shoulder Girdle / Shoulder Pain - diagnosis and management
- Day Eleven:** Shoulder / Management of Movement Coordination Impairments
- Day Twelve:** Elbow, Forearm, Wrist, and Hand / Counseling Strategies to Enhance Self-efficacy

2023 AOPT Seminar Series - Information

Seminar Content Outline

The objective of the content of this seminar series is to train the participants in the skills required to implement the Academy of Orthopaedic Physical Therapy's (AOPT) Clinical Practice Guidelines at a high level. In essence, it will be 12 days of fast-paced, high-level skill-building.

Pre-Seminar Knowledge and Preparation Suggestion

PhysioU, an AOPT Vendor Partner, has collaborated with the AOPT to create a learning management system containing interactive learning modules, integrated digital decision trees, procedure videos, and handouts derived from the AOPT's Clinical Practice Guidelines for Common Musculoskeletal Conditions. This LMS and PhysioU's Ortho PT-related apps – “Orthopaedics,” “Exercise Patterns,” and “Orthopaedic Simulations” – provide extensive knowledge on CPG implementation strategies. For each day in the attached Seminar Content Outline, the "Knowledge to Review/Acquire Prior to Class" provides the LMS and App material to review. These materials include CPG Interactive Learning Modules, with multiple test items embedded in the modules. The instructors of this CPG Seminar Series will expect every seminar participant to complete the learning module on the CPGs covered in class on that day - before arriving at class. Acquiring the knowledge of the CPGs in the module will enable the seminar instructors to focus class time on the psychomotor, coaching, communication, and clinical reasoning skills required to implement the CPGs at a high level – and empower the participants to spend time practicing skills, with feedback from the instructor when appropriate, rather than using class time acquiring knowledge content than can be obtained via digital resources. In addition, the PhysioU/AOPT LMS also has integrative decision trees, handouts summarizing the seminar content, and videos of the procedures covered in the seminars, which can serve the participants as post-seminar recall and skill-enhancing tools.

Day One: Pelvic Girdle / Clinical Reasoning using the ICF

Content Summary

- Role of the International Classification of Functioning in clinical reasoning
- Pelvic girdle anatomy and evidence as it relates to examination and treatment
- Movement analysis and reeducation for standing and sitting-related activities
- Pelvic girdle clinical findings interpretation
- Manual innominate and sacroiliac treatment procedures
- Lumbopelvic and hip region exercises associated with movement reeducation and manual therapy

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Module: Low Back Pain with Movement Coordination Impairments
2. CPG-related Procedure Options – Low Back Labs – Handout & Videos 5.1, 5.2, and 5.3
3. PhysioU app – Orthopaedics: Lumbar instabilities
4. PhysioU app – Exercise Patterns: Back pain with coordination deficits
Trunk & Hip/buttock abduction, external rotation, & extension strengthening exercises

Selected References

Hartvigsen J, Hancock MJ, Kongsted A, Louw Q, Ferreira ML, Genevay S, Hoy D, Karppinen J, Pransky G, Sieper J, Smeets RJ. What low back pain is and why we need to pay attention. *The Lancet*. 2018;391:2356-67.

Buchbinder R, van Tulder M, Oberg B, Costa LM, Woolf A, Schoene M, Croft P, on behalf of the Lancet Low Back Pain Series Working Group. Low Back Pain: a call for action. *The Lancet*. 2018;391:2384-88.

Foster NE, Anema JR, Cherkin D, Chou R, Cohen SP, Gross DP, Ferreira PH, Fritz JM, Koes BW. Low back pain 2 Prevention and treatment of low back pain: evidence, challenges, and promising directions. *The Lancet*. 2018;391:2368-83.

Godges JJ, Varnum DR, Sanders KM. Impairment-based examination and disability management of an elderly woman with sacroiliac region pain. *Phys Ther*. 2002;82:812-821.

Procedure Focus

Movement Analysis & Reeducation

- Standing Sagittal Plane - Superior/Inferior - Pelvic Symmetry
- Standing Sagittal Plane - Anterior/Posterior - Pelvic Symmetry
- Lateral Pelvic Movements - sitting weight shift

Examination Procedures

- March Test – Posterior and Anterior Rotation of the Innominate
- PSIS/ASIS Palpation for Symmetry
- Sacroiliac Ligament Provocation
 - Long Posterior Sacroiliac Ligament
 - Short Posterior Sacroiliac Ligament
 - Sacrotuberous Ligament

Manual Therapy

- Innominate Inferior Translation Manipulation
- Sagittal Plane Isometric Mobilization
 - Innominate Isometric Mobilization (using hip flexors/extensors)
 - Innominate Isometric Mobilization (using hip adductors/extensors)
- Posterior Innominate Rotation
- Anterior Innominate Rotation

Exercise Training

- Sagittal Plane Innominate Self-correction
- Lateral Abdominal / Hip Abductor Strengthening and Coordination Training
- Thoracolumbar Fascia and Iliacus Stretching
- Lumbar Extension and Psoas Stretching
- Trunk Flexor/Abdominal and Hip Extensor Strengthening and Coordination Training

Day Two: Lumbar Spine / Low Back Examination - demystified

Content Summary

- Review and refine movement analysis, manual procedures, and exercise training practiced on day one
- Lumbar spine anatomy and as it relates to segmental mobility examination and treatment
- Movement analysis and reeducation for bending-related activities
- Interpret low back clinical findings consistent with the ICF-based clinical guidelines
- Lumbar spine segmental mobility examination and manipulative procedures
- Low back, trunk and pelvic region exercises associated with the diagnostic classifications

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Module: Low Back Pain with Mobility Deficits
2. CPG-related Procedure Options – Low Back Labs – Handout & Videos 5.6 and 5.7
3. PhysioU app – Orthopaedics: Lumbar degenerative joint disease / facet syndrome
4. PhysioU app – Exercise Patterns: Back mobility exercise; Hip extension exercises

Selected References

Delitto A, Erhard RE, Bowling RW. A treatment-based classification approach to low back syndrome: identifying and staging patients for conservative treatment. *Phys Ther.* 1995;75(6):470-485

Delitto A, George SZ, Van Dillen L, Whitman JM, Sowa G, Shekelle P, Denninger TR, Godges JJ. Low back pain: a clinical practice guideline linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2012;42(4): A1-A57

George SZ, Fritz JM, Silfies SP, Schneider M, Beneciuk JM, Lentz TA, Gilliam JR, Norman KS. Interventions for the Management of Acute and Chronic Low Back Pain: Revision 2021. Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability and Health From the Academy of Orthopaedic Physical Therapy of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2021;51(11):CPG1-CPG60.

Godges JJ, Norman KS, George SZ, Fritz JM, Silfies SP, Schneider M, Beneciuk JM, Lentz TA, Gilliam JR. Low back pain decision tree. *Orthopaedic Practice.* 2022;34:262-267.

Procedure Focus

Movement Analysis

- Standing Transverse Plane - Internal Rotation/External Rotation - Pelvis & Hip Symmetry
- Lumbar Sidebending Movement / Pain Relationships
- Lumbar Spine, Pelvic Girdle, and Lower Extremity Coordination with Bending Movements

Examination Procedures

- Transverse Plane Examination (ASIS Compression/Distractioin)
- Hip Rotational Mobility Examination
- Lumbar Sidebending and Quadrant Overpressures
- Unilateral PAs
- Transverse Process Assessment in Flexion & Extension

Manual Therapy

- Soft Tissue Mobilization and Contract/Relax Stretching
 - Posterior Gluteus Medius Myofascia
 - Multifidi/Segmental Myofascia
- Spinal Mobilization/Manipulation
 - Lumbopelvic Region Manipulation
 - Lumbar Sidebending/Rotation in Neutral
 - Lumbar Sidebending/Rotation in Extension

Exercise Training

- Transverse Plane Innominate Self-correction
- Hip Internal Rotation Stretching
- Hip External Rotation / Piriformis Stretching
- Lumbar Rotation Self-Mobilization

Day Three: Lumbar Manipulation / Low Back Pain - diagnosis and management

Content Summary

- Review and refine movement analysis and manual procedures practiced on day two
- Lumbar spine anatomy and evidence as it relates to disc and nerve related disorders
- Review/integrate trunk/pelvis/hip movement analysis and reeducation for functional activities
- Discussion on somatic, referred, and radicular low back pain
- Refinement of lumbar manipulative procedures
- Identification of risk for low back-related long-term chronic pain and disability

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Modules: Low Back Pain w/ Related (Referred) Lower Extremity Pain
Low Back Pain with Radiating Pain
2. CPG-related Procedure Options – Low Back Labs – Handout & Videos 5.5 and 5.8
3. PhysioU app – Orthopaedics: Lumbar disc disorder with lower extremity referred pain
Sciatica
4. PhysioU app – Exercise Patterns:
Back pain with related leg pain – Lateral shift & LB Extension exercises
Back pain with radiating pain – Back, hamstring, & nerve mobility ex's, Hip ER/Piriformis stretching

Selected References

George SZ. Characteristics of patients with lower extremity symptoms treated with slump stretching: a case series. *J Ortho Sports Phys Ther.* 2002;32:391-398.

O'Neill CW, Kurgansky ME, Derby R, Ryan DP. Disc stimulation and patterns of referred pain. *Spine.* 2002;27:2776-81.

Procedure Focus

Movement Analysis - Motor Control, Strength, & Endurance

Trunk Flexors/Abdominals

Trunk Sidebenders/Lateral Abdominals

Trunk Extensors/Erector Spinae

Trunk Rotators/Multifidi-Transverse Abdominis-Internal/External Obliques

Examination Procedures

Repeated Movements Examination

Sciatic Nerve Tension Testing

Lower Quarter Neurological Status Exam

Slump Test

Manual Therapy

Soft Tissue Mobilization

Thoracolumbar Fascia

Multifidi/Segmental Myofascia

Psoas

Spinal Mobilization/Manipulation

Lateral Shift Correction

Lumbopelvic Region Manipulation

Lumbar Sidebending/Rotation in Neutral

Lumbar Sidebending/Rotation in Extension

Lumbar Sidebending/Rotation in Flexion

PAs in Combined Movements - Extension

PAs in Combined Movements - Flexion

Exercise Training

Trunk Motor Control, Strength, and Endurance Training

Day Four: Buttock & Hip / Observational Gait Analysis

Content Summary

- Movement analysis and reeducation of walking
- Hip anatomy and evidence as it relates to examination and treatment
- Interpret hip clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy for hip mobility deficits
- Therapeutic exercises for hip movement coordination impairments and mobility deficits

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Modules: Non-Arthritic Hip Joint Pain
Hip Pain and Mobility Deficits/Hip Osteoarthritis
2. CPG-related Procedure Options – Hip Labs – Handout & Videos 6.2, 6.3, and 6.4
3. PhysioU app – Orthopaedics: Labral tear
Hip osteoarthritis
4. PhysioU app – Exercise Patterns:
Hip osteoarthritis – Hip stretching exercises
Thigh muscle strain & Hip pain with radiating pain – Hamstring and sciatic nerve mobility

Selected References

Cibulka MT, White DM, Woehrle J, Harris-Hayes M, Enseki K, Fagerson TL, Slover J, Godges JJ. Hip pain and mobility deficits - hip osteoarthritis: a clinical practice guideline linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2009;39(4): A1-A25
and 2017 Hip Osteoarthritis Clinical Practice Guideline Revision - *J Orthop Sports Phys Ther* 2017;47(6):A1-A37

Enseki K, Harris-Hayes M, White DM, Cibulka MT, Woehrle J, Fagerson TL, Clohisy JC. Nonarthritic hip joint pain: a clinical practice guideline linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2014;44 (4):A1-A32

Martin RL, Cibulka MT, Bolgla LA, Koc Jr TA, Loudon JK, Manske RC, Weiss L, Christoforetti JJ, Heiderscheit BC, Voight M, DeWitt J. Hamstring Strain Injury in Athletes: Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability and Health From the Academy of Orthopaedic Physical Therapy and the American Academy of Sports Physical Therapy of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2022;52(3):CPG1-44.

Procedure Focus

Movement Analysis

Walking - with a focus on spine inter-regional relations

Examination Procedures

Piriformis Stretch Test and Palpation/Provocation

Mobility and Muscle Flexibility: Hip Flexion
 Hip Internal Rotation
 Hip External Rotation
 Hip Abduction
 Hip Extension

Lower Limb Nerve Mobility

Resistive and Stretch Tests: Lateral Hamstring
 Medial Hamstrings
 Hip Adductors
 Rectus Femoris

Manual Therapy

Soft Tissue Mobilization and Contract/Relax Stretching:

 Piriformis, Gluteus Maximus & Medius, and the other Hip External Rotators

Joint Mobilization:

 Hip Flexion Mobilization with Movement
 Hip Internal Rotation Mobilization with Movement
 Femoral Anterior Glides

Exercise Training

 Hamstring/Sciatic Nerve Mobility Exercises
 Hip Stretching (Extension, Flexion, External Rotation, Internal Rotation)
 Buttock and Thigh Motor Control, Strength and Endurance Training

Day Five: Thigh & Knee / Integrating Manual Therapy and Movement

Content Summary

- Review and refine movement analysis and manual procedures practiced on day five
- Knee anatomy and evidence as it relates to examination and treatment
- Interpret knee clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy for knee mobility deficits
- Therapeutic exercises for knee movement coordination impairments and mobility deficits
- Interviewing skills related to effective vs ineffective attending and open inquiry skills

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Modules: Knee Ligament Sprain and Knee Injury Prevention
Knee Meniscal/Cartilage Lesions / Knee Pain and Mobility Impairments
Patellofemoral Pain
2. CPG-related Procedure Options – Knee Labs – Handout & Videos 7.2, 7.3, and 7.4
3. PhysioU app – Orthopaedics: Knee instability/coordination deficits/Knee ligament sprain
Knee pain and mobility deficits/Knee meniscal-cartilage lesions
Anterior knee pain/Patellofemoral pain
Knee pain and mobility deficits/Knee meniscal-cartilage lesions
Knee osteoarthritis/Knee stiffness-mobility deficits
4. PhysioU app – Exercise Patterns: Knee osteoarthritis – Knee stretching exercises
Anterior knee pain – Quadriceps strengthening exercises
Performance – Injury prevention

References

Deyle GD, Henderson NE, Matekel RL, Ryder MG, Garber MG, Allison SC. Effectiveness of manual therapy and exercise in osteoarthritis of the knee. *Ann Intern Med.* 2000;134:173-181.

Logerstedt DS, Snyder-Mackler L, Ritter RC, Axe MJ, Godges JJ. Knee stability and movement coordination impairments: knee ligament sprain - clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther* 2010;40(4):A1-A37
and 2017 Revision - Knee Stability and Movement Coordination Impairments: Knee Ligament Sprain - *J Orthop Sports Phys Ther.* 2017;47(11):A1-A47

Logerstedt DS, Snyder-Mackler L, Ritter RC, Axe MJ. Knee pain and mobility impairments: meniscal and articular cartilage lesions - clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther* 2010;40(6):A1-A35
and 2018 Revision – Knee Pain and Mobility Impairments: Meniscal and Articular Cartilage Lesions - *J Orthop Sports Phys Ther.* 2018;48(2):A1-A50

Arundale AJH, Bizzini M, Giordano A, Hewett TE, Logerstedt DS, Mandelbaum B, Scalzitti DA, Silvers-Granelli H, Snyder-Mackler L. Exercise-based knee and anterior cruciate ligament injury prevention lesions - clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Academy of Orthopaedic Physical Therapy and the Academy of Sports Physical Therapy of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2018;44(6):A1-A42.

Willy RW, Hogle LT, Barton CJ, Bolgla LA, Scalzitti DA, Logerstedt DS, Lynch AD, Snyder-Mackler L, McDonough CM. Patellofemoral pain: clinical practice guidelines linked to the international classification of functioning, disability and health from the academy of orthopaedic physical therapy of the American physical therapy association. *J Orthop Sports Phys Ther.* 2019;49:CPG1-95.

Procedures List

Movement Analysis

Single Leg Squat - with a focus on trunk/hip/thigh and leg/foot strength & motor control

Examination Procedures

Knee Special Tests: Varus/Valgus, Lachman's, McMurray's

Knee Extension ROM Exam: (Terminal Extension & Anterior Glides)

Knee Flexion ROM Exam: (Hyperflexion & Posterior Glides)

Patellofemoral / Lower Extremity Static and Dynamic Alignment

Patellar Medial/Lateral Glides

Iliotibial Band Assessment (Length Tests & Palpation/Provocation)

Proximal Tibiofibular Accessory Movement Exam

Fibular (Peroneal) Nerve Mobility Exam: (Tension Tests and Entrapment Provocation)

Palpation/Provocation: Medial Joint Line, Pes Anserine, Patellar Tendon

Manual Therapy

Soft Tissue Mobilization

Lateral Thigh/Iliotibial Band

Lateral Retinaculum

Lateral Leg Nerve Entrapment Sites

Joint Mobilization

Patella Medial Glides

Tibiofemoral Extension

Tibial Anterior Glide

Knee Flexion Mobilization with Movement

Fibular Posterior/Medial Glide

Fibular Anterior/Lateral Glide

Exercise Training

Knee Mobility and Stretching

Quadriceps Activation and Strength Training

ACL and Knee Injury Prevention

Day Six: Leg & Ankle / Lower Quarter Gait Biomechanics

Content Summary

- Clinical reasoning principles promoting reflective clinical practice accelerated skill acquisition
- Analysis of leg, ankle and foot functioning with pre-gait and gait activities
- Calf, ankle, and foot anatomy and evidence as it relates to examination and treatment
- Interpret leg, ankle, and foot clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy and movement training for calf, ankle, heel, and foot mobility and coordination impairments
- Therapeutic exercises and reeducation for normalizing lower extremity shock absorption and gait mechanics

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Modules:
 - Achilles Tendinitis / Achilles Pain, Stiffness, and Power Deficits
 - Ankle Ligament Sprain / Ankle Stability/Coordination Deficits
 - Heel Pain / Plantar Fasciitis
2. CPG-related Procedure Options – Ankle and Foot Labs – Handout & Videos 8.2, 8.3, 8.4, and 8.5
3. PhysioU app – Orthopaedics:
 - Achilles tendinitis/Muscle power deficits
 - Ankle sprain and High Ankle Sprain/Ankle stability and movement coordination impairments
 - Anterior knee pain/Patellofemoral pain
 - Plantar fasciitis/Heel Pain
4. PhysioU app – Exercise Patterns:
 - Achilles pain, stiffness, and power deficits/Achilles Tendinitis – Calf strengthening exercises
 - Ankle coordination deficits/Sprain and Heel Pain/Plantar fasciitis – Calf stretching exercises
 - Performance progression – Lower extremity

Selected References

Martin RL, Davenport TE, Paulseth S, Wukich DK, Godges JJ. Ankle stability and movement coordination impairments: ankle ligament sprains - clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2013;43(9):A1-A40

Carcia CR, Martin RL, Houck J, Wukich DK. Achilles pain, stiffness, and muscle power deficits: Achilles tendinitis - clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2013;40(9):A1-A26
and 2018 Revision – Achilles Pain, Stiffness, and Muscle Power Deficits: Midportion Achilles Tendinopathy - *J Orthop Sports Phys Ther* 2018;48(5):A1-A38

Martin RL, Davenport TE, Reischl, SF, McPoil TG, Matheson JW, Wukich DK, McDonough CM. Heel Pain / Plantar Fasciitis: Revision 2014 - a clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2014;44(11):A1-A23.

Procedure Focus

Movement Analysis and Reeducation

Talocrural, Talocalcaneal, Talonavicular, Calcaneocuboid, and 1st MTP functioning during Initial Contact, Loading Response, Mid-Stance, Terminal Stance, and Pre-Swing
Foot Function with:
Tibial Internal and External Rotation; 1/4 Squat; Heel Raise

Examination Procedures

Anterior Talofibular Ligament Palpation/Provocation
Inversion Stress Test (Talar Tilt)
Anterior Drawer Test
Ankle Sprain MWM
Lower Limb Nerve Tension Tests (biasing tibial, sural, fibular nerves at the ankle)
Nerve Entrapment Site Provocation
Calcaneal Position and Eversion ROM
Mid-Tarsal Accessory Movement Tests
1st MTP Extension ROM and Tarsophalangeal Accessory Movements

Manual Therapy

Soft Tissue Mobilization to Leg and Ankle Nerve Entrapment Sites
Distal Fibular Posterior Glide
Distal Tibiofibular Mobilization with Movement
Ankle Dorsiflexion Mobilization with Movement
Talar Posterior Glide
Talar Posterior Glide Mobilization with Movement
Ankle Plantar Flexion Mobilization with Movement
Talar Anterior Glide
Calcaneal Lateral Glides
Navicular Dorsal and Plantar Glides
Cuboid Dorsal and Plantar Glides
1st MTP Dorsal Glides
1st MTP Mobilization with Movement

Day Seven: Thoracic Spine & Ribs / Management of Mobility Deficits

Content Summary

- Thoracic spine and ribs anatomy as it relates to trunk and neck movements
- Analysis of thorax/ribcage movements in relation to respiration and upper quarter functioning
- Manual therapy to address thoracic spine and ribs mobility impairments
- Therapeutic exercises for thoracic spine, rib, and neck mobility impairments
- Clinical decision making related to connective tissue healing, myofascia shortening, muscle imbalances, and pain

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Modules: Neck Pain with Mobility Deficits
Neck Pain with Movement Coordination Impairments
2. CPG-related Procedure Options – Thorax and Neck Labs – Handout & Videos 1.1, 1.2, 1.3, 1.4, 1.5, & 1.6
3. PhysioU app – Orthopaedics:
 - Entrapment/Adhesion of dura – Thoracic radiating pain
 - Thoracic kyphosis/Mid back pain with mobility deficits
 - Rib sprain/Mid back and thoracic cage pain with spinal and respiratory movement coordination impairments
 - Cervical sprain/sprain – Neck pain with movement coordination impairments
4. PhysioU app – Exercise Patterns:
 - Mid back & Rib pain with mobility deficits – Thoracic spine stiffness
 - Neck sprain/whiplash – Thorax mobility, Chest stretching, Upper back strengthening

Selected References

Childs JD, Cleland JA, Elliott JM, Teyhen DS, Wainner RS, Whitman JM, Sopky BJ, Godges JJ, Flynn TW. Neck pain: a clinical practice guideline linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2008;38(10): A1-A39
And – 2017 Neck Pain Clinical Practice Guideline Revision - *J Orthop Sports Phys Ther* 2017;47(7):A1-A83.

Cleland JA, Childs JD, Palmer JA, Eberhart S. Slump stretching in the management of non-radicular low back pain: a pilot clinical trial. *Man Ther.* 2006;11:279-286

Procedure Focus

Movement Analysis

- Neck rotation
- Thorax rotation
- Thoracic spine and ribs movement/pain relations
- Slump and long-sit slump mobility and movement/pain relations

Manual Therapy - Upper Thoracic Spine and Ribs:

- Transverse Process Symmetry in Flexion/Extension
- Contract/Relax of Extensors and Sidebenders
- Unilateral PAs (superior/anterior glides using transverse processes)
- Rotation in Neutral (supine - unilateral PA mob/manip)
- Rotation in Neutral (prone - using adjacent spinous processes)
- Rotation in Neutral (prone - neutral gap)
- Contract/Relax of Segmental Flexors and Sidebenders
- Rotation/Sidebending in Extension
- Scaleni Soft Tissue Mobilization
- 1st Rib Inferior Glide

Manual Therapy - Mid Thoracic Spine and Ribs:

- Transverse Process Symmetry in Flexion/Extension
- Unilateral PAs
- Rib Positional Symmetry
- Rib AP Pressures
- Rib PA Pressures
- Contract/Relax of Segmental Extensors and Sidebenders
- Rotation/Sidebending in Flexion
- Contract/Relax of Segmental Flexors and Sidebenders
- Rotation/Sidebending in Extension
- Rib Posterior Glide with Isometric Mobilization
- Rib Anterior Glide with Isometric Mobilization

Exercise Training

- Back and Ribs Self-Mobilizations
- Thoracolumbar Rotation Stretching
- Dural / Slump Movements
- Upper Back Strengthening

Day Eight: Thoracic & Cervical Spine / Neck Pain - diagnosis and management

Content Summary

- Review and refine movement analysis and manual procedures practiced on day seven
- Interpret head and neck clinical findings consistent with the ICF-based clinical guidelines
- Cervical anatomy and biomechanics as it relates to neck movements and neck pain
- Manual therapy to address mid-cervical segmental mobility impairments
- Therapeutic exercises for neck movement coordination impairments and mobility deficits

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Modules: Neck Pain with Radiating Pain
Neck Pain with Headaches
2. CPG-related Procedure Options – Neck Labs – Handout & Videos 2.1, 2.2, and 2.3
3. PhysioU app – Orthopaedics:
Neck stiffness/Spondylosis/Facet syndrome – Neck pain with mobility deficits
Cervical radiculopathy/Neck pain with radiating pain
Cervicogenic headache/Neck pain with headache
4. PhysioU app – Exercise Patterns:
Neck pain with mobility deficits – Neck mobility and stretching exercises
Neck sprain/whiplash – Neck strengthening exercises
Neck pain with radiating pain – Upper limb nerve mobility exercises

Selected Reference

Puentedura EJ, Cleland JA, Landers MR, Mintken P, Louw A, Fernández-De-Las-Peñas C. Development of a clinical prediction rule to identify patients with neck pain likely to benefit from thrust joint manipulation to the cervical spine. *J Orthop Sports Phys Ther* 2012;42:577-592

Procedure Focus

Movement Analysis

- Neck and shoulder girdle positional symmetry with daily activities
- Mid cervical mobility and movement/pain relations

Examination Procedures

- Extension, Sidebending, and Rotation to the Same Side
- Upper Quarter Neurological Status Exam
- Accessory Movement Tests – Anterior/Superior Glide
- Accessory Movement Tests – Segmental Sidebending

Manual Therapy

- Posterior Cervical Myofascia Soft Tissue Mobilization
- Cervical NAG
- Cervical SNAG
- Cervical Superior/Anterior Glide
- Cervical Rotation in Neutral
- Cervical Posterior/Inferior Glide
- Contract/Relax of Extensors/Sidebenders
- Contract/Relax Flexors/Sidebenders
- Cervical Sidebending in Neutral

Exercise Training

- Neck Mobility Training
- Neck Stretching
- Neck Strengthening Progressions
- Upper Limb Nerve Mobility Exercises

Day Nine: Cervical Spine / Manual Therapy and Exercise for Cervicogenic Headache

Content Summary

- Review and refine movement analysis and manual procedures practiced on day seven and eight
- Upper cervical spine anatomy and mechanics as it relates to head and neck movements and pain
- Interpret head and neck clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy to address upper cervical mobility impairments
- Therapeutic exercises for head and neck movement coordination impairments and mobility deficits

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Module: Concussion & Mild Traumatic Brain Injury
2. CPG-related Procedure Options – Neck Labs – Handout & Videos 2.4, 2.5, and 2.6

Selected References

Jull G, Trott P, Potter H, Zito G, Niere K, Shirley D, Emberson J, Marschner I, Richardson C. A randomized controlled trial of exercise and manipulative therapy for cervicogenic headache. *Spine*. 2002;27:1835-1843.

Quatman-Yates CC, Hunter-Giordano A, Shimamura KK, Landel R, Alsalaheen BA, Hanke TA, McCulloch KL. Physical Therapy Evaluation and Treatment After Concussion/Mild Traumatic Brain Injury: Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability and Health From the Academy of Orthopaedic Physical Therapy, American Academy of Sports Physical Therapy, Academy of Neurologic Physical Therapy, and Academy of Pediatric Physical Therapy of the American Physical Therapy Association. *J Orthop Sports Phys Ther*. 2020;50(4):CPG1-73.

Procedure Focus

Movement Analysis

- Head and neck positional symmetry with daily activities
- Upper cervical mobility and movement/pain relations

Manual Therapy

- Vertebrobasilar Insufficiency Evaluation
- Alar Ligament Integrity Test
- Sharp-Purser Ligament Integrity Test
- Suboccipital Myofascia Soft Tissue Mobilization
- C1 Lateral Translation
- C1 Anterior Glide/Occiput Posterior Glide
- Occiput/C1 Contract/Relax of Segmental Extensors and Sidebenders
- Occipital Distraction
- C1/C2 Contract/Relax
- C1/C2 Rotation

Exercise Training

- Upper Cervical Self Mobilizations / Neck Self SNAGs
- Deep Neck Flexor Training
- Deep Neck Extensor Training

Day Ten: Shoulder Girdle / Shoulder Pain - diagnosis and management

Content Summary

- Movement analysis and reeducation for reaching activities
- Shoulder anatomy and evidence as it relates to shoulder pain, radiating pain, and mobility deficits
- Interpret shoulder and arm clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy to address shoulder joint, muscle, and nerve mobility impairments
- Therapeutic exercises for shoulder mobility and upper limb nerve mobility deficits

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Module: Shoulder Adhesive Capsulitis
2. CPG-related Procedure Options – Shoulder & Elbow Labs – Handout & Videos 3.1, 3.2, and 3.3
3. PhysioU app – Orthopaedics:
 - Adhesive capsulitis/Shoulder pain with mobility deficits
 - Sub-acromial pain syndrome/Shoulder pain with muscle power deficits
 - Thoracic outlet syndrome/Shoulder pain with radiating pain
4. PhysioU app – Exercise Patterns:
 - Shoulder pain with mobility deficits – Shoulder stretching exercises
 - Shoulder pain and power deficits – Scapular and shoulder strengthening exercises

Selected References

Kelley MJ, Shaffer MA, Kuhn JE, Michener LA, Seitz AL, Uhl TL, Godges JJ, McClure PW. Shoulder pain and mobility deficits: adhesive capsulitis - clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2013;43(5): A1-A31.

Godges JJ, Matson-Bell M, Thorpe D. The immediate effects of soft tissue mobilization with proprioceptive neuromuscular facilitation on glenohumeral external rotation and overhead reach. *J Ortho Sports Phys Ther.* 2003;33:713-718.

Johnson A, Godges JJ, Zimmerman G. The effect of anterior versus posterior glide joint mobilization on external rotation range of motion of patients with shoulder adhesive capsulitis. *J Orthop Sports Phys Ther.* 2007;37:88-99.

Procedure Focus

Movement Analysis

- Shoulder girdle positional symmetry
- Scapulothoracic and glenohumeral rhythm with overhead reaching

Examination

- Acromioclavicular Accessory Movement Tests: Anterior/Posterior Glides
- Sternoclavicular Accessory Movement Tests
- Median Nerve Tension/Stretch Test
- Radial Nerve Tension/Stretch Test
- Ulnar Nerve Tension/Stretch Test
- Muscle Length Tests:
 - Pectoralis Minor & Major
 - Latissimus Dorsi & Teres Major
 - Subscapularis
- Glenohumeral External Rotation, Internal Rotation, Flexion, Horizontal Adduction

Soft Tissue Mobilization / Manual Stretching

- Anterior Chest
- Subscapularis
- Latissimus Dorsi & Teres Major
- Shoulder External Rotators / Posterior Cuff & Lateral Capsule

Exercise Training

- Shoulder Stretching
- Scapular Strengthening
- Shoulder/Rotator Cuff Strengthening
- Upper Limb Nerve Mobility Training

Day Eleven: Shoulder / Shoulder pain - management of movement coordination impairments

Content Summary

- Review and refine movement analysis and manual procedures practiced on day ten
- Shoulder anatomy and evidence as it relates to shoulder pain, muscle power, and mobility deficits
- Interpret shoulder and arm clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy to address elbow mobility impairments
- Therapeutic exercises for shoulder and elbow muscle power, stability, and movement coordination impairments
- Review of mid thoracic, upper thoracic, mid cervical, and upper cervical manipulative procedures

Knowledge to Review/Acquire Prior to Class

1. CPG-related Procedure Options – Shoulder & Elbow Labs – Handout & Videos 3.4, 3.5, and 3.6
2. PhysioU app – Orthopaedics:
 - Shoulder instability/Shoulder Pain with movement coordination deficits
 - Elbow collateral ligament strain/Elbow stability and movement coordination impairments
3. PhysioU app – Exercise Patterns: Performance progression – Upper extremity

Procedure Focus

Movement Analysis

Shoulder girdle positional symmetry

Scapulothoracic and glenohumeral rhythm with overhead reaching

Examination

Supraspinatus/Infraspinatus/Biceps Brachii Manual Resistive Tests

Supraspinatus/Infraspinatus/Biceps Tendon Palpation/Provocation

Glenohumeral ROM Examination

Glenohumeral Accessory Movement Tests: Posterior & Anterior & Inferior Glides

Manual Therapy

Shoulder Elevation Mobilization with Movement

Internal Rotation Mobilization with Movement

Review of Soft Tissue Mobilization Procedures from Day Ten

Humeral Posterior Glide

Exercise Training

Shoulder Rotational, Flexion, and Abduction Stretching

Shoulder/Rotator Cuff Strengthening

Upper limb / Upper quarter performance progression

Day Twelve: Elbow, Forearm, Wrist, and Hand / Counseling Strategies to Enhance Self-efficacy

Content Summary

- Clinical reasoning principles – strategies to improve self-efficacy and prevent the progression toward disablement
- Elbow, forearm, wrist and hand anatomy as it relates pain, muscle power, and mobility deficits
- Interpret elbow, forearm, wrist and hand clinical findings consistent with the ICF-based clinical guidelines
- Manual therapy to address elbow, forearm, wrist and hand soft tissue, joint, and nerve mobility deficits
- Therapeutic exercises to address relevant elbow, forearm, wrist and hand mobility, muscle power, coordination, sensory, and pain impairments

Knowledge to Review/Acquire Prior to Class

1. CPG Interactive Learning Module: Carpal Tunnel Syndrome
2. CPG-related Procedure Options – Wrist & Hand Labs – Handout & Videos 4.1, 4.2, 4.3, and 4.4
3. PhysioU app – Orthopaedics:
 - Lateral epicondylgia/Lateral elbow pain with muscle power deficits
 - Carpal tunnel syndrome/Hand sensory deficits
4. PhysioU app – Exercise Patterns:
 - Elbow pain and power deficits/Tennis elbow-elbow epicondylitis
 - Elbow, Forearm, and Wrist strengthening
 - Elbow and forearm radiating pain/Peripheral entrapment neuropathy
 - Upper limb nerve mobility exercises
 - Wrist pain and sensory deficits/Carpal tunnel syndrome
 - Upper limb and Thorax mobility exercises
 - Neck and Chest stretching exercises

Selected References

Erickson M, Lawrence M, Jansen CW, Coker D, Amadio P, Cleary C. Hand pain and sensory deficits: Carpal tunnel syndrome: Clinical practice guidelines linked to the international classification of functioning, disability and health from the academy of hand and upper extremity physical therapy and the academy of orthopaedic physical therapy of the American physical therapy association. *J Ortho Sports Phys Ther.* 2019;49(5):CPG1-85.

Procedure Focus

Manual Resistive Tests:

- Extensor Carpi Radialis Brevis and ECRL
- Abductor Pollicis Brevis
- 1st Dorsal Interosseous
- Abductor Pollicis Longus
- Extensor Pollicis Brevis

Provocation Examination:

- Elbow Extensor Tendons: ECRB & ECRL
- Carpal Tunnel
- Guyon's Tunnel
- deQuervain's related Tendons: APL and EPB
- Finkelstein's Test

Ligament Integrity Tests:

- Elbow Valgus Stress Test
- 1st MP Valgus Stress Test

Accessory Movement Tests:

- Ulnar Distraction
- Radial Posterior Glide
- Radial Anterior Glide
- Radial Distraction
- Distal Radioulnar Joint
- Ulnomeniscotriquetral Joints
- Radiocarpal Joints
- Intercarpal Joints
- Ulnar Anterior & Posterior Glides

Manual Therapy:

- Elbow Flexion MWMs
- Elbow Extension MWMs
- Ulnar Distraction
- Radial Posterior Glide
- Radial Anterior Glide
- Forearm Pronation MWMs
- Ulnar Anterior Glide
- Ulnar Posterior Glide
- Wrist Extension MWMs
- Radial Distraction
- Scaphoid/Radius Glides
- Lunate/Radius Glides
- Proximal Carpal Row Ulnar Glides
- Proximal Carpal Row Ulnar Glides
- Scaphoid/Lunate Volar Glides
- Hamate or Capitate Volar Glides
- Intercarpal Dorsal/Volar Glides
- Interphalangeal MWMs
- Phalanx Volar Glides
- Phalanx Dorsal Glides