

Integrating Thoracic spine Rehabilitation into Practice

Facilitator



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Background

The thoracic spine has for a long time been the 'Cinderella' region of the spine; with less research and clinical focus directed to this region compared with the cervical and lumbar spine. Additionally, there continues to be a limited understanding of the aetiology and epidemiology of a range of musculoskeletal presentations, which have a biomechanical or neurophysiological connection to the thoracic spine. Through a programme of research (systematic reviews, surveys, observational studies, reliability and validity studies *etc.*) there is now a greater understanding of thoracic spine dysfunction, practice and management approaches, with novel approaches to transform the rehabilitation practices used for patients presenting with thoracic spine pain and/or dysfunction.

Objectives

This course, with a strong emphasis on integration of theory into practice, will critically evaluate evidence for the under-explored functional kinematics, primary or secondary pain sites, and asymptomatic dysfunction of the thoracic spine contributing to pain complaints in the shoulder region and adjacent spinal regions. A secondary objective is to explore the emerging interest in this spinal region with respect to best practice guidelines and evidence supporting passive and active interventions targeting the thoracic spine dysfunction when managing upper quadrant presentations; specifically an outcome focused (mobility, motor control, work capacity and strength) clinical reasoning framework for thoracic spine exercise prescription in rehabilitation. This course will offer best current evidence within a biopsychosocial framework.

Structure

This one-day course is structured in a way that can be delivered face to face or remotely, although not concurrently. The day has 4 discrete workshops, each lasting approximately 90 minutes. Each 90 minutes workshop involves dissemination of evidence informed theoretical content at level 7 (postgraduate level) and supported with practical skills. Learning has been mapped to IFOMPT Educational Standards 2016; see Appendix 1. The workshops include

1. **Thoracic pain, function & dysfunction – what do we know?**
2. **Advanced examination and management of the thoracic spine**
3. **Rehabilitation of thoracic spine – a clinical reasoning framework informing exercise prescription**
4. **Evidence into practice using case studies**

A comprehensive supporting handbook will be available to all delegates which will include power point slides as well as text which takes delegate to primary sources and resources to support post course review and further professional development in this field.

Course programme

9.00-9.15 – Key nuggets of thoracic spine anatomy influencing function
9.15-10.30 - Thoracic pain, function & dysfunction – what do we know?
Objectives
<ul style="list-style-type: none"> - To explore advanced clinical reasoning & differentiation of primary pain complaints in the thoracic spine - To critically consider the role of the thoracic spine in upper quadrant presentations - To explore evidence of dysfunction, adaptive changes and changes across the lifespan
45 mins practical Observation during arm elevation, looking over shoulder, walking and throwing, Influence of posture on functional movement
11.00-12.30 Advanced examination and management of the thoracic spine
Objectives
<ul style="list-style-type: none"> - To demonstrate critical application of spinal kinematics in the assessment of the thoracic spine - To demonstrate precision in manual assessment of dysfunction in the thoracic spine - To critically explore active movement testing in the thoracic spine with respect to validity and reliability
60 mins practical Dynamic palpation, active and passive motion evaluation to inform management
13.30-15.00 Rehabilitation of thoracic spine – a clinical reasoning framework informing exercise prescription
Objectives
<ul style="list-style-type: none"> - To critically evaluate functional movement requirements in the thoracic spine - To demonstrate advanced clinical reasoning in exercise prescription using the ICF framework - To explore advanced rehabilitation and task specificity in thoracic spine exercise prescription
30 mins – presentation ICF, functional movement evaluation
60 mins practical Mobility, motor control, work capacity and strength
15.30-17.00 Evidence into practice using case studies
Objectives
<ul style="list-style-type: none"> - Critical application of advanced knowledge and skills for the management of patients with upper quadrant presentations; chronic neck pain, rotator cuff pathology

Resources

Delegates will have access to a workbook that would include: case scenarios, literature to support patient history taking, examination and differentiation of presentations in practice. Images/figures of techniques used, clinical reasoning framework and exercise repository in photo form to support exercise prescription in practice will also be included.

Learning methods:

- Video analysis of patients
- Presentation / discussion
- Clinical case studies
- Interactive activities

Biography

Dr Nicola Heneghan is a highly experienced UK clinician and academic with 30 years' experience working in the field of musculoskeletal physiotherapy. Nicola has published >140 peer reviewed publications, written 3 book chapters and has a research H-index of 25. Nicola has supported >180 physiotherapists to successful completion of postgraduate degrees. Nicola's specific research interest is the assessment and management of thoracic pain and dysfunction in different patient populations; a central focus for her PhD which she completed in 2013. She is one of the most published authors in the world on this topic. She has travelled widely to give keynotes on the topic and written chapters on the subject for a number of seminal texts (Petty, Neuromusculoskeletal Examination and Assessment: A Handbook for Therapists, Grieve's Modern Musculoskeletal Physical Therapy). Nicola currently combines working with various universities, collaborators and her clinical practice roles. Nicola held a number of honorary positions within the MACP, including Education Lead and Chair, with her contribution to the MACP recognised with award of honorary fellowship in 2019.

Cost of course

The cost for the participant will be: **£120 for MACP members, £150 for non-members**. This cost will be reviewed annually. **This course is capped to 25 participants.**

Hosting a face to face Public course:

There is one free space available to whoever organises the course locally if minimum numbers are met. In addition, one further free space will be offered if more than 20 delegates book onto the course. If a venue fee is incurred the minimum number of people required to run the course may increase. The minimum number of delegates required to qualify for an additional free place may also increase. The course requires a minimum of 10 bookings to enable the MACP to cover expenses and will be cancelled 6 weeks prior to the commencement of the course if this number has not been reached.

If the course requires air travel (outside England) for the lecturers the prices quoted / number of bookings required will need to be adjusted to reflect the additional costs.

What the MACP Provides:

- Tutors for delivering the courses
- Pays the accommodation for the tutor(s)
- Pays tutors(s) travel
- Administers the course, taking all bookings and sending all applicants pre-course information.

- £3 per person / day to cover refreshments (tea/coffee/biscuits etc).
- Advertising in: MACP website and social media sites, MACP newsletters.
- One copy of a flyer that you may use to circulate and advertise the course
- A list of names of those who have booked prior to the course for registration.
- CPD certificates (online)

What is required to host a public course

- A lecture theatre/ large room that will seat 25 people
- Plinths (min 9)
- **AV equipment (data projection or overhead projector)**. Plus access to plugs as workbooks are electronic.
- Provide us with local information re directions how to get to venue, parking, local accommodation list.
- **Someone to work on local promotion** (including social media) to help to ensure that at 6 weeks before the course, the minimum numbers of places are booked onto the course.
- **Someone on the the day to deal with local venue organization (AV, putting up signs, providing refreshments, information about where to get lunch, registering delegates, locking up, this may also include picking up or dropping off tutors from their hotel; taking pictures on the day for SoMe)**
- Refreshments as appropriate (to be reimbursed by MACP on production of original receipts – up to
- £3 per day per person)

References (selected references)

- Archer JE, Baird C, Gardner, A Rushton A, **Heneghan NR**. (2022) Evaluating measures of quality of life in adult scoliosis: a systematic review and narrative synthesis. *Spine Deform* (2022). DOI.org/10.1007/s43390-022-00498-5
- Baird C, Archer J, Gardner A, Rushton A, **Heneghan NR**. (2022) Outcomes Evaluating Quality of Life and Their Measurement Properties in Early-onset Scoliosis: A Systematic Review. *J Pediatr Orthop*. 1;42(9):e917-e924. doi: 10.1097/BPO.0000000000002161
- Alamrani S, Gardner A, Falla D, Russell E, Rushton A, **Heneghan NR**. (2021) Content Validity of Scoliosis Research Society questionnaire-22revised (SRS-22r) for Adolescents with Idiopathic Scoliosis: protocol for a qualitative study exploring patient's and practitioner's perspectives. *BMJ Open* 11 (12), e053911. DOI: 10.1136/bmjopen-2021-053911
- Archer J, Baird C, Rushton A, Gardner A, **Heneghan NR**. (2021) Outcome Measures Evaluating Physical Functioning and their Measurement Properties in Adult Scoliosis: Protocol for a Systematic Review. *Syst Rev* 10, 259 (2021). DOI.org/10.1186/s13643-021-01811-5
- Baird C, Archer J, Gardner A, Rushton AB, **Heneghan NR**. (2021) Outcomes evaluating quality of life and their measurement properties in early-onset scoliosis: protocol for a systematic review. *BMJ Open*. 2021 Sep 6;11(9):e048956. DOI: 10.1136/bmjopen-2021-048956
- Zappala M, Lightbourne S, **Heneghan NR**. (2021) The relationship between thoracic kyphosis and age, and normative values across age groups: a systematic review of healthy adults. *J Orthop Surg Res* 16, 447 DOI.org/10.1186/s13018-021-02592-2

- Althobaiti S, Rushton A, Falla D, **Heneghan NR** (2021) Measures of trunk muscle strength and their measurement properties: a protocol for a systematic review and narrative synthesis of clinical measures. *BMJ Open* DOI: 10.1136/bmjopen-2020-041499
- Alamrani S, Rushton A, Bini E, Gardner A, Falla D, **Heneghan NR**. (2020) Outcome Measures Evaluating Physical Functioning and their Measurement Properties in Adolescent Idiopathic Scoliosis: a Systematic Review. *Spine* DOI: 10.1097/BRS.0000000000003969
- Kranenburg HA, Schmitt MA, **Heneghan NR**, Puentedura EJ, Hutting N. (2020) Manual therapists' beliefs and use of spinal thrust joint manipulation. *European Journal of Physiotherapy* DOI.10.1080/21679169.2020.1857831
- **Heneghan NR**, Puentedura EJ, Arranz I, Rushton A. (2020) Thoracic spinal manipulation: an international survey of current practice and knowledge in IFOMPT member countries. *Musculoskeletal Science and Practice* 50. DOI:10.1016/j.msksp.2020.102251
- **Heneghan NR**, Lokhaug S, Tyros I, Longvastøl S, Rushton A. (2020) A clinical reasoning framework for thoracic spine exercise prescription in sport: a systematic review and narrative synthesis. *BMJ Open SEM* 6:e000713. DOI: 10.1136/bmjsem-2019-000713
- Alamrani S, Rushton A, Gardner A, Falla D, **Heneghan NR**. (2020) Outcome Measures Evaluating Physical Functioning and their Measurement Properties in Adolescent Idiopathic Scoliosis: Protocol for a Systematic Review. *BMJ Open* 10(4):e034286. DOI:10.1136/bmjopen-2019-034286
- **Heneghan NR**, Pup C, Koulidis K, Rushton A. (2020) Thoracic adverse events following spinal manipulative therapy: a systematic review and narrative synthesis. *JMMT*. 28:5, 275-286. DOI: 10.1080/10669817.2020.1725277
- **Heneghan NR**, Fletcher E, Rushton A. Reduced thoracic spine mobility in military personnel with shoulder injuries: a multicentre observational study. *CSP PhysioUK* (2020)
- **Heneghan NR**, Webb K, Mahoney T, Rushton A. (2019) Thoracic spine mobility, an essential link in upper limb kinetic chains in athletes: A systematic review. *Translational Sports Medicine*. DOI: 10.1002/tsm2.109
- **Heneghan NR**, Gormley S, Hallam C, Rushton A. (2019) Physiotherapy management of thoracic spine pain and dysfunction: a UK current survey. *Musculoskeletal Science and Practice* 39: 58-66. DOI: 10.1016/j.msksp.2018.11.006
- **Heneghan NR**, Davies S, Puentedura EJ, Rushton A. (2018) Knowledge and Pre-Thoracic Spinal Thrust Manipulation Examination: a survey of current practice in the UK. *JMMT* 26 (5): 301-309 DOI: 10.1080/10669817.2018.1507269
- **Heneghan NR**, Baker G, Thomas K, Falla D, Rushton A. (2018) The influence of sedentary behaviour and physical activity on thoracic spinal mobility in young adults: an observational study. *BMJ Open* 8:e019371 DOI: 10.1136/bmjopen-2017-019371
- **Heneghan NR**, Smith R, Falla D, Rushton A (2018) Thoracic dysfunction in whiplash associated disorders: a systematic review and meta-analysis. *PlosOne* 13: 3. e0194235. DOI.org/10.1371/journal.pone.0194235
- Bucke J, Spencer S, Fawcett L, Sonvico L, Rushton A, **Heneghan NR** (2017) Validity of the digital inclinometer and iPhone when measuring thoracic rotation. *Journal of Athletic Training*. DOI: 10.4085/1062-6050-52.6.05.
- **Heneghan NR**, Smith R, Rushton A (2016) Thoracic dysfunction in whiplash-associated disorders: a systematic review and meta-analysis protocol. *Systematic Reviews*. 5:26. DOI: 10.1186/s13643-016-0201-0
- **Heneghan NR**, Rushton A (2016) Understanding why the thoracic region is the 'Cinderella' region of the spine. *Manual Therapy*. 21:274-276. DOI: 10.1016/j.math.2015.06.010
- **Heneghan NR** Management of the Thoracic Spine in Patients with COPD. In: Grieve's Modern Musculoskeletal Physiotherapy 4th Ed. 2015. Churchill Livingstone Chapter 44.3
- Peek A, Miller, C, **Heneghan NR**. (2015) The inclusion of thoracic manual therapy in management of shoulder: systematic review. *Journal of Manual & Manipulative Therapy*. 23 (4):176-187
- **Heneghan NR**, Adab P, Jackman S, Balanos GM (2015) Musculoskeletal dysfunction in COPD an observational study. *Int J Ther Rehabil*. 22(3): 119–28. DOI: 10.12968/ijtr.2015.22.3.119

- **Heneghan NR**, Balanos GM, Adab P, Jordan RE (2012). Manual therapy for chronic obstructive airways disease: A systematic review of current evidence. *Manual Therapy*. 17(6):507-18. DOI:10.1016/j.math.2012.05.004
- **Heneghan NR**, Balanos GM. (2010) Soft tissue artefact in the thoracic spine during axial rotation and arm elevation using ultrasound imaging: a descriptive study. *Manual Therapy* 15(6):599-602. DOI: 10.1016/j.math.2010.05.004
- **Heneghan NR**, Hall A, Hollands M, Balanos GM (2009) Stability and intra-tester reliability of an in vivo measurement of thoracic axial rotation using an innovative methodology. *Manual Therapy* 14(4):452-455. DOI: 10.1016/j.math.2008.10.004

Appendix 1. Mapping to IFOMPT Educational Standards 2016

	Mapping to MSK CCF	Mapping to IFOMPT Educational Standards 2016
<p>Objectives</p> <ul style="list-style-type: none"> - To explore advanced clinical reasoning & differentiation of primary pain complaints in the thoracic spine - To critically consider the role of the thoracic spine in upper quadrant presentations - To explore evidence of dysfunction, adaptive changes and changes across the lifespan <p>45 mins practical Observation during arm elevation, looking over shoulder, walking and throwing, Influence of posture on functional movement</p>	B2, B3, B4, B5 C6, C11, C12	D1.1, D1.3, D2.1, D2.3, D2.4
<p>11.00-12.30 Advanced examination and management of the thoracic spine</p>		
<p>Objectives</p> <ul style="list-style-type: none"> - To demonstrate critical application of spinal kinematics in the assessment of the thoracic spine & to inform intervention selection - To demonstrate precision in manual assessment of dysfunction in the thoracic spine - To critically explore active movement testing in the thoracic spine with respect to validity and reliability <p>60 mins practical Dynamic palpation, active and passive motion evaluation to inform management</p>	A2, B3, B4, B5,	D2.4, D2.5, D3.1, D3.2, D5.1, D5.2, D5.3, D6.3, D8.1, D8.2, D8.3
<p>13.30-15.00 Rehabilitation of thoracic spine – a clinical reasoning framework informing exercise prescription</p>		
<p>Objectives</p> <ul style="list-style-type: none"> - To critically evaluate functional movement requirements in the thoracic spine - To demonstrate advanced clinical reasoning in exercise prescription using the ICF framework - To explore advanced rehabilitation and task specificity in thoracic spine exercise prescription 	A1, A2, B3, B4 C6, C7, C11, C12, C13	D3.1, D4.2, D5.4, D6.1, D6.4, D7.4, D8.1, D8.2, D8.3, D8.4

<p>30 mins – presentation ICF, functional movement evaluation</p> <p>60 mins practical Mobility, motor control, work capacity and strength</p>		
<p>15.30-17.00 Evidence into practice using case studies</p>		
<p>Objectives</p> <ul style="list-style-type: none"> - Critical application of advanced knowledge and skills for the management of patients with upper quadrant presentations; chronic neck pain, rotator cuff pathology 	<p>B3, B4 C6, C7, C11, C12</p>	<p>D1.2, D2.5, D5.3, D5.4, D10.1, D10.2, D10.3, D10.4</p>