Advanced Clinical Training in Neuromusculoskeletal Medicine (NMSM)

Online Learning

Complete List Of Online Programs With Learning Objectives

(Current at: 1 January 2025)

The online learning component consists of 4 distinct learning activities:

1. **eLearning Episodes** (video-based master classes based upon clinical cases)
2. **Diagnostic Drills** (case-based clinical thinking activities)
3. **Communication Drills** (case-based professional communication activities)
4. **Online Clinical Masterclasses** (Recordings of live seminars professional edited and formatted into online learning programs)

Total Education Hours To Date:

Online Learning Program	Number Of Learning Activities	Education Hours Per Title	Total Learning Hours For Program Type
eLearning Episodes	18	3	54
Diagnostic Drills	40	2	80
Communication Drills	49	2	98
Online Clinical Masterclasses	34	3	102
			Total Hours 334

Table of Contents

1 - eLearning Episodes

eLearning Episodes are online video-based clinical masterclasses. Each one is a case-based learning activity in diagnostic reasoning, clinical problem-solving and professional communication. Each activity takes the advanced learner through a real patient case via streaming video. As clinical questions arise in the process of solving the case, the latest evidence is introduced and immediately applied in a clinical setting. The result is a documentary format with embedded learning.

Each eLearning Episode is a **three (3) hour learning activity**, consisting of:

- Streamed multimedia video
- Downloadable PDF worksheet
- Online Assessment quiz
- Featured journal articles and recommended reading
- Self-directed learning component

CDI recognizes that learning in a clinical environment does not generally occur in a linear way, but rather is the product of diverse patient presentations that build knowledge and experience in increments over time. For this reason, each **e-Learning Episode** is based upon real case presentations presented according to the 5CModel © that CDI has developed:

1. **C**ase

The clinical scenario is presented and learners are invited to start the clinical reasoning process

2. **C**hallenge

Questions are posed to challenge the learner's current knowledge, clinical reasoning and diagnostic decision-making. Learners are asked to apply current competencies to solve the case

3. **C**larity

W*e drill down on the key subject area to enhance learners' clinical clarity. A diagnosis is offered where applicable, the clinical reasoning is presented and learners are provided with associated reference readings. Each episode feature relevant journal articles. Learners are given the opportunity to reflect on the new knowledge and concepts and how the episode enhanced learners' understanding of what they do.*

4. **C**ompetence

N*ew knowledge is integrated back into the context of the clinical scenario to ensure knowledge is organized and practically relevant. Learners are given the opportunity to reflect on how new knowledge and clinical distinctions can be applied in practice.*

5. **C**ommunication

An example strategy for professionally communicating the key concepts to another healthcare professional is provided. The process of contextualizing knowledge for another audience serves to further consolidate the concepts in learners' mind as well as developing the core skill of professional communication.

2 - Diagnostic Drills

Each Diagnostic Drill is a **two hour learning activity** to enhance diagnostic expertise on a certain clinical topic. Learners are presented with a patient case and are then guided through a series of problem solving tasks. This ensures that new clinical information is progressively introduced whilst simultaneously being applied in a simulated clinical interaction. A quiz consisting of multiple-choice questions must be successfully passed in order to complete the learning activity and gain the credit hour.

3 - Communication Drills

Each Communication Drill is a **two hour learning activity** to enhance inter-professional communication skills. Learners are presented with a clinical scenario that requires skillful engagement with inter-professional communication in order to manage a clinical situation effectively. The learner is then prompted to draft a written communication segment, after which a polished example is provided along with explanatory notes as to the strategic points involved. Abstracts of relevant journal articles are also included and must be reviewed. The learner is then required to successfully pass an online quiz consisting of multiple choice quiz questions in order to complete the learning activity. The quiz is based upon the professional communication principles, clinical aspects of the scenario and journal article abstracts included.

4 – Clinical Masterclasses

Each Clinical Masterclass is a video recording of a live seminar that has been professionally edited and structured into a **three-hour learning activity**. Each video is a recording of a case-based problem solving session that challenge the advanced learner to draw on the latest

evidence in order to diagnose and effectively manage conditions that are central to chiropractic practice.

eLEARNING EPISODES – TITLE LIST

** It is important to note that these online learning programs are ***case-based*** rather than ***topic-based***. New knowledge and skills are 'chunked' together in a form in which they are ***applied*** in a clinical setting.

1. Act Locally, Think Globally
2. Blurry Vision: A Pain in the Neck
3. Making Sense of Headache
4. Thinking Laterally With the Disc Patient
5. A Neurological Approach to Scoliosis
6. The Neck and a Sense of Well-Being
7. Cervical Nerve Root Lesions
8. Fibromyalgia, The Brain and Chronic Pain
9. Lateral Epicondylalgia: Thinking Beyond The Elbow
10. The Sacroiliac Joint: A Diagnostic Approach
11. The Dizzy Child: A Diagnostic Algorithm
12. Osteoporotic Compression Fractures
13. Acute Torticollis
14. Rotator Cuff Tears: Diagnosis and Decision Making
15. The Acute Locked Back: Differential Diagnosis
16. Diagnosing Lateral Hip Pain and The Bursitis Myth
17. Lumbopelvic Pain Associated With Pregnancy
18. Advanced Lumbar MRI Interpretation

DIAGNOSTIC DRILLS – TITLE LIST

1. Facet or Disc?
2. Upper Limb Neural Tension
3. Lower Limb Neural Tension
4. Spinal Cord Compression
5. Inflammatory Joint Pain
6. Classifying Disc Herniation
7. Thoracolumbar Disc Lesions
8. Dizziness
9. Benign Paroxysmal Positional Vertigo (BPPV)
10. Lumbar Spinal Stenosis
11. Coccydynia
12. TMJ Dysfunction
13. Double Crush Syndrome
14. Thoracic Outlet Syndrome
15. Hip Pain in a Child
16. Joint Hypermobility Disorders
17. Lumbar MRI: Important Clinical Pearls
18. Inguinal Pain
19. Frozen Shoulder
20. Piriformis Syndrome
21. Spondylolysis in the Adolescent
22. Spondylolisthesis: What You Need To Know
23. Cervical Injury in a Teenager: A Clinical Thinking Process
24. Making a Functional Neck Diagnosis
25. Leg Cramps: A Diagnostic Algorithm
26. Calf Pain and Swelling: What Are You Thinking?
27. Medial Knee Pain: A Diagnostic Approach
28. Meniscus Tears and Essentials of Reading Knee MRI
29. Lateral Knee Pain and the ITB
30. Anterior Knee Pain in an Adolescent
31. Diagnosing Idiopathic Scoliosis and Assessing Risk of Progression
32. Plantar Heel Pain
33. Migraine: More Than Just A Headache
34. Migraine: What To Look For in a Child
35. Thoracolumbar Junction (Maigne's) Syndrome
36. The Chronically Painful Hamstring
37. The Chronically Stiff and Painful Neck
38. Why Does My Shoulder Keep Hurting?
39. How To Diagnose Tension-Type Headache
40. Ankle Sprain - What You Really Need to Know

COMMUNICATION DRILLS – TITLE LIST

1. Diagnosing Lumbar Facet Joint Pain
2. Diagnosing Lumbar Disc Pain
3. Diagnosing Sacroiliac Joint Pain
4. Adjustments and Analgesia
5. Adjustments and Lumbar Disc Lesions
6. Adjustments and Sacroiliac Joint Lesions
7. Sciatica: Justifying Your Diagnosis
8. Diagnosing Cervicogenic Headache
9. Managing Migraine Headache
10. Diagnosing a Cervical Disc Lesion
11. Managing Lumbar Spinal Stenosis
12. Managing Acute Torticollis
13. Diagnosing Costotransverse Pain
14. Diagnosing Tension-Type Headache
15. Diagnosing BPPV
16. Managing Postural Neck Pain
17. Diagnosing Fibromyalgia
18. Managing Scoliosis
19. Managing a Degenerative Hip
20. Managing Carpal Tunnel Syndrome
21. Managing Shoulder Pain
22. Managing Spondylolisthesis
23. Managing Scheuermann's Disease
24. Managing Pregnancy-Related Sacroiliac Pain
25. Diagnosing Thoracic Facet Joint Pain
26. Diagnosing Meralgia Paraesthetica
27. Diagnosing Cervical Facet Joint Pain
28. Diagnosing Cervicogenic Dizziness
29. Diagnosing Mal de Debarquement Syndrome
30. Managing Tinnitus
31. Diagnosing Medial Knee Pain – Pes Anserine Syndrome
32. Diagnosing Coccydynia
33. Diagnosing Lateral Knee Pain – ITB Syndrome
34. Diagnosing the 'Acute Locked Back' – Meniscoid Extrapment
35. Managing Recurrent Lower Back Pain and Instability
36. Diagnosing Temporomandibular Dysfunction
37. Managing Whiplash and Chronic Cervical Pain
38. Diagnosing a Thoracic Cord Lesion
39. Diagnosing a Labral Tear of the Hip
40. Diagnosing Spondylolysis in a Young Athlete
41. Diagnosing Blurry Vision and Neck Pain
42. Diagnosing the Child With Torticollis
43. Diagnosing Abdominal Migraine in a Child
44. Explaining a Lumbar Disc Prognosis (Surgery Not Required)

45. Explaining a Lumbar Disc Prognosis (Surgery Is Required)
46. Diagnosing a Cervical Radiculopathy
47. Diagnosing Cervical Myelopathy

ONLINE CLINICAL MASTERCLASSES – TITLE LIST

Pain in the Frame

1. Pain in the Frame: A Conceptual Overview of Pain
2. Pain in the Frame: Chronic Tendon Pain
3. Pain in the Frame: Chronic Shoulder Pain
4. Pain in the Frame: Chronic Lower Back Pain (Part 1)
5. Pain in the Frame: Chronic Lower Back Pain (Part 2)
6. Pain in the Frame: Chronic Neck Pain
7. Pain in the Frame: Chronic Headache

Dizziness, Balance and Posture

1. The Neurology of Balance and Posture - Part 1
2. The Neurology of Balance and Posture - Part 2
3. Vertigo or Dizziness? Part 1
4. Vertigo or Dizziness? Part 2
5. Dizziness and the Cervical Spine - Part 1
6. Dizziness and the Cervical Spine - Part 2
7. The Dizzy Child - Part 1
8. The Dizzy Child - Part 2
9. Scoliosis - A Balance Problem?

Lumbopelvic Diagnosis Masterclass

1. Case 1 – Disc Lesions without Neural Compression
2. Case 2 – Disc Lesions with Neural Compression
3. Case 3 – Facet Joint Lesions
4. Case 4 – Sacroiliac Joint Lesions
5. Case 5 – Spondylolysis and Spondylolisthesis
6. Case 5 – Lumbar Spinal Stenosis

Mastering the First Two Consultations

1. Part 1 – Understanding the Problem of Pain
2. Part 2 – Guiding Initial Expectations
3. Part 3 – Calibrating Your Investigation
4. Part 4 – Words Can Harm, Words Can Heal
5. Part 5 – Putting it all Together

The Neuroscience of Patient Care Masterclass

1. Case 1 – Moving Beyond a Mechanical Model
2. Case 2 – Orientation and Postural Stability (Parts 1 & 2)
3. Case 3 – Models and Maps in the New Brain
4. Case 4 – Pain as a Protection System
5. Case 5 – Conceptual Change Strategy: Reframe
6. Case 6 – Movement Change Strategy: Remap and Relearn

eLEARNING EPISODES - DETAILED

Learning Objectives, Areas of Diagnosis and Content Overview

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

eLearning Episode 1 - Adjust Locally, Think Globally

Learning Objectives:

1. Understand the way in which motor control is hierarchically organized
2. Understand the medial to lateral organization of motor systems in the spine
3. Understand sensorimotor control – the way in which sensory inputs are transformed into motor outputs for posture and stability
4. Competently discuss the concept of spinal dysfunction using the latest concepts in neuroscience
5. Draw upon an understanding of the central nervous system changes associated with spinal pain to explain the global changes that may result from a localized mechanical input with manipulation

Area of Diagnosis:

- Mechanical spinal pain

Content Overview:

- Review of how motor control is organized hierarchically in the spinal cord, brainstem and higher motor centres
- Structural, functional and chemical changes in the brain associated with spinal pain and dysfunction
- Overview of sensorimotor control
- Moving from older segmental and mechanical models of manual treatment to more contemporary models based upon modern neuroscience
- Translating contemporary neuroscience into the daily management of uncomplicated mechanical spinal conditions

eLearning Episode 2 – Blurring Vision: A Pain in the Neck

Learning Objectives:

1. To outline 3 major reflexes that arise from the neck for postural stability
2. To explain how cervical dysfunction could impair the control of eye movement and how treating the neck could improve it
3. To perform a basic assessment of sensorimotor control

Area of Diagnosis:

- Whiplash associated disorder
- Diagnosing sensorimotor control impairments associated with whiplash injury and idiopathic neck pain (disturbances in balance and eye movement control)

Content Overview:

- Review of dizziness and visual disturbance associated with whiplash injury
- In-depth review of the neurology underpinning balance, posture and gaze stability
- Review of the research on sensorimotor control impairments associated with whiplash injury
- The value of functional impairments in sensorimotor control as a predictor of transition to chronic pain after whiplash injury
- How to assess sensorimotor control in clinic

eLearning Episode 3 – Making Sense of Headache

Learning Objectives:

1. Identify the key features of the headache patient that will predict their response to chiropractic treatment
2. Understand the major diagnostic criteria for cervicogenic headache and how this condition differs from the major forms of primary headache
3. Describe the mechanism of sensory convergence to explain the relationship between neck and head pain
4. Apply a series of clinical tests that have high value in diagnosing cervicogenic headache
5. Formulate a management approach based upon current evidence for the patient with cervicogenic headache
6. Demonstrate your expertise on the diagnosis and management of cervicogenic headache to a patient's medical practitioners through effective communication

Area of Diagnosis:

- Primary and secondary headache
- Diagnostic criteria for cervicogenic headache

Content Overview:

- Primary versus secondary headache
- Headache classification
- Prevalence of major headache forms
- Prognostic value of accurately diagnosing primary headache
- Diagnostic criteria for cervicogenic headache
- Assessment of the headache patient
- Management strategies for the headache patient

eLearning Episode 4 – Thinking Laterally With the Disc Patient

Learning Objectives:

1. Apply a validated grading system for nerve root compression
2. Utilise this grading system to inform your clinical decision making regarding treatment options for lumbar radiculopathy
3. Explain the mechanisms underlying a manual treatment approach for lumbar disc herniation with radiculopathy
4. Hypothesise regarding the effect of using the sacroiliac joint inputs to alleviate disc-mediated pain
5. Demonstrate your diagnostic expertise and specialised knowledge in disc lesions through professional communication

Area of Diagnosis:

- Lumbar disc pathology

Content Overview:

- Classification of disc injury based upon morphology on imaging
- Evaluating the extent of disc injury – with key concepts such as contained versus uncontained herniations and the grading of nerve root compression on MRI
- Somatic versus neuropathic leg pain (considering inflammatory versus compressive insult to nerve roots)

- Predicting the likelihood of recovery with conservative management
- The role of manual treatment with disc injuries – what are we trying to achieve?
- Assessment and management of the patient with lumbar disc injury

eLearning Episode 5 – A Neurological Approach to Scoliosis

Learning Objectives:

1. Recognize the clinical features of scoliosis that are characteristic of an underlying pathological cause
2. Understand the current theories on the aetiology of *idiopathic* scoliosis
3. Evaluate the scoliosis patient for functional neurological impairments that can be used as objective indicators for treatment
4. Explain the basis for a chiropractic treatment approach to scoliosis

Area of Diagnosis:

- Differential diagnosis of scoliosis – idiopathic versus pathological forms

Content Overview:

- Prevalence of scoliosis
- Review of pathological causes of scoliosis
- Clinical features associated with an underlying pathological cause of scoliosis
- The neurological assessment of the patient with scoliosis
- Review of the current understanding in relation to causative mechanisms of idiopathic scoliosis
- Age classification of idiopathic scoliosis and indications for imaging
- Mensuration of scoliosis
- Risk stratification of the patient with scoliosis based upon age, gender, curve magnitude
- Typical versus atypical curve pattern as a predictor of an underlying pathological cause of scoliosis
- Underlying neurophysiological mechanisms
- Management considerations adolescent idiopathic scoliosis

eLearning Episode 6 – The Neck and a Sense of Well-Being

Learning Objectives:

1. Understand the neural basis for links between balance control and anxiety
2. Recognize the features of central sensitisation of the nervous system
3. Explain how an adjustment to the spine could produce feelings of well being
4. Communicate effectively with medical professionals the basis for a manual approach to the spine in a complex balance disorder patient

Area of Diagnosis:

- Psychological dimension of chronic neck pain and dysfunction

Content Overview:

- Neurological basis for the association between balance disorders and anxiety
- Review of central sensitization of the pain pathways
- The potential role of chronic neck pain in balance disorders and anxiety

eLearning Episode 7 – Cervical Nerve Root Lesions

Learning Objectives:

1. Recognize the spectrum of clinical presentations associated with lower cervical nerve root conditions
2. Assess the integrity of the lower cervical nerve roots based upon an advanced understanding of neuropathic pain mechanisms
3. Demonstrate advanced clinical reasoning in the differential diagnosis of neck and arm pain
4. Formulate an effective management strategy for lower cervical root lesions and skilfully communicate your expertise to your inter-professional colleagues

Area of Diagnosis:

- Cervical radiculopathy – especially the early subtle diagnostic features

Content Overview:

- The 3 main mechanisms of nerve root insult – mechanical, vascular and inflammatory
- The early and often-subtle clinical features of lower cervical nerve root irritation that are important to recognize – symptom behavior and distribution, relief and aggravating positions
- Distinguishing between somatic referred pain into the upper limb (from joint and disc tissues for example) and neuropathic pain (the nerve root as the actual pain generator)

- The localizing value of scapula pain distribution in the early stages of cervical nerve root irritation
- Key points for assessing the patient with suspected cervical nerve root irritation
- Management considerations for the full spectrum of cervical radiculopathic syndromes

eLearning Episode 8 – Fibromyalgia, The Brain and Chronic Pain

Learning Objectives:

1. Understand Fibromyalgia as a central pain syndrome rather than a peripheral disorder of joint and muscle
2. Appreciate the concept of the pain neuromatrix and pain as an output of the brain
3. Recognize the clinical features of central sensitisation and centrally augmented pain
4. Explain how a manual treatment approach could be of benefit in a patient with a primarily central pain syndrome such as fibromyalgia
5. Effectively communicate your management approach to other physicians

Area of Diagnosis:

- Chronic pain syndromes
- Differential diagnosis of diffuse and widespread musculoskeletal pain and fatigue
- Diagnostic criteria for fibromyalgia

Content Overview:

- A review of the latest concepts in pain science
- Understanding the central pain neuromatrix
- Applying the biopsychosocial model in practice
- Origin of the term ‘fibromyalgia’ and moving beyond the older ‘tender point’ criteria
- Appreciating fibromyalgia as a research model for other chronic pain disorders such as temporomandibular disorder and irritable bowel syndrome
- Differential diagnosis of diffuse musculoskeletal pain
- Rapid screening tool for differentiating fibromyalgia from other causes of diffuse M/S pain – such as inflammatory arthritis
- The psychological and cognitive behavioral dimension of fibromyalgia
- The importance of reframing unhelpful beliefs and a focus on pain education – ‘Explain Pain’
- Formulating a multi-dimensional management approach for a chronic pain patient and how to effectively communication the chiropractic doctor’s role to other physicians

eLearning Episode 9 – Lateral Epicondylalgia: Thinking Beyond The Elbow

Learning Objectives:

1. Review the current thinking and research perspectives regarding the mechanisms underpinning lateral epicondylalgia
2. Refine and improve your management approach of the LE patient
3. Explain the central mechanisms of LE
4. Effectively communicate your management approach for LE to a medical practitioner

Area of Diagnosis:

- Lateral epicondylitis / epicondylalgia / epicondylosis (LE)

Content Overview:

- Prevalence and impact of LE
- A review of acute and chronic tendon pain mechanisms – including anatomy and histology
- Understanding the peripheral components – mechanisms of tendon injury
- Enhancing our understanding of the central dimension of chronic tendon pain – functional changes in the spinal cord and brain
- The role of the cervical spine in LE
- Rationale for treating both the peripheral tissues and cervical spine in the patient with LE
- A review of best practice management for LE – including the relative effectiveness of different exercise approaches
- How to professionally communicate the role of the chiropractic doctor to the patient's medical doctor

eLearning Episode 10 – The Sacroiliac Joint: A Diagnostic Approach

Learning Objectives:

1. Recognize key clinical features that help differentiate between the lumbar disc and sacroiliac joint as the major pain source
2. Interpret the results of clinical testing for disc and SIJ pain based upon the current evidence
3. Effectively communicate your clinical reasoning and diagnostic decision making regarding disc and SIJ pain to a medical practitioner

Area of Diagnosis:

- Sacroiliac pain and dysfunction

Content Overview:

- Prevalence and Differential diagnosis of sacroiliac joint pain
- The significance of pain distribution and other aspects of symptom behavior from the history
- Overview of relevant clinical tests for SI joint pain
- Relationship of SI joint pain and knee pain and dysfunction
- Management considerations – what is manipulation trying to achieve?
- Important aspects of professional communication to a patient's medical doctor

eLearning Episode 11 – The Dizzy Child: A Diagnostic Algorithm

Learning Objectives:

1. Differentially diagnose dizziness in a child
2. Review the key signs and symptoms of intracranial space-occupying lesions in a child versus and adult
3. Finesse the basic neurological examination of the child with dizziness

Area of Diagnosis:

- Differential diagnosis of dizziness in a child
- Neurological differential diagnosis
- Diagnosis of cranial space-occupying lesions in children

Content Overview:

- Review of the epidemiology of dizziness in children
- Review of the documented migraine equivalents in children
- A review of space-occupying lesions of the posterior fossa in children
- The relevant neurological assessment for the dizzy child
- A clinical-problem solving process for differentially diagnosing dizziness in children
- The role of the chiropractor in managing the dizzy child
- How to professionally communicate the chiropractic doctor's role to the medical doctor

eLearning Episode 12 – Osteoporotic Compression Fractures

Learning Objectives:

1. Recognize the clinical features of an osteoporotic compression fracture
2. Apply a simple diagnostic process to predict the presence or absence of an osteoporotic compression fracture
3. Understand the essential principles of bone mineral density tests (Dual Energy X-ray Absorptiometry – DEXA) and the relevance of T-scores and Z-scores
4. Differentiate between an osteoporotic fracture and Scheuermann's body wedging based upon x-ray appearance
5. Effectively communicate your expertise in diagnosing and managing the osteoporotic patient to a medical practitioner

Area of Diagnosis:

- Orthopedics – differential diagnosis of bone lesions of the spine
- Diagnosis of pathological fracture

Content Overview:

- Overview of the prevalence of osteoporosis
- The early and subtle clinical features of osteoporotic compression fractures – characteristic pain distribution and symptom behavior
- Outline of the clinical features that are most predictive of osteoporotic compression fracture – age, absence of leg pain, body mass index, gender and lack of regular exercise
- A clinical decision-making tool for assessing the likelihood an osteoporotic compression fracture
- Relevant clinical tests for a patient with suspected osteoporotic compression fracture
- Overview of Dual Energy X-ray Absorptiometry – DEXA
- The significance of T-scores and Z-scores and what they represent clinically
- Definition of osteopenia and osteoporosis based upon T-scores
- Review of the current guidelines regarding density thresholds for medical intervention
- X-ray features of compression fracture – differentiating between old and new fractures
- Distinguishing between a compression fracture and wedged vertebra (from Scheuermann's disease etc) on x-ray
- Management considerations for the patient with osteoporosis
- How to professionally communicate the chiropractor's role to the medical doctor

eLearning Episode 13 – Acute Torticollis

Learning Objectives:

1. *Outline* the current thinking on the major types and causes torticollis
2. *Differentially diagnose* acute torticollis in the adult
3. *Skilfully assess* the adult patient with acute torticollis
4. *Propose* a management approach for the adult patient with acute torticollis
5. Effectively *communicate* your diagnostic reasoning on torticollis and the basis for your proposed management

Area of Diagnosis:

- Differential diagnosis of acute neck pain

Content Overview:

- Definition of torticollis
- Outline of the pathological causes of torticollis
- Relevant clinical tests for excluding pathology
- The current understanding regarding the central neurological mechanisms of torticollis
- The two most common cervical spine mechanisms of torticollis – meniscoid injury and disc lesion – and how to differentiate between these causes based upon the clinical features
- Relevant physical examination of the patient with acute torticollis
- Management considerations for the patient with acute torticollis
- How to professionally communicate the chiropractic doctor's role to the medical doctor

eLearning Episode 14 – Rotator Cuff Tears: Diagnosis and Decision Making

Learning Objectives:

1. ***Understand*** the aetiology and natural history of rotator cuff tears
2. ***Recognize*** the key history features of a rotator cuff tear
3. ***Examine*** the shoulder ***efficiently*** and ***skilfully*** using the most valuable clinical tests for diagnosing rotator cuff tears
4. ***Weigh up*** the risk associated with both conservative management and surgery for rotator cuff tears based upon patient age, tear size, likelihood of progression and potential for healing

5. ***Communicate*** your diagnostic thinking about rotator cuff tears through professional correspondence

Area of Diagnosis:

- Differential diagnosis of rotator cuff pathology

Content Overview:

- A review of clinically relevant anatomy and biomechanics of the shoulder
- The prevalence, etiology and natural history of rotator cuff tears
- A review of the subacromial impingement model
- A size categorization of rotator cuff tears
- An outline of 10 history and examination features that have predictive value in identifying medium or large rotator cuff tears
- The physical examination of the shoulder – with emphasis on which clinical tests are the most reliable for identifying rotator cuff tears
- Assessing rotator cuff tears on MRI
- Understanding the critical time window for surgical repair for appropriate candidates
- Criteria for categorizing patients based upon their risk profile: a decision-making process for identifying patients who are unlikely to respond to conservative management and are likely to obtain the best outcome from early surgical intervention
- How to professionally communicate the chiropractic doctor's role to the medical doctor

eLearning Episode 15 – The Acute Locked Back: Differential Diagnosis

Learning Objectives:

1. *Outline* the current thinking on the major causes of acute antalgia of the lower back
2. *Differentially diagnose* acute lumbar antalgia
3. *Skilfully assess* the adult patient with acute lumbar antalgia
4. Effectively *communicate* your diagnostic reasoning on the acute locked back and the basis for your intervention

Area of Diagnosis:

- Acute lower back pain

Content Overview:

- Epidemiology of acute non-specific lower back pain
- A review of the major peripheral pain generators involved in the 'acute locked back'
- Synovial fold injury
- An overview of the 'neutral zone' of lumbar motion segments and reasons for sudden uncontrolled movements
- The disc as a cause of non-specific acute lower back pain
- Clinically relevant overview of the anatomy, physiology and biochemistry of the intervertebral disc – where and how does degenerative change begin?
- Exploration of the current models of disc injury and degeneration – contrasting the models of genetic predisposition and environmental factors
- Differentiating between a primary pain source in the disc and facet joint based upon symptom behavior and clinical features on examination
- Management considerations for acute non-specific lower back pain
- How to professionally communicate the chiropractic doctor's role to the medical doctor

eLearning Episode 16 – Diagnosing Lateral Hip Pain and The Bursitis Myth

Learning Objectives:

1. ***Understand*** the anatomy, function and clinical importance of the abductor mechanism of the hip
2. ***Assess*** lateral stability of the hip
3. ***Differentially diagnose*** lateral hip pain and dysfunction
4. ***Understand*** the pathological process of gluteal tendonopathy
5. ***Recognise*** gluteal tendon pathology on MRI
6. ***Understand*** the management options for gluteal tendonopathy and *expertly advise* the patient

Area of Diagnosis:

- Differential diagnosis of lateral hip pain
- Greater trochanteric pain syndrome
- Gluteal tendinopathy

Content Overview:

- Prevalence of lateral hip pain
- Review of the relevant anatomy and biomechanics of the abductor mechanism of the hip

- Re-thinking trochanteric bursitis as the major cause of lateral hip pain – a new model emerging in the literature
- Assessing the abductor mechanism of the hip
- Symptom behavior and clinical features on examination that predict gluteal tendinopathy
- MRI evaluation of the abductor mechanism of the hip
- Relative effectiveness of interventions for greater trochanteric pain syndrome – such as cortisone injection and platelet rich plasma
- Criteria for surgical referral
- How to professionally communicate the chiropractic doctor's role to the medical doctor

eLearning Episode 17 – Lumbopelvic Pain Associated With Pregnancy

Learning Objectives:

1. ***Review*** the hormonal and biomechanical changes of pregnancy in relation to the tendency for musculoskeletal pain and dysfunction
2. ***Differentially diagnose*** lumbopelvic pain related to pregnancy
3. ***Skilfully assess*** the pregnant woman with lumbopelvic pain
4. ***Make evidence-based recommendations*** regarding the management of pregnancy-related lumbopelvic pain
5. ***Effectively communicate*** your management of the pregnant woman to her family doctor and obstetrician

Area of Diagnosis:

- Lower back and pelvic pain
- Sacroiliac joint instability

Content Overview:

- Prevalence of lower back and pelvic girdle pain during pregnancy
- Excluding non-musculoskeletal causes of lumbopelvic pain during pregnancy
- Differential diagnosis of the major lumbopelvic pain sources in the pregnant patient
- Overview of the role of relaxin hormone and relationship to lumbopelvic pain
- Assessment of the pregnant woman – reliability of clinical tests
- Evidence-based management of pregnancy-related lumbopelvic pain
- How to professionally communicate the chiropractic doctor's role to the medical doctor

eLearning Episode 18 – Advanced Lumbar MRI Interpretation

Learning Objectives:

1. ***Develop*** a methodical search pattern for evaluating and interpreting lumbar MRI
2. ***Review*** the basic anatomical layers of the lumbar spine on MRI
3. ***Understand*** the diagnostic value of the different MRI sequences
4. ***Understand*** the architecture and organisation of neural tissue on lumbar MRI
5. ***Correlate*** imaging features on lumbar MRI with a patient's clinical findings

Area of Diagnosis:

- Lower back and pelvic pain

Content Overview:

- Review of essential anatomy on MRI imaging
- Review of sequences – T1, T2 and STIR (fat suppression) – and their clinical utility
- Classification of disc herniation
- Key MRI features that help with forming a prognosis for a disc lesion
- Grading nerve root compression

DIAGNOSTIC DRILLS - DETAILED

Learning Objectives

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Diagnostic Drill 01 – Facet or Disc?

1. To strengthen and enhance diagnostic thinking and clinical reasoning skill
2. Apply known clinical prediction rules to differentially diagnose the major sources of chronic lower back pain

Diagnostic Drill 02 – Upper Limb Neural Tension

1. To understand the concept of neural tension (neurodynamics)
2. Apply the Upper Limb Neural Tension Test (ULNTT)
3. Apply applications to improve the health and mobility of nerves.

Diagnostic Drill 03 – Lower Limb Neural Tension

1. Apply neural tension testing of the lower limb and appreciate its diagnostic usefulness
2. Explain the difference between *nerve root tension* signs and *thecal tension* signs and how this is clinically useful
3. Employ a Slump stretching exercise when indicated to address adverse neural tension to improve clinical outcome

Diagnostic Drill 04 – Spinal Cord Compression

1. Identify the most common cause of spinal cord compression (myelopathy)
2. Recognize the clinical signs and symptoms of spinal cord compression in daily practice
3. Understand the features present on MRI for a definitive diagnosis of cervical myelopathy
4. Apply a quick screen for detecting upper motor neuron signs arising from cord compression

Diagnostic Drill 05 – Inflammatory Joint Pain

1. Recognize the clinical signs and symptoms of inflammatory joint disease
2. Understand the classification of seronegative and seropositive arthritis
3. Recommend the most appropriate investigations and therefore demonstrate expertise in the differential diagnosis of inflammatory joint pain

Diagnostic Drill 06 – Classifying Disc Herniation

1. Apply a validated classification system to disc herniation
2. Use the right terminology when discussing disc lesions
3. Use the morphological classification of a disc herniation as a predictor of clinical outcome
4. Employ the classification system to demonstrate your diagnostic expertise and specialized knowledge via your professional communication

Diagnostic Drill 07 – Thoracolumbar Disc Lesions

1. Understand the neuroanatomy of the thoracolumbar junction (T/L) area in relation to the impact of disc herniation
2. Recognize the clinical features of T/L disc herniations and their tendency to mimic lower lumbar disease
3. Differentiate between lesion affecting the epiconus, conus and cauda equina based upon presenting symptoms and neurological signs

Diagnostic Drill 08 – Dizziness

1. Enhance your knowledge with an overview of the major causes of dizziness
2. Recognize the important clinical features presenting in the dizzy patient
3. Apply a reasoning process to differentially diagnose the dizzy patient quickly and effectively

Diagnostic Drill 09 – Benign Paroxysmal Positional Vertigo (BPPV)

1. Understand the pathophysiology of BPPV
2. Identify the key clinical features and diagnostic criteria of BPPV
3. Apply the Dix-Hallpike test to confirm a diagnosis of BPPV

Diagnostic Drill 10 – Lumbar Spinal Stenosis

1. Understand the pathology of lumbar spinal stenosis (LSS)
2. Recognize the nerve root sedimentation sign on lumbar MRI
3. Employ a clinical prediction rule for diagnosing lumbar spinal stenosis

Diagnostic Drill 11 – Coccydynia

1. Understand the structural and functional mechanisms of coccydynia
2. Recognize the clinical features of coccydynia
3. Differentially Diagnose coccydynia

Diagnostic Drill 12 – TMJ Dysfunction

1. Recognize the main clinical manifestations of temporomandibular joint dysfunction (TMD)
2. Describe the current views on the diagnostic value of clinical tests for identifying TMD
3. Understand the major sub-classifications of TMD as reported in the literature
4. Apply a series of clinical tests in an attempt to identify and sub-classify TMD

Diagnostic Drill 13 – Double Crush Syndrome

1. To strengthen and enhance diagnostic thinking and clinical reasoning skills
2. To update your knowledge on the latest scientific understanding of 'double crush syndrome' and the potential mechanisms involved
3. To Recognize signs and symptoms of peripheral nerve injury

Diagnostic Drill 14 – Thoracic Outlet Syndrome

1. To strengthen and enhance your diagnostic thinking and clinical reasoning skills
2. To update your knowledge on the latest scientific understanding of Thoracic Outlet Syndrome (TOS) and the potential mechanisms involved
3. To effectively communicate your diagnostic reasoning with TOS

Diagnostic Drill 15 – Hip Pain in a Child

1. Strengthen and enhance your diagnostic thinking and clinical reasoning skills
2. Review the main causes of hip pain in a child that you need to consider
3. Examine the hip in a child
4. Effectively communicate your diagnostic reasoning with hip pain in a child

Diagnostic Drill 16 – Joint Hypermobility Disorders

1. Strengthen and enhance your diagnostic thinking and clinical reasoning skills
2. Recognize the most common connective tissue disorders that are likely to encounter in chiropractic practice
3. Identify the often subtle clues that might indicate abnormal connective tissue structure and extensibility
4. Assess a patient for the key signs of joint hypermobility and other skeletal manifestations of connective tissue disorders
5. Incorporate a deeper appreciation of a patient's connective tissue integrity into your clinical and therapeutic decision-making.

Diagnostic Drill 17 – Lumbar MRI: Important Clinical Pearls

1. Review the indications for ordering MRI of the lumbar spine
2. Strengthen your basic strategy for reading lumbar MRI
3. Recognize clinically relevant features on lumbar MRI
4. Use lumbar MRI findings to formulate a more robust diagnosis and treatment approach

Diagnostic Drill 18 – Inguinal Pain

1. Enhance overall clinical reasoning and diagnostic thinking skills
2. Understand and discuss the major causes of inguinal pain
3. Differentially diagnose inguinal pain

Diagnostic Drill 19 – Frozen Shoulder

1. Understand the pathophysiology of frozen shoulder
2. Recognize the early clinical features of frozen shoulder
3. Differentially diagnose early frozen shoulder presentations

Diagnostic Drill 20 – Piriformis Syndrome

1. Review the clinical validity of piriformis syndrome as a diagnosis
2. Recognize the most common clinical features thought to be associated with piriformis syndrome
3. Enhance clinical reasoning regarding the spinal and extra-spinal causes of sciatica

Diagnostic Drill 21 – Spondylolysis in the Adolescent

1. Review the incidence and etiology of pars fracture
2. Identify the full spectrum of pars injury ranging from bone stress to spondylolysis
3. Recognize the risk factors for spondylolysis, especially in a young athlete
4. Understand the role of different imaging modalities in obtaining clinically meaningful information

Diagnostic Drill 22 – Spondylolisthesis: What You Need To Know

1. Review the two major types of spondylolisthesis that present to clinical practice and how they differ
2. Identify the early risk factors for degenerative spondylolisthesis
3. Recognize the features of segmental instability
4. Understand the different mechanisms of neural compression associated with spondylolisthesis
5. Confidently manage and advise the patient with spondylolisthesis

Diagnostic Drill 23 – Cervical Injury in a Teenager: A Clinical Thinking Process

1. Understand and explain the distinction between minor and major cervical spine injuries
2. Define cervical instability from an anatomical perspective
3. Differentially diagnose cervical spine injuries based upon age and mechanism of injury
4. Recognize the clinical and x-ray clues of an occult fracture of the cervical spine
5. Utilize the NEXUS criteria to help exclude a cervical spine fracture

Diagnostic Drill 24 – Making a Functional Neck Diagnosis

1. Explain the role of the neck in postural control
2. Recognize the clinical signs and symptoms of disturbed postural control that occur after neck injury
3. Evaluate sensorimotor control in daily practice
4. Diagnose functional impairments of the cervical spine and plan a management approach

Diagnostic Drill 25 – Leg Cramps: A Diagnostic Algorithm

1. Review the mechanisms and causes of nocturnal leg cramps
2. Apply a diagnostic algorithm to the patient with nocturnal leg cramps

Diagnostic Drill 26 – Calf Pain and Swelling: What Are You Thinking?

1. Differentially diagnose leg pain and swelling
2. Review the mechanisms and causes of deep venous thrombosis (DVT)
3. Understand the mechanisms and causes of lymphoedema
4. Utilize a clinical prediction rule to decide when to refer a patient for further evaluation of suspected DVT.

Diagnostic Drill 27 – Medial Knee Pain: A Diagnostic Approach

1. ***Enhance*** your skills in rapid differential diagnosis of medial knee pain
2. ***Review*** the clinically relevant anatomy of the medial knee
3. ***Recognize*** the most common causes of medial knee pain and dysfunction that present to primary care
4. ***Methodically evaluate*** the structures of the medial knee

Diagnostic Drill 28 – Meniscus Tears and Essentials of Reading Knee MRI

1. **Understand** the normal anatomy of the knee menisci on MRI
2. **Enhance** your skills in interpreting MRI of the knee
3. **Apply** the two key criteria for diagnosing meniscus tears on MRI

4. **Know** the key factors that influence orthopedists to consider surgical intervention, and **weigh up** the predictors of a successful outcome

Diagnostic Drill 29 – Lateral Knee Pain and the ITB

1. ***Enhance*** your skills in the rapid differential diagnosis of lateral knee pain
2. ***Recognize*** the most common causes of lateral knee pain and dysfunction that present to primary care, especially the extra-articular pathologies that can mimic a lateral meniscus tear
3. ***Review*** the clinically relevant anatomy and function of the iliotibial tract and the latest research on the proposed mechanism of iliotibial band syndrome
4. ***Methodically evaluate*** the structures of the lateral knee

Diagnostic Drill 30 – Anterior Knee Pain in an Adolescent

1. ***Review*** the clinically relevant anatomy and function of the extensor mechanism of the knee
2. ***Recognize*** the most common causes of anterior knee pain in an adolescent – such as Osgood Schlatter disease, Ostochondritis Dissecans, Sinding-Larson-Johansen Disease and patellofemoral syndrome
3. ***Methodically evaluate*** the knee extensor mechanism
4. ***Differentially diagnose*** anterior knee pain in an adolescent

Diagnostic Drill 31 – Diagnosing Idiopathic Scoliosis and Assessing Risk of Progression

1. ***Recognize*** the anatomical features of a developing scoliosis in a child
2. ***Understand, analyze*** and ***measure*** the key growth phases of a child's spine and how they relate to scoliosis progression
3. ***Review*** the risk factors for scoliosis progression
4. ***Understand*** the management options that are currently recommended for adolescent scoliosis and their relative effectiveness
5. ***Assess*** the risk of progression of an adolescent curve and make an evidence-based judgment regarding the appropriate level of monitoring or other intervention that is required

Diagnostic Drill 32 – Plantar Heel Pain

1. ***Review*** the functional anatomy of the plantar fascia and understand the points of failure and injury
2. ***Review*** the common nerve entrapment sites in the foot that can cause plantar heel pain
3. ***Recognize*** the clinical features of plantar fasciopathy
4. ***Differentially diagnose*** plantar heel pain (especially, distinguish plantar fasciopathy from neural causes of plantar heel pain)
5. ***Apply*** your knowledge of the current evidence base to make robust management decisions and recommendations for the patient with plantar heel pain

Diagnostic Drill 33 – Migraine: More Than Just A Headache

1. ***Understand*** migraine as a complex neurological disorder rather than just type of headache
2. ***Review*** the current theories of migraine etiology
3. ***Recognize*** the symptom spectrum of the migraneur
4. ***Identify*** the clinical features of migraine
5. ***Differentially diagnose*** migraine and ***skillfully evaluate*** the migraine patient
6. ***Formulate*** a management approach for the migraine patient

Diagnostic Drill 34 – Migraine: What To Look For in a Child

1. ***Review*** the current evidence on migraine in childhood
2. ***Recognize*** the migraine equivalents of childhood
3. ***Understand*** how the expression of migraine as an illness evolves from early infancy, through early childhood and then into the teenage and adult years
4. ***Provide*** a strong rationale for offering a trial of management for the suspected diagnosis of pediatric migraine
5. ***Effectively communicate*** your role in diagnosing and managing the pediatric migraine patient

Diagnostic Drill 35 – Thoracolumbar Junction (Maigne's) Syndrome

1. ***Review*** the functional anatomy and biomechanics of the thoracolumbar junction
2. ***Review*** the relevant peripheral nerves that arise from the thoracolumbar junction, their areas of supply, and sites for potential entrapment
3. ***Recognize*** the symptom patterns that can arise from dysfunction at the thoracolumbar junction
4. ***Differentially diagnose*** flank and iliac crest pain
5. ***Apply*** robust clinical reasoning and expertly ***communicate*** your diagnosis

Diagnostic Drill 36 – The Chronically Painful Hamstring

1. ***Differentially diagnose*** chronic inferior gluteal pain
2. ***Update*** your understanding as to why tendons become chronically painful
3. ***Appreciate*** the peripheral and central mechanisms that are thought to contribute to chronic tendon pain
4. ***Apply*** manual treatment that is guided by the latest understanding of peripheral and central chronic pain mechanisms

Diagnostic Drill 37 – The Chronically Stiff and Painful Neck

1. ***Understand*** and recognize the functional impairments that have been identified in chronic neck pain patients

2. ***Appreciate*** the broader dimensions of chronic neck pain within a framework of the latest concepts in pain science
3. ***Apply*** a modern neuroscience approach to the management of the chronic pain patient
4. ***Effectively communicate*** your role in the management of chronic pain to both the patient and their other clinicians.

Diagnostic Drill 38 – Why Does My Shoulder Keep Hurting?

1. ***Review*** the neural anatomy of the shoulder to better ***appreciate*** the type, location and functional plasticity of sensory receptors
2. ***Consider*** the role of central pain processing mechanisms in the maintenance of pain and altered movement behavior of the shoulder
3. ***Incorporate*** the latest understanding of central pain mechanisms into your diagnostic and therapeutic decision making process for the chronic shoulder pain patient
4. ***Understand*** how the peripheral pain detection system and central pain processing areas interact to produce persistent clinical pain
5. ***Enhance*** your skills in ***interpreting MRI of the rotator cuff*** with a review of which sequences to look at first and which structures are the most clinically relevant
6. ***Explain*** the role of manual treatment in the management of persistent shoulder pain
7. ***Appreciate*** the importance of the right explanation and pain education in achieving the best clinical outcome for the patient with persistent shoulder pain

Diagnostic Drill 39 – How To Diagnose And Manage Tension-Type Headache

1. ***Update*** your knowledge based upon the latest advances in the pathophysiology of primary headache
2. More deeply ***appreciate*** the role of the central nervous system in primary headache and practically apply the concepts in managing this patient group
3. ***Appreciate*** and be able to intelligently articulate the socioeconomic burden of tension-type headache
4. ***Understand*** how episodic tension-type headache evolves into chronic tension-type headache and the important role that the chiropractic doctor can play in recognizing and preventing this transition
5. Professionally ***communicate*** your role in the diagnostic evaluation and management of chronic tension-type headache

Diagnostic Drill 40 – Ankle Sprain – What You Really Need To Know

1. ***Know*** the clinically relevant anatomy of the ankle joint
2. ***Grade*** acute ankle sprain
3. ***Apply*** the Ottawa Ankle Rules to exclude fracture and know when to image
4. ***Interpret*** ankle radiographs competently and recognise the most common fractures that occur in the ankle
5. ***Understand*** why the long-term prognosis for acute ankle sprain is poor

6. ***Recognise*** chronic ankle instability based upon history and examination findings
7. Expertly ***manage*** acute and chronic ankle sprain to better prevent long term functional impairment and reduce quality of life

COMMUNICATION DRILLS - DETAILED

Learning Objectives:

Educator: Dr Matthew D. Long. BSC MChiro DIANM

Communication Drill 01 – Diagnosing Lumbar Facet Joint Pain

1. To ***appreciate*** that facet joint pain is still a somewhat controversial diagnosis
2. To ***understand*** the importance of highlighting your diagnostic thinking
3. To ***learn*** how to communicate your findings using anatomical rather than functional terms

Communication Drill 02 – Diagnosis Lumbar Disc Pain

1. To ***appreciate*** that lumbar disc pain is generally under-diagnosed
2. To ***learn*** how to walk the reader through your diagnostic process so that they understand your conclusions
3. To ***become adept*** at focusing your explanations upon one key concept

Communication Drill 03 – Diagnosing Sacroiliac Joint Pain

1. To ***appreciate*** that the sacroiliac joints do not feature in many doctors' triage process
2. To ***learn*** how to use candor to demonstrate your impartiality
3. To ***consolidate*** your skills of walking the reader through your thinking process

Communication Drill 04 – Adjustments and Analgesia

1. To ***appreciate*** that many health professionals underestimate the impact of chronic pain
2. To ***learn*** how to describe the neurological effects of adjustments
3. To ***understand*** the reservations that many medical practitioners have about over-servicing

Communication Drill 05 – Adjustments and Lumbar Disc Lesions

1. To ***consider*** the concern that a GP might have at the thought of you manipulating a herniated disc
2. To ***appreciate*** the importance of communicating your diagnostic criteria and patient selection process
3. To ***learn*** how to convey the benefits of manipulation in the presence of intervertebral disc lesions

Communication Drill 06 – Adjustments and Sacroiliac Joint Lesions

1. To ***appreciate*** that you must always explain which diagnoses you have ruled out

2. To ***reflect*** upon how your adjustments might improve the function of the sacroiliac joints
3. To ***learn*** how to describe a mechanical rationale for adjusting the sacroiliac joints

Communication Drill 07 – Sciatica: Justifying Your Diagnosis

1. To ***appreciate*** the tendency for most clinicians to view leg referral as discogenic
2. To ***understand*** the necessity for a reasoned explanation for your diagnosis
3. To ***learn*** how to state a contrary diagnosis within the established etiquette of health care

Communication Drill 08 – Diagnosing Cervicogenic Headache

1. To ***recognize*** the distinctions between tension-type headache and cervicogenic headache
2. To ***solidify*** your skills at reasoning out your diagnostic process in the written form
3. To ***learn*** how to describe manipulation in terms that are appreciated by a GP

Communication Drill 09 – Managing Migraine Headache

1. To ***appreciate*** that most medical practitioners do not see a role for chiropractors in the treatment of migraine
2. To ***understand*** how to use the specificity of language to make important distinctions or clarifications
3. To ***recognize*** the complex neurology underpinning migraine and that various somatic structures influence it

Communication Drill 10 – Diagnosing a Cervical Disc Lesion

1. To ***appreciate*** the relationship between wry neck and disc pain
2. To ***remember*** that you must always highlight the diagnoses that you have ruled out
3. To ***appreciate*** that confident vocabulary builds the reader's trust

Communication Drill 11 – Managing Lumbar Spinal Stenosis

1. To ***recognize*** that there isn't an immediately obvious rationale for chiropractic management of spinal stenosis
2. To ***challenge*** your own thinking about how adjustments might benefit a patient with severe degeneration
3. To ***compose*** a biologically plausible explanation for the benefits of manipulation for neurogenic claudication

Communication Drill 12 – Managing Acute Torticollis

1. To ***learn*** how to raise questions in your correspondence by speaking in the patient's voice
2. To ***develop*** your skills in the use of reserved language
3. To ***explain*** how your management can aid those suffering recurrent torticollis

Communication Drill 13 – Diagnosing Costotransverse Pain

1. To ***understand*** the importance of ordering the flow of your narrative
2. To ***anticipate*** the concerns that a GP would have when the patient experiences undiagnosed chest pain
3. To ***formulate*** a sound explanation for mechanical chest pain and the rationale for manipulation

Communication Drill 14 – Diagnosing Tension-Type Headache

1. To ***appreciate*** that your audience may have a different understanding of Tension-Type Headache (TTH)
2. To ***understand*** the importance of highlighting your diagnostic thinking
3. To ***learn*** how to communicate the link between cervical spine disorders and TTH

Communication Drill 15 – Diagnosing BPPV

1. To ***recognise*** that vertigo is an area of diagnostic confusion amongst clinicians
2. To ***appreciate*** that many non-chiropractors will be concerned about vertebroasilar ischemia
3. To ***learn*** how to describe the diagnostic criteria for BPPV

Communication Drill 16 – Managing Postural Neck Pain

1. To ***recall*** that muscular pain is the most frequent diagnosis made by GPs when investigating neck pain
2. To ***learn*** how to link muscular dysfunction to facet joint pain
3. To ***appreciate*** the important concept of 'instability'

Communication Drill 17 – Diagnosing Fibromyalgia

1. To ***recognise*** that fibromyalgia is a neurological condition
2. To ***learn*** how to explain the relationship between diffuse symptoms and a central pain-processing disorder
3. To ***remember*** to use candour when claiming efficacy for your treatment

Communication Drill 18 – Managing Scoliosis

1. To ***develop*** a strategy for communicating your expertise in scoliosis management
2. To ***appreciate*** the central role that the brain and postural system plays in this condition
3. To ***remember*** to use candour when claiming efficacy for your treatment

Communication Drill 19 – Managing a Degenerative Hip

1. To ***develop*** a strategy for communicating your expertise in managing a patient with hip OA
2. To ***recognise*** the necessity for describing an appropriate rationale for your treatment
3. To ***learn*** how to use reserved language when claiming efficacy for what you do

Communication Drill 20 – Managing Carpal Tunnel Syndrome

1. To ***understand*** the relative importance of the cervical spine in carpal tunnel syndrome
2. To ***appreciate*** that a GP may not be familiar with some important concepts of carpal tunnel theory
3. To ***refer*** to the scientific literature when making controversial statements

Communication Drill 21 – Managing Shoulder Pain

1. To ***anticipate*** the level of familiarity that a GP might have with the interrelationship of the spine and shoulder
2. To ***understand*** how to convey your message without belabouring the detail
3. To ***develop*** a strategy to ***explain*** why your management of shoulder pain might include spinal manipulation

Communication Drill 22 – Managing Spondylolisthesis

1. To ***appreciate*** a reader's concern when considering the chiropractic management of spondylolisthesis
2. To ***understand*** the significance of a pars defect and how to communicate this
3. To ***develop*** a strategy to explain why your management of spondylolisthesis might include spinal manipulation

Communication Drill 23 – Managing Scheuermann's Disease

1. To ***revisit*** your understanding of Scheuermann's disease diagnosis
2. To ***understand*** how to describe your management in the context of this disease
3. To ***develop*** a strategy to explain why your management of Scheuermann's disease might include spinal manipulation

Communication Drill 24 – Managing Pregnancy-Related Sacroiliac Pain

1. To ***reflect*** upon the goals of treatment in pregnancy-related pain
2. To ***appreciate*** the mindset of a concerned reader
3. To ***develop*** a communication strategy for describing chiropractic management of pregnancy-related pelvic pain

Communication Drill 25 – Diagnosing Thoracic Facet Joint Pain

1. To ***consider*** how you would explain the diagnosis of thoracic facet pain
2. To ***recall*** that the upper back is a frequent site of referred pain from other structures
3. To ***develop*** a communication strategy for describing how you approach the thoracic pain patient

Communication Drill 26 – Diagnosing Meralgia Paraesthetica

1. To ***review*** mechanisms of lateral thigh pain
2. To ***reflect*** upon vocabulary styles when writing to a medical colleague

3. To ***develop*** a communication strategy for describing how you approach the patient with meralgia paraesthetica

Communication Drill 27 – Diagnosing Cervical Facet Joint Pain

1. To ***appreciate*** the importance of making a diagnosis
2. To ***understand*** when to use the literature to build credibility
3. To ***develop*** a communication strategy for describing how you approach the patient with cervical facet joint pain

Communication Drill 28 – Diagnosing Cervicogenic Dizziness

1. To ***understand*** the importance of using precise diagnostic terminology
2. To ***appreciate*** the need for extra detail when ruling out possible pathology
3. To ***develop*** a communication strategy for describing how you approach the patient with cervicogenic dizziness

Communication Drill 29 – Diagnosing Mal de Debarquement Syndrome

1. To ***appreciate*** the significance of a 'diagnosis of exclusion'
2. To ***understand*** the balance of detail required in different situations
3. To ***learn*** the importance of communicating a prognosis

Communication Drill 30 – Managing Tinnitus

1. To ***reflect*** upon the different perspectives that might exist about the mechanical and neurological effects of manipulation
2. To ***appreciate*** the mechanisms of somatic tinnitus
3. To ***learn*** how to explain complex neurological relationships in a simple fashion

Communication Drill 31 – Diagnosing Medial Knee Pain – Pes Anserine Syndrome

1. To ***reflect*** upon the different perspectives that might exist about the common causes of medial knee pain and how to tailor your communication to the clinician that you're writing to
2. To ***appreciate*** the current evidence-based understanding of medial knee pain
3. To ***effectively communicate*** your diagnostic reasoning behind the diagnosis of medial knee pain and a basis for manual intervention

Communication Drill 32 – Diagnosing Coccydynia

1. To ***reflect*** upon the different perspectives that might exist about the common causes of coccydynia and where the chiropractor's communication start point should be
2. To ***appreciate*** the current evidence-based understanding of coccydynia
3. To ***effectively communicate*** your diagnostic reasoning behind the diagnosis of coccydynia and a basis for manual intervention

Communication Drill 33 – Diagnosing Lateral Knee Pain – ITB Syndrome

1. To ***reflect*** upon the different perspectives that might exist about the common causes of lateral knee pain and how to tailor your communication to the clinician that you're writing to
2. To ***appreciate*** the current evidence-based understanding of lateral knee pain
3. To ***effectively communicate*** your clinical reasoning behind the differential diagnosis of lateral knee pain and a basis for manual intervention

Communication Drill 34 – Diagnosing the 'Acute Locked Back' – Meniscoid Extrapment

1. To ***understand*** that medical practitioners will commonly view the antalgic patient as having suffered a disc injury
2. To ***practice*** walking the reader through your diagnostic reasoning process
3. To ***reflect*** upon how to explain complex anatomical concepts in simple terms

Communication Drill 35 – Managing Recurrent Lower Back Pain and Instability

1. To ***reflect*** upon the different perspectives that might exist about the underlying pathophysiology of migraine
2. To ***appreciate*** the current evidence-based understanding of migraine
3. To ***effectively communicate*** your clinical reasoning behind the differential diagnosis of migraine and provide a clear basis for multidisciplinary management manual treatment

Communication Drill 36 – Diagnosing Temporomandibular Dysfunction

1. To ***appreciate*** that it is not immediately obvious that chiropractors manage temporomandibular disorder (TMD)
2. To ***understand*** that TMD is co-morbid with other conditions such as neck pain, migraine and fibromyalgia
3. To ***reflect*** upon how we might explain the rationale for treating such a complex multifactorial condition

Communication Drill 37 – Managing Whiplash and Chronic Cervical Pain

1. To ***understand*** that there are many misconceptions about the nature of whiplash
2. To ***appreciate*** the concerns that a GP might have about patient dependence upon passive treatment
3. To ***reflect*** upon how we might explain the origin of sensory disturbances other than pain

Communication Drill 38 – Diagnosing a Thoracic Cord Lesion

1. To ***appreciate*** that cord lesions have distinctive symptom profiles
2. To ***learn*** how to engage the GP in your management as a partner
3. To ***understand*** the importance of tact when making a different diagnosis to the GP
4. To ***reflect*** upon the importance of educating GPs about the appropriate use of advanced imaging

Communication Drill 39 – Diagnosing a Labral Tear of the Hip

1. To ***appreciate*** that labral tears are common, but frequently undiagnosed
2. To ***learn*** how to tactfully describe imaging features missed by a radiologist
3. To ***understand*** how much detail to include when highlighting your expertise
4. To ***reflect*** upon a multi-stage process of co-operation with your medical colleagues

Communication Drill 40 – Diagnosing Spondylolysis in a Young Athlete

1. To ***appreciate*** that spondylolysis can be symptomatic before a fracture is visible on plain-film or CT imaging
2. To ***learn*** how to explain why you require an MRI scan
3. To ***understand*** that a GP is more wary of the chiropractic management of pediatric and adolescent patients
4. To ***reflect*** upon the importance of effective co-management with a patient's GP

Communication Drill 41 – Diagnosing Blurry Vision and Neck Pain

1. To ***appreciate*** that blurry vision is a frequent accompaniment to traumatic neck pain
2. To ***learn*** how to explain complex biological mechanisms in simple language
3. To ***understand*** that a GP will be more wary of any disorder with neurological symptoms
4. To ***reflect*** upon building a 'bridge of communication'

Communication Drill 42 – Diagnosing the Child With Torticollis

1. To ***appreciate*** that GPs are often highly concerned about pediatric chiropractic care
2. To ***learn*** how to demonstrate your diagnostic reasoning process to the GP
3. To ***understand*** how to explain the differences between adult and pediatric treatment methods
4. To ***reflect*** upon why there is such heightened concern about the treatment of children

Communication Drill 43 – Diagnosing Abdominal Migraine in a Child

1. To ***appreciate*** that GPs might query the relevance of a chiropractic approach
2. To ***learn*** how to put the GP at their ease by explaining your reasoning
3. To ***understand*** that abdominal migraine is poorly understood and under-recognized
4. To ***reflect*** upon the opportunity to position yourself as a diagnostician, not a therapist

Communication Drill 44 – Explaining a Lumbar Disc Prognosis (Surgery Not Required)

1. To ***appreciate*** that a GP is typically unaware of your skills in MRI interpretation
2. To ***learn*** how to put the GP at their ease by explaining your reasoning
3. To ***understand*** the importance of making a prognosis and communicating this to a GP
4. To ***reflect*** upon the opportunity to position yourself as a diagnostician, not a therapist

Communication Drill 45 – Explaining a Lumbar Disc Prognosis (Surgery Is Required)

1. To ***understand*** that your reputation depends upon demonstrating your impartiality
2. To ***learn*** how to translate your clinical findings into a well-reasoned argument
3. To ***appreciate*** the value of using analogies to explain complex ideas
4. To ***reflect*** upon your role as a 'patient advocate' in the health care system

Communication Drill 46 – Diagnosing a Cervical Radiculopathy

1. To ***understand*** that the goal of all correspondence is to make ourselves relevant to the GP
2. To ***learn*** how to position ourselves as a problem solver
3. To ***appreciate*** the importance of subtle language and its use in priming the reader
4. To ***reflect*** upon the typically benign prognosis of cervical radiculopathy

Communication Drill 47 – Diagnosing Cervical Myelopathy

1. To ***understand*** the implications of using confident language when describing serious conditions
2. To ***learn*** how to tactfully communicate to a patient's doctor a different or updated diagnosis
3. To ***appreciate*** the importance of knowing when to make a referral decision
4. To ***reflect*** upon the various methods necessary to make an accurate diagnosis of CSM

ONLINE CLINICAL MASTERCLASSES – DETAILED

CHRONIC PAIN MASTERCLASS

1. Pain in the Frame: A Conceptual Overview of Pain

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. Understand the latest concepts in pain science and them as part of you clinical reasoning, diagnostic decision-making and management strategies for the chronic pain conditions that present to you every day in practice

Content Overview:

- The peripheral machinery of nociception – receptors and primary afferents
- Peripheral sensitization
- Central sensitization
- Descending pain modulation - brainstem inhibitory and excitatory connections onto the spinal cord
- The central pain neuromatrix
- The role of mesolimbic and attentional systems in the transition to chronic pain

2. Pain in the Frame: Chronic Tendon Pain

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. Differentially diagnose chronic inferior gluteal pain
2. Update your understanding as to why tendons become chronically painful
3. Appreciate the peripheral and central mechanisms that are thought to contribute to chronic tendon pain
4. Apply manual treatment that is guided by the latest understanding of peripheral and central chronic pain mechanisms

Content Overview:

- Using hamstring tendinopathy as a model for exploring the mechanisms that underpin chronic tendon pain
- A pathoanatomical approach to the diagnosis of inferior gluteal pain in athletes – the gluteal triangle

- Using relevant clinical tests to challenge the major structures that could cause inferior gluteal pain – lumbar disc, facet joint, sacroiliac joint, hip joint, piriformis and hamstring
- Review of clinical tests for identifying proximal hamstring tendinopathy
- Considering the question: what causes tendons to become chronically painful?
- Structure and function of normal tendon tissue
- What happens when a tendon become pathological?
- Major clinical features of tendon pain
- Physiological versus pathological pain
- Applying new concepts in pain science to better understand the frustrating condition of chronic tendon pain
- A review of the potential contributors to chronic tendon pain – matrix changes, vascular changes, changes in tenocyte structure and function, biochemical changes, cell changes
- Central mechanisms for tendon pain – spinal cord and brain
- A contemporary management approach that aims to address both the peripheral and central mechanisms of chronic tendon pain

3. Pain in the Frame: Chronic Shoulder Pain

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. Review the types and location of sensory receptors in the shoulder joint and their role in pain production
2. Consider the role of central pain processing mechanisms in the maintenance of pain and altered movement behaviour of the shoulder
3. Incorporate the latest understanding of central pain mechanisms into your diagnostic and therapeutic decision making process for the chronic shoulder pain patient

Content Overview:

- Prevalence and epidemiology of rotator cuff tears
- A conventional tissue pathology diagnosis – based upon triad of history, examination and imaging
- Examination key contradictions with the pathological model – incidence of asymptomatic rotator cuff tears, incongruence between symptoms and tissue lesions on imaging findings, inability of structural change to explain response to therapeutic exercises, biomedical diagnosis based upon tissue faults is not associated with clinical outcomes
- Applying current concepts in pain science to better explain the full clinical picture of chronic shoulder pain
- The neuroanatomical basis of chronic rotator cuff pain

- A review of the peripheral sensory machinery of the shoulder – classification, location and density of sensory receptors in shoulder joint tissues
- Functional and chemical plasticity of sensory receptors
- Review of the concepts of peripheral and central sensitization of the pain pathways
- Review and interrogation of the subacromial impingement model
- Degeneration versus de-conditioning of the rotator cuff – biological, psychological and social factors
- Central neurological mechanisms underpinning chronic rotator cuff pain
- Using the Mature Organism Model (Gifford) to appreciate the role of biopsyhosocial factors in chronic shoulder pain
- Reframing and challenging unhelpful beliefs that drive chronic rotator cuff pain
- Understanding and explaining the role of manual treatment in addressing both the peripheral and central dimensions of chronic rotator cuff pain
- The role of active rehabilitative tasks in challenging learn pain associations
- Reframe, remap, relearn – a model for overall patient management

4. Pain in the Frame: Chronic Lower Back Pain (Part 1)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. Review the latest concepts in pain science regarding the peripheral and central mechanisms that drive pain chronicity
2. Gain greater clarity regarding the role of spinal surgery in chronic lower back pain
3. Analyse the clinical criteria that are important in deciding when a the lower back pain patient is most likely to benefit from spinal surgery versus conservative management

Content Overview:

- Weighting the relative effects of peripheral pain generators and central pain mechanisms when it comes to chronic lower back pain
- Review of the major documented sources of lower back pain
- Distinguishing between somatic and neuropathic leg pain
- Review of disc degeneration the relationship to pain generation
- Review of facet joint pathology – synovitis and degenerative change – and relationship to pain generation
- Review of sacroiliac joint pain and pathology
- Mechanosensitivity of neural tissue
- Nerve root tension sign versus thecal tension sign
- In-depth review of lumbar MRI with emphasis on features that are associated with pain generation
- Morphologial features of a disc protrusion on MRI that predict a more favorable outcome – potential for shrinkage of the nuclear mass

- Factors that determine the body's ability to resorb a nuclear mass – size of protrusion, degree of vertical migration, homogeneity of the protruded material and presence of Modic change

5. Pain in the Frame: Chronic Lower Back Pain (Part 2)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. Apply a clinical thinking process to sub-classify patients with lower back pain based upon most dominant pain mechanisms
2. Explain the role of manual treatment in both treating and helping to prevent chronic lower back pain

Content Overview:

- The role of sensorimotor control impairments
- Cortical changes associated with chronic lower back pain
- Management considerations for chronic lower back pain – addressing the peripheral and central mechanisms more effectively
- Effectively communicating the chiropractic doctor's role to the medical doctor

6. Pain in the Frame: Chronic Neck Pain

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. Review and recognize the functional impairments that have identified in chronic neck pain patients
2. Understand the dimensions of chronic neck pain within a framework of the latest concepts in pain science
3. Apply a modern neuroscience approach to the management of the chronic pain patient
4. Effectively communicate your role in the management of chronic pain to both the patient and their other clinicians.

Content Overview:

- Weighing up the relative effects of peripheral pain generators and central pain processing mechanisms in order to explain the entire clinical picture of chronic neck pain

- Using a simple classification of pain mechanisms to better understand chronic neck pain
- Input mechanisms – nociceptive pain and peripheral neurogenic pain
- An outline of the different peripheral pain generators in the neck and mechanisms of insult and injury – facet joint, disc, nerve root, synovial fold and myofascial tissues
- Processing mechanisms – central sensitization and affective mechanisms driving chronic neck pain
- Outline of cervical proprioception and how impaired sensory report of joint position and motion can contribute to sensorimotor control deficits
- Output mechanisms – impaired motor control, autonomic control, neuroendocrine and immune aspects of chronic neck pain
- A review of functional impairments that have been associated with chronic neck pain in the literature
    - Delayed onset of deep neck flexors
    - Increased activation of superficial neck flexors
    - Decreased flexor muscle endurance
    - Decreased cervical muscle strength
    - Multifidus muscle atrophy
    - Lower movement velocity
    - Jerky movement patterns
    - Reduced trajectory movement control
    - Irregular and stiffer movement patterns
    - Increased postural sway
    - Functional balance disturbances and dizziness
    - Reduced cervical joint position sense
    - Breakdown in eye movement control
- Relevant aspects of the physical examination of the patient with chronic neck pain
- Developing a management approach that addressed all dimensions of chronic neck pain
- Effectively communicating the chiropractic doctor's role in the management of chronic neck pain to the patient's medical doctor

7. Pain in the Frame: Chronic Headache

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

6. Appreciate and be able to intelligently articulate the socioeconomic burden of chronic headache
7. Update your knowledge based upon the latest advances in the pathophysiology of primary headache
8. More deeply appreciate the role of the central nervous system in primary headache and practically apply the concepts in managing this patient group

9. Professionally communicate your role in the diagnostic evaluation and management of chronic headache

Content Overview:

- Headache classification
- Prevalence of the different primary headache forms
- Overview of secondary headache and excluding pathological causes
- Defining clinical features of migraine, tension-type headache and cervicogenic headache
- Focus on tension-type headache (TTH) as the most prevalent headache type and large chronic pain burden
- A review of the current understanding regarding causative mechanisms of TTH
- Episodic TTH versus Chronic TTH
- Understanding the transition from Episodic to Chronic TTH and the important role of the clinician in acting to prevent this transition
- The peripheral mechanisms of TTH and the role of the cervical spine
- The central mechanisms of TTH and the role of biopsychosocial factors
- Developing a management strategy that more effectively addresses both the peripheral and central dimensions of chronic TTTH
- Effectively communicating the chiropractic doctor's role in the management of chronic tension-type headache to the patient's medical doctor

DIZZINESS BALANCE AND POSTURE MASTERCLASS

1. Dizziness, Balance & Posture: The Neurology of Balance (Part 1)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives:

1. To become familiar with the postural control system (sensorimotor control)
2. To understand how motor control is organised
3. To appreciate the sensory components of postural control - vestibular and cervical
4. To understand the reflexes that stabilise the spine and eyes
5. To recognise the different eye movements and their clinical use

This topic gives you the neurological foundation to think through the cases that follow. You will gain clarity on how abnormal proprioceptive input from joints in the neck can contribute to chronic spinal pain, dizziness, functional balance impairments, vertigo and migraine.

2. Dizziness, Balance & Posture: The Neurology of Balance (Part 2)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. To become familiar with the postural control system (sensorimotor control)
2. To understand how motor control is organised
3. To appreciate the sensory components of postural control - vestibular and cervical
4. To understand the reflexes that stabilise the spine and eyes
5. To recognise the different eye movements and their clinical use

How do sensory inputs merge together at the level of the brainstem to orientate a person in 3D space, and to align their joint system with the earth vertical? How are they centrally processed in order to give rise to postural control and normal spinal alignment?

3. Dizziness, Balance & Posture: Vertigo or Dizziness (Part 1)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Understand the major causes of dizziness and vertigo that present to chiropractic practice
2. Differentially diagnose the dizzy patient
3. Differentiate between peripheral and central causes of vertigo
4. Diagnose and manage the patient with BPPV

Mary is 55 years old and has suffered three episodes of ‘dizziness’ over the past two years. But does she have dizziness or vertigo? What is the difference between the two and how

would you exclude serious pathology? What major diagnostic possibilities do you need to consider?

4. Dizziness, Balance & Posture: Vertigo or Dizziness (Part 2)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Understand the major causes of dizziness and vertigo that present to chiropractic practice
2. Differentially diagnose the dizzy patient
3. Differentiate between peripheral and central causes of vertigo
4. Diagnose and manage the patient with BPPV

This is the second part of our exploration of dizziness and vertigo. What is the most common cause of vertigo and what test would support this diagnosis? What is the most effective treatment strategy for BPPV? What are the links between vertigo, the neck, anxiety and osteoporosis?

5. Dizziness, Balance & Posture: The Cervical Spine (Part 1)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Review and understand the role of the neck in dizziness, vertigo and other balance disturbances
2. Enhance your skills in diagnosing and managing cervicogenic dizziness
3. Apply sensorimotor control rehabilitative strategies for more effectively managing the patient with both whiplash associated disorder and chronic non-dramatic neck pain

Brian is 36 years old and suffered a whiplash injury to his neck whilst riding on a roller coaster 3 weeks ago. Since then he's also noticed a vague dizziness when turning his head to either side, difficulty concentrating and complained of a generalised ‘fogginess’. Could Brian have a vascular cause for his dizziness?

6. Dizziness, Balance & Posture: The Cervical Spine (Part 2)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Review and understand the role of the neck in dizziness, vertigo and other balance disturbances
2. Enhance your skills in diagnosing and managing cervicogenic dizziness
3. Apply sensorimotor control rehabilitative strategies for more effectively managing the patient with both whiplash associated disorder and chronic non-dramatic neck pain

What diagnostic tests could you use to determine if Brian has cervicogenic dizziness? Or could he have *Mal de Débarquement* syndrome instead of cervicogenic dizziness? What is this condition and how would you recognise it? How you would manage Brian's case?

7. Dizziness, Balance & Posture: The Dizzy Child (Part 1)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Understand the diagnostic spectrum for childhood dizziness and vertigo
2. Know how to exclude a pathological cause for dizziness in childhood
3. Recognize the migraine equivalents of childhood
4. Explain how you would manage the child with dizziness

Luke is 6 years old and has experienced almost weekly episodes of dizziness over the past two months. His GP felt that it was probably a virus, but he also complains of neck pain. What are the major causes of dizziness in a child to consider? How do we exclude a serious underlying pathology?

8. Dizziness, Balance & Posture: The Dizzy Child (Part 2)

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Understand the diagnostic spectrum for childhood dizziness and vertigo
2. Know how to exclude a pathological cause for dizziness in childhood
3. Recognize the migraine equivalents of childhood
4. Explain how you would manage the child with dizziness

In this second portion of Luke's case we begin to understand the diagnostic spectrum for childhood dizziness and vertigo. In particular, we look at the importance of 'paediatric migraine equivalents' and offer a rationale for treating any areas of spinal dysfunction.

9. Dizziness, Balance & Posture: Scoliosis, a Balance Problem?

Educator: Dr Anthony D. Nicholson BSc MChiro DIANM

1. Recognize the clinical features of scoliosis that are characteristic of an underlying pathological cause
2. Understand the current theories on the central neurological mechanisms involved in scoliosis
3. Evaluate the scoliosis patient for functional neurological impairments that can be used as objective indicators for management
4. Explain the basis for a manual treatment approach to scoliosis

Emma is 14 years old and has a right-convex thoracic scoliosis. How likely is a pathological cause and when is an MRI necessary? Are you concerned that the curve will progress and how do you assess the risk? How is scoliosis thought to be related to functional impairments in the balance system?

LUMBOPELVIC DIAGNOSIS MASTERCLASS

Case 1 - Disc Lesions Without Neural Compression

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives

1. Appreciate the spectrum of disc pathology that presents clinically
2. Recognize clinical features from the history with high diagnostic value to identify disc lesions
3. Use clinical tests with high diagnostic value to identify disc lesions
4. Expertly interpret imaging studies and correlate the findings with clinical features to more accurately diagnose disc lesions and formulate a prognosis
5. Weigh up the management options for a disc lesion and make evidence-informed therapeutic decisions

Overview

The intervertebral disc is the most prevalent pain source in the lumbopelvic region. In case 1 we examine how and why the disc wall becomes painful and discuss the concept of 'a leaky disc'. We look at how sciatica can occur without physical nerve compression. We highlight the significance of morphology and location when it comes to assessing disc pathology on MRI, and examine the evidence when it comes to correlating pathological features such as Modic change with clinical symptoms. Finally, we discuss a rationale for the role of manual treatment in the management of disc lesions.

Case 2 - Disc Lesions with Neural Compression

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives

1. Appreciate the spectrum of disc pathology that presents clinically
2. Recognize clinical features from the history with high diagnostic value to identify disc lesions
3. Use clinical tests with high diagnostic value to identify disc lesions
4. Expertly interpret imaging studies and correlate the findings with clinical features to more accurately diagnose disc lesions and formulate a prognosis
5. Weigh up the management options for a disc lesion and make evidence-informed therapeutic decisions

Overview

The intervertebral disc is the most prevalent pain source in the lumbopelvic region. In case 1 we examine how and why the disc wall becomes painful and discuss the concept of 'a leaky disc'. We look at how sciatica can occur without physical nerve compression. We highlight the significance of morphology and location when it comes to assessing disc pathology on MRI, and examine the evidence when it comes to correlating pathological features such as Modic change with clinical symptoms. Finally, we discuss a rationale for the role of manual treatment in the management of disc lesions.

Case 3 - Facet Joint Lesions

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives

1. Appreciate the spectrum of facet joint pathology that presents clinically
2. Expertly diagnose facet lesions based upon history, examination and imaging data
3. Form a prognosis for a facet joint lesion
4. Weigh up the management options and make an evidence informed therapeutic decision

Overview

In case 3 we consider the spectrum of facet joint pathology that presents clinically. This condition ranges from the young hypermobile patient with meniscoid injury, through to the older patient with degenerative instability and synovial cysts. We start by seeking to understand the major causes of facet joint pain and the actual structures that are involved. Then we shall look at how facet joints can cause both referred pain and true sciatica (i.e. radicular pain). We will discuss the role of MRI in identifying active lesions, and in demonstrating the important clues that highlight the presence of segmental instability. Finally, we will take an in-depth look at proprioceptive impairment, and see how manual treatment might create greater spinal stability and control.

Case 4 - Sacroiliac Joint Lesions

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives

1. Appreciate the spectrum of sacroiliac joint pain and dysfunction that presents clinically
2. Recognize the clinical features in the history that have diagnostic value
3. Apply clinical tests that have the highest diagnostic value for diagnosing sacroiliac pain
4. Correlate relevant imaging findings with clinical information to formulate a prognosis
5. Weigh up the management options and make evidence informed treatment decision

Overview

In this topic we examine the spectrum of sacroiliac joint pain presentations that we meet in practice and consider a representative case. We address controversial notions of how much the sacroiliac joints are thought to move. We then try to answer the question: from where does sacroiliac pain actually arise? We evaluate the diagnostic value of the various sacroiliac tests to decide which ones offer the most meaningful information. After this, we shall look at strategies for differentiating between sacroiliac pain and other pain sources in the lower back, and the relationship between sacroiliac joint dysfunction and knee pain.

Case 5 - Spondylolysis and Spondylolisthesis

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives

1. Appreciate the spectrum of spondylolysis and spondylolisthesis that presents clinically
2. Recognize the history features that have diagnostic value for spondylolysis and spondylolisthesis
3. Using advanced imaging studies as a diagnostic tool
4. Correlate relevant imaging findings with clinical information to formulate a prognosis
5. Weigh up the management options and make evidence informed treatment decisions

Overview

What causes a spondylolysis? Does the defect itself actually hurt? If not, what is hurting? Can MRI help us to see the fracture before it takes place? What are the implications of these two conditions?

Case 6 - Lumbar Spinal Stenosis

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Learning Objectives

1. Appreciate the spectrum of spinal stenosis that presents clinically
2. Recognise the clinical features in the history that have diagnostic value
3. Apply clinical tests with diagnostic value for spinal stenosis
4. Differentiate symptomatic spinal stenosis from other diagnostic possibilities
5. Make evidence-informed management decisions for patients with spinal stenosis

Overview

Lumbar spinal stenosis is clearly a long-standing condition that takes many years to eventuate. But how does spinal stenosis exert its effects? What is the mechanism of pain? Can manual treatment actually influence this process? Is surgery an inevitable consequence? How would you make this decision? What is the role of MRI, and what would you look for?

MASTERING THE FIRST TWO CONSULTATIONS

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

General Overview:

This Clinical Masterclass focuses upon the first two consultations and helps you to carefully construct these important clinical encounters to get the best possible outcome for your patients. Do you explain how your treatment works using words and concepts that are meaningful to your patients? In this Masterclass you will learn why a neuroscience approach to patient communication is not only more effective but is the new best-practice.

The Masterclass is entirely practical - it's about getting all of the little things right each day. You'll learn how to take a brain-based approach to every aspect of a patient interaction. Are your staff using the right words when they book in a patient for the first time? What are the most important words to use when first meeting a new patient? The latest neuroscience tells us that your influence upon a patient's problem begins during the history. You must ask the right questions to reveal the individual education opportunities for every patient and create immediate understanding. But what should you have achieved by the end of the history?

This Masterclass will also walk you step-by-step through the examination process. The words, concepts and explanations that you use can either help or hinder. You must **de-educate** before you can **re-educate**. We'll look at what's most important to demonstrate and document. How do you explain a working diagnosis? What words and concepts do you use when telling a patient what's 'wrong' with them? When and why should you order imaging studies? How do you explain this to a patient?

There are so many important questions that you must answer. How does your treatment work and how much is needed? We shall look at how to move from an older 'mechanical' model to a new 'brain-based neuroscience approach' that patients can instantly relate to. From 'damaged parts' to 'brain plasticity'. We'll ensure that your words, actions and treatment all align with neuroscience best-practice.

Part 1 - Understanding the Problem of Pain

Overview:

How do you integrate the latest concepts of pain neuroscience education (PNE) into daily practice? Which neuroscience ideas form the basis of a manual treatment framework for clinical practice? How can we construct the clinical encounter from day 1 to maximise our clinical outcomes? What exactly is pain and what determines its expression?

Part 2 - Guiding Initial Expectations

Overview:

How do you construct an effective clinical encounter – one that maximises the context effect? How does the look and feel of your office influence the therapeutic outcome? Why is the word 'diagnosis' critical to use from day one? What should you have achieved by the end of the history? Why is it vital to uncover the patient's belief about the cause of their pain?

Part 3 - Calibrating Your Investigation

Overview:

Why is it important to educate the patient as you go - to demonstrate reversible functional impairments? Why are 'mechanical explanations' associated with increased fear and sense of vulnerability? What is the role of imaging? How do you decide when to image and what to explain to the patient? Do you give your patients a formal working diagnosis?

Part 4 - Words Can Harm, Words Can Heal

Overview:

Research shows that Pain Neuroscience Education (PNE) actually changes outcomes in lower back pain cases. Learn how to use metaphors to meaningfully communicate, rather than inaccurate and outdated concepts such as bones going 'in' and 'out'. Learn how to use examples from other cases as patient education tools for 'show and tell'.

Part 5 - Putting It All Together

Overview:

What is important to say at the beginning of the second visit? What do you need to do during your re-evaluation? How do you assess the initial response to treatment and continue the education process? How do you discuss goals and preferences with the patient? How do you explain treatment options and let the patient decide?

NEUROSCIENCE OF PATIENT CARE MASTERCLASS

Educator: Dr. Anthony D. Nicholson BSc MChiro DIANM

Case 1 - Moving Beyond a Mechanical Model

Learning Objective:

After completing this section, you should be able to summarize the current decision-making models for applying manual treatment and discuss their relative strengths and weakness in terms of evidence

Overview:

The chiropractic profession is diverse; diverse in technique; diverse in the language used; and even diverse in the desired outcomes for the patient. Whether you do so *consciously* or *subconsciously*, you are using a model to define and direct what you do in practice every day. It determines the type of information that you gather, how you weight the value of it, the meaning that you ascribe to it, and the decisions that you make based upon it. Irrespective of the way in which you practice, and the techniques that you prefer, as chiropractors we all have something in common - we all physically engage the human frame in order to influence the connective tissues making it up, and activate the rich sensory system embedded with it. The purpose of this case is to examine more closely what this model is based upon, and how we might expand our thinking as clinicians.

Case 2 - Orientation and Postural Stability (Parts 1 & 2)

Learning Objective:

Our history as a profession has largely focused upon how structure relates to function. Upright posture, stability and maintaining orientation in our environment are fundamental functions. By the end of this case, you should be able to confidently describe the major components of the motor system and how it is functionally organized. You should also understand the way in which visual, proprioceptive and spinal inputs converge to give rise to orientation, and the relationship between the reflex control of the spine and eyes for balance and postural stability.

Overview:

We are accustomed to thinking about motor control in a segmental way - the myotomal relationship between a neural segment of the spinal cord and the muscle groups that are wired to it. The purpose of this topic is to reconceptualise the way in which you think about motor control. From an evolutionary perspective, the foundation of our motor system is a series of

older and more medial motor pathways in the brainstem that control the movement of the spine and eyes in order to maintain postural stability.

Case 3 - Models and Maps in the New Brain

Learning Objective:

After completing this section, you should be able to summarize the clinically relevant structure and function of the neocortex. You should be able to describe the cortical column as the functional unit of the neocortex, and how these neural elements learn models of the body and objects in the world. You should be able to outline how knowledge is organized into reference frames, and more confidently explain many of the observations made in daily practice.

Overview:

It is now well accepted that patients with chronic pain and movement dysfunction have disrupted and disorganised cortical representations of their body parts. There is also evidence to show that cognitive function, such as problem-solving and decision-making, can also be affected. What do we think is really happening within the neocortex of these patients? In this section we explore the latest theories on how the neocortex learns and models the body, physical objects and higher-level concepts.

Case 4 - Pain as a Protection System

Learning Objective:

After completing this section, you should be able to summarize the clinically relevant structure and function of the neocortex. You should be able to describe the cortical column as the functional unit of the neocortex, and how these neural elements learn models of the body and objects in the world. You should be able to outline how knowledge is organized into reference frames, and more confidently explain many of the observations made in daily practice.

Overview:

It is now well accepted that patients with chronic pain and movement dysfunction have disrupted and disorganized cortical representations of their body parts. There is also evidence to show that cognitive function, such as problem-solving and decision-making, can also be affected. What do we think is really happening within the neocortex of these patients? In this section we explore the latest theories on how the neocortex learns and models the body, physical objects and higher-level concepts.

Case 5 - Conceptual Change Strategy: Reframe

Learning Objective:

After completing this case you should be able to explain how conceptual knowledge is organised in reference frames within the neocortex. You should be able to describe the principles of pain neuroscience education and illustrate the application of this technique in practice. You should be able to demonstrate the use of metaphors, analogies and other conceptual change strategies to reframe a patient's understanding of their pain and problem

Overview:

The so-called 'bottom-up' approaches that engage the peripheral system tend to be the emphasis in clinical practice. While many clinicians appreciate the power of context, trust and rapport, the importance of intentionally and purposefully reframing a patient's beliefs and conceptual model regarding their problem is still under-appreciated. A greater understanding of how conceptual knowledge is organized in the neocortex can enhance our skills in combining a powerful 'top-down' approach with our hands-on management to achieve better clinical outcomes.

Case 6 - Movement Change Strategy: Remap & Relearn

Learning Objective:

After completing this case you should be able to summarize the spectrum of mechanical and neurological mechanisms utilised in manual treatment. You should be able to theorise how therapeutic activation of the somatosensory system can target both the peripheral and central dimensions of chronic pain and dysfunction.

Overview:

A spinal manipulation – what chiropractors term an adjustment – is a rapid passive movement of a joint; a small yet lightning-fast displacement of our body tissues that is all over in less than 1/10th of a second. But how could this dynamic, short-lasting mechanical stimulus change the behaviour of the nervous system in a way that outlasts the intervention itself? In this topic we shall explore the answer to this major question, and then explore the way in which we skilfully utilise the entire spectrum of mechanical inputs with healing intent.