



CHIR873

Neuromusculoskeletal Diagnosis 1

S1 Day 2017

Dept of Chiropractic

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Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff

Stephney Whillier

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Matthew Fernandez

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Credit points

4

Prerequisites

Admission to MChiroprac and (CHIR311 or CHIR316 or (CHIR602 and CHIR603 and CHIR604 and CHIR605 and CHIR606 and CHIR607))

Corequisites

Co-badged status

Unit description

This unit introduces you to common neurological and orthopaedic conditions. A variety of teaching methods are employed, from didactic lectures based on current evidence that are made available online, to tutorials that are underpinned by a social constructivist approach to building knowledge, using the discussion of case studies to develop diagnostic skill. You will develop competency in neurological and orthopaedic examination and in developing a differential diagnosis based on the patient's signs and symptoms at clinical presentation. The knowledge and skills acquired during this unit are fundamental for diagnostic competence in chiropractic practice.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

- Perform the clinical neuromusculoskeletal history taking and examination competently
- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.

Develop strong clinical reasoning skills and the ability to diagnose conditions that are suitable or contraindicated in chiropractic care, including conditions of non-musculoskeletal origin

Demonstrate the ability to find, select and critique appropriate literature to answer an identified question to direct clinical diagnosis and management. Use acquired knowledge to evaluate conditions, research these cases further using appropriate reference material and communicate findings

Participate in practical sessions in which the knowledge acquired from texts and lectures is applied in a group situation. Reason, question and communicate your understandings to your peers and tutors as you complete tasks set in the practicals

Develop a respect and empathy for patients, and an ethical and professional attitude to health care. In this regard, you should develop a commitment to remain informed and up-to-date in your profession

General Assessment Information

Examinations

The Semester 1 University Examination period is from: 12th of June – 30th of June, 2017.

You are expected to present yourself for examination at the time and place designated in the University examination timetable. The timetable will be available in draft form approximately eight weeks before the commencement of the examinations and in final form approximately four weeks before the commencement of the examinations:

<http://www.timetables.mq.edu.au/exam>

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for disruption to studies. Information about the disruption to studies process is available at

http://students.mq.edu.au/student_admin/exams/disruption_to_studies/

In particular, pay attention to the following information on the Disruption to Studies site:

The [disruption to studies policy](#) applies only to serious and unavoidable disruptions that arise after a study period has commenced.

Serious and unavoidable disruption: The University classifies a disruption as **serious and unavoidable** if it:

- could not have reasonably been anticipated, avoided or guarded against by the student; and
- was beyond the student's control; and
- caused substantial disruption to the student's capacity for effective study and/or

- completion of required work; and
- occurred during an event critical study period and was at least three (3) consecutive days duration, and/or
- prevented completion of a final examination.

Students with a pre-existing disability/health condition or prolonged adverse circumstances may be eligible for ongoing assistance and support. Such support is governed by other policies and may be sought and coordinated through [Campus Wellbeing and Support Services](#).

If a supplementary examination is granted as a result of the disruption to studies process the examination will be scheduled after the conclusion of the official examination period. (Individual Faculties may wish to signal when the Faculty Supplementary exams are normally scheduled.)

It is important to realise that you must not put in a Disruption to Studies ahead of a final examination. If you are granted a supplementary exam via the Disruption to Studies process, you will have to write a supplementary exam in the supplementary exam period. In this scenario, only your supplementary exam mark will count towards your final exam mark, irrespective of whether or not you attended the final exam in the normal examination period. The submission of a Disruption to Studies form should not be used as a 'just in case' strategy.

NOTE: Supplementary exams may be in a different format to the exam set in the normal examination period e.g. oral examination.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. You are expected to ensure that you are available until the end of the teaching semester that is the final day of the official examination period.

Please note: If you apply for Disruption to Study for your final examination, you must make yourself available for the week of July 24 – 28, 2017. If you are not available at that time, there is no guarantee an additional examination time will be offered. Specific examination dates and times will be determined at a later date.

Returning Assessment Task

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1. The case study will be returned in the first tutorial of semester 2, and feedback will be given.
2. OSCE: Scoring sheets will be returned to students for feedback purposes.
3. Examination: Papers will not be returned. Marks will be incorporated into the final unit grade.

Extensions and penalties

Extensions to assignments are at the discretion of the unit convenor. It is your responsibility to

prove to the convenor that there has been unavoidable disruption. Marks will be deducted for late submissions in the absence of an approved extension.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Orthopaedics OSCE I</u>	15%	No	Week 6
<u>Neurology OSCE I</u>	10%	No	Week 7
<u>Orthopaedics OSCE II</u>	15%	No	Week 12
<u>Neurology OSCE II</u>	10%	No	Week 13
<u>Neurology Case Study</u>	10%	No	Week 11
<u>Final Examination</u>	40%	No	Examination Period

Orthopaedics OSCE I

Due: **Week 6**

Weighting: **15%**

Invigilated practical assessment

On successful completion you will be able to:

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Neurology OSCE I

Due: **Week 7**

Weighting: **10%**

Invigilated practical assessment

On successful completion you will be able to:

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- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.
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Orthopaedics OSCE II

Due: **Week 12**

Weighting: **15%**

Invigilated practical assessment

On successful completion you will be able to:

- Perform the clinical neuromusculoskeletal history taking and examination competently
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- Develop strong clinical reasoning skills and the ability to diagnose conditions that are suitable or contraindicated in chiropractic care, including conditions of non-musculoskeletal origin

- Participate in practical sessions in which the knowledge acquired from texts and lectures is applied in a group situation. Reason, question and communicate your understandings to your peers and tutors as you complete tasks set in the practicals
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Neurology OSCE II

Due: **Week 13**

Weighting: **10%**

Invigilated practical assessment

On successful completion you will be able to:

- Perform the clinical neuromusculoskeletal history taking and examination competently
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Neurology Case Study

Due: **Week 11**

Weighting: **10%**

Non-invigilated case study write up

On successful completion you will be able to:

- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical

examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.

- Develop strong clinical reasoning skills and the ability to diagnose conditions that are suitable or contraindicated in chiropractic care, including conditions of non-musculoskeletal origin
- Demonstrate the ability to find, select and critique appropriate literature to answer an identified question to direct clinical diagnosis and management. Use acquired knowledge to evaluate conditions, research these cases further using appropriate reference material and communicate findings

Final Examination

Due: **Examination Period**

Weighting: **40%**

3 hour closed-book invigilated final examination

On successful completion you will be able to:

- Perform the clinical neuromusculoskeletal history taking and examination competently
- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.
- Develop strong clinical reasoning skills and the ability to diagnose conditions that are suitable or contraindicated in chiropractic care, including conditions of non-musculoskeletal origin

Delivery and Resources

Strand 1: Orthopaedics

One 2 hour lecture for orthopaedics is scheduled on Mondays in weeks 1-13 , and one 2 hour lecture in weeks 3 - 11 on Wednesday in Semester 1, 2017

A 2 hour tutorial for orthopaedics is scheduled on Thursdays in weeks 2-12 in Semester 1, 2017

Notes are summarised under 'Lectures' and 'Tutorials' on iLearn for CHIR 873

Required:

1. Magee D.J. (2013). Orthopaedic Physical Assessment. 6th Edition. W.D Saunders, Philadelphia

Recommended Reading

1. Brukner P, Khan, K. (2011) Brukner & Khan's Clinical Sports Medicine. 4th Ed. McGraw-Hill Book Company Australia.
2. Souza TA. (1997) Differential Diagnosis for the Chiropractor. Aspen Publications.
3. Hammer W. 3rd Ed. Functional Soft Tissue Examination & Treatment by Manual Methods. Jones and Barlett, Sudbury Massachusetts.
4. Evans RC. (2008) Illustrated Orthopaedic Physical Assessment. Mosby.

NOTE: Weekly tutorial case reports, clinimetric tools, and readings will be made available through iLearn.

Strand 2: Neurology

One 2 hour lecture for neurology is scheduled on Tuesdays in weeks 1-12, and one 2 hour lecture in weeks 1 - 2, and 12 on Wednesday, in Semester 1, 2017

A 2 hour tutorial for neurology is scheduled on Wednesdays in weeks 2-13 in Semester 1, 2017

Notes are summarised under 'Lectures' on iLearn for CHIR 873 and in the tutorial course manual for neurology, available at the Co-Op.

Required:

1. Blumenfeld H (2010) *Neuroanatomy through Clinical Cases*. 2nd ed. Sinauer Associates Inc, Massachusetts. Distributed by Palgrave Macmillan, Victoria, Australia.
2. CHIR873 - Neurology *Tutorial Course Manual* – available at Co-op bookshop. Macquarie University Printery.

Recommended:

- Gates P (2010) *Clinical Neurology A Primer*. Churchill Livingstone Elsevier, Sydney, Australia
- Krebs C et al (2012) *Neuroscience* in Lippincott's Illustrated Reviews (Harvey RA Ed) LWW, USA
- Kandel ER et al (2000) *Principles of Neural Science, 4th ed*. McGraw-Hill, New York.
- Jull, GA et al (2008) *Whiplash, headache, and neck pain: Research-based directions for physical therapies*, 1st ed. Churchill Livingstone: Elsevier, Edinburgh.
- Olesen J et al (2006) *The Headaches 3rd ed*. LWW, PA.
- Souza TA (2005) *Differential diagnosis and management for the chiropractor 3rd ed*. Jones & Bartlett Pub, Massachusetts.
- Purves D et al (2012) *Neuroscience 5th ed*. Sinauer Inc, USA
- McCance KL et al (2010) *Pathophysiology, The biologic basis for disease in adults and*

children Mosby, Elsevier, Canada

- Bickley LS (2009) *Bate's Guide to Physical Examination and History Taking 10th ed.* Wolters Kluwer/Lippencott Williams & Wilkins, PA

Required Diagnostic Equipment (Neurological Diagnosis Kit):

1. A diagnostic set with otoscope and ophthalmoscope (Welsh Allen series 97200-BI recommended - ~\$515)
2. A tailor's measuring tape
3. A 128 and 512Hz tuning fork (Al weighted)
4. Neurotips (no sewing pins or pinwheels allowed strictly by OHS/Biosafety regulations)
5. Large stem ear buds
6. Disposable tongue depressors
7. Tomahawk reflex hammer

Unit Schedule

NEUROLOGY

Start Date of wk	Lecture (Tuesday, 9 – 11 am)	Lecture (Wednesday, 9-11am)	Tutorial (Wednesday 2 - 4, 4 - 6 pm)
27 Feb	Introduction to Clinical Neurology Pain	Nerve Tension Tests	None
6 Mar	Pain	Nerve Tension Tests and Mobilisations	Nerve Tension Tests and Mobilisations
13 Mar	Altered cognition		Nerve Tension Tests and Mobilisations
20 Mar	Psychiatric disorders		Neurological History Taking The Neuroexam: mental status
27 Mar	Sleep disorders		Neuroexam: mental status
3 April	Eye Presentations		Neuroexam: cranial nerves
10 April	Hearing and Balance Presentations		OSCE
17 April – 29 April: Mid-semester Break			

1 May	Cerebrovascular Disease and Brain Neoplasms		Neuroexam: cranial nerves
8 May	Lesions of the Spinal Cord and Localisation of the Lesion		Neuroexam: motor
15 May	Lesions of the Spinal Cord and Localisation of the Lesion		Neuroexam: motor
22 May	Common Lesions of the NS		Neuroexam: sensory
29 May	Common Lesions of the NS	Common Lesions of the NS, Seizures	Neuroexam: sensory, examination of peripheral nerves
5 June			OSCE

ORTHOPAEDICS

WEEK	LECTURE 1	LECTURE 2	Tutorial
1	Introduction to Orthopaedics (B. Brown)	Neurology Lecture	No Tutorial
2	Lower Back Pain due to Serious pathology (B. Brown)	Neurology Lecture	Orthopaedic Assessment of the Lumbar Spine – Part I
3	Lower Back Pain with Associated Radiculopathy I (B. Brown)	Lower Back Pain with Associated Radiculopathy II (B.Brown)	Orthopaedic Assessment of the Lumbar Spine – Part II
4	Lumbar Spine Spondylosis and Stenosis (B.Brown)	Lumbar Spine Spondylolysis and Spondylolisthesis (B.Brown)	Orthopaedic assessment of Lumbar Spine Stability, and Generalised Hypermobility

5	Lumbar Instability and Hypermobility (B.Brown)	Non-Specific Lower Back Pain (B.Brown)	Orthopaedic Assessment of the Sacroiliac Joint and Coccyx
6	Disorders of the sacroiliac Joint and Coccyx (B.Brown)	Leg Length Discrepancy (B.Brown)	Orthopaedics OSCE 1
Mid Semester Break April 17th – 29th, 2017			
7	Orthopaedic Assessment of the Older Patient (B.Brown)	Soft tissue causes of hip pain (M.Pribicevic)	Orthopaedic Assessment of the Hip - Part I
8	Myofascial & neural causes of hip pain (M.Pribicevic)	Osteological Causes of Hip Pain (M.Pribicevic)	Orthopaedic Assessment of the Hip - Part II and Knee - Part I
9	Meniscal and cruciate ligament injuries (B.Brown)	Collateral injuries, rotatory instability and myofascial disorders of the knee (B.Brown)	Orthopaedic Assessment of the Knee – Part II
10	Patellofemoral and growth plate disorders of the knee (B.Brown)	Injuries of the lower leg and ankle (B.Brown)	Orthopaedic Assessment of the Foot and Ankle - Part I
11	Nerve entrapment in the lower extremity (B.Brown)	Joint & ligament disorders of the ankle (B.Brown)	Orthopaedic Assessment of the Foot and Ankle - Part II

12	Disorders of the mid-foot, forefoot and toes (B.Brown)	Neurology Lecture	Orthopaedics OSCE 2
13	No Lecture	Review Lecture (B.Brown)	No Tutorial

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy_2016.html

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)

- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- Perform the clinical neuromusculoskeletal history taking and examination competently
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- Demonstrate the ability to find, select and critique appropriate literature to answer an identified question to direct clinical diagnosis and management. Use acquired knowledge to evaluate conditions, research these cases further using appropriate reference material and communicate findings

- Participate in practical sessions in which the knowledge acquired from texts and lectures is applied in a group situation. Reason, question and communicate your understandings to your peers and tutors as you complete tasks set in the practicals
- Develop a respect and empathy for patients, and an ethical and professional attitude to health care. In this regard, you should develop a commitment to remain informed and up-to-date in your profession

Assessment tasks

- Orthopaedics OSCE I
- Neurology OSCE I
- Orthopaedics OSCE II
- Neurology OSCE II
- Neurology Case Study
- Final Examination

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- Perform the clinical neuromusculoskeletal history taking and examination competently
- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.
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Assessment tasks

- Orthopaedics OSCE I
- Neurology OSCE I
- Orthopaedics OSCE II
- Neurology OSCE II
- Neurology Case Study
- Final Examination

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- Perform the clinical neuromusculoskeletal history taking and examination competently
- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.
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Assessment tasks

- Orthopaedics OSCE I
- Neurology OSCE I
- Orthopaedics OSCE II
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- Neurology Case Study
- Final Examination

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Perform the clinical neuromusculoskeletal history taking and examination competently
- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.
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- Final Examination

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcomes

- Perform the clinical neuromusculoskeletal history taking and examination competently
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- Final Examination

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- Perform the clinical neuromusculoskeletal history taking and examination competently
- Show an ability to draw on acquired theoretical knowledge (anatomy, physiology, pathology, diagnostic test accuracy and clinometrics) in order to tailor the physical examination to the clinical presentation of the patient and from this develop a differential diagnosis and clinical management plan.
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