HLTH109

Anatomical Sciences 2: Anatomy of Limbs and Back

S2 Day 2013

Chiropractic

Contents

General Information

Unit convenor and teaching staff
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Credit points
3

Prerequisites
HLTH108(P)

Corequisites

Co-badged status

Unit description
This unit builds on the basic anatomy taught in HLTH108 Anatomical Sciences 1. It focuses on the anatomy of the upper and lower limbs. The unit utilises an integrated approach within which relevant gross anatomy, histology and embryology, as well as clinical and applied anatomy are incorporated. Reference is made to locomotion, posture and the structural specialisations for chiropractic manipulative and tactile functions of the limbs.

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:

Describe and identify the structural an functional features of the bones and joints of the limbs and back

Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation

Comprehend the relationship between the structural components of the limbs and back

and their functions

Describe and identify the nerve supply of the limbs and back

Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back

Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions

Identify bony landmarks on radiographs of upper and lower limb and back and identify major structures on selected radiographs, CT and MRI images

Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies

Show an appreciation and respect for those who have bequeathed their bodies to research

Assessment Tasks

Name	Weighting	Due
Online quiz 1	7%	26 August 2013
Test 1	13%	27 August 2013
Online quiz 2	7%	14 October 2013
Test 2	13%	15 October 2013
Online quiz 3	7%	4 November 2013
Test 3	13%	5 November 2013
Exam	40%	University examination period

Online quiz 1

Due: **26 August 2013**
Weighting: **7%**

Online quiz includes practical and theoretical questions related to the anatomy of the upper limb. It also contains questions in applied and clinical anatomy.

On successful completion you will be able to:

- Describe and identify the structural an functional features of the bones and joints of the limbs and back

- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies

Test 1

Due: **27 August 2013**
Weighting: **13%**

Spot test in the anatomy laboratory focusing on the upper limb; utilising cadaveric specimens, bones, x-rays, surface anatomy photographs.

On successful completion you will be able to:

- Describe and identify the structural an functional features of the bones and joints of the limbs and back
- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies
- Show an appreciation and respect for those who have bequeathed their bodies to research

Online quiz 2

Due: **14 October 2013**
Weighting: **7%**

Online quiz includes practical and theoretical questions related to the anatomy of the lower limb. It also contains questions in applied and clinical anatomy.

On successful completion you will be able to:

- Describe and identify the structural an functional features of the bones and joints of the limbs and back
- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies

Test 2

Due: **15 October 2013**
Weighting: **13%**

Spot test in the anatomy laboratory, focusing on the lower limb; utilising cadaveric specimens, bones, x-rays, surface anatomy photographs.

On successful completion you will be able to:

- Describe and identify the structural an functional features of the bones and joints of the limbs and back
- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions

- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies

Online quiz 3

Due: **4 November 2013**
Weighting: **7%**

Online quiz includes practical and theoretical questions related to the anatomy of the back. It also contains questions in applied and clinical anatomy.

On successful completion you will be able to:

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks on radiographs of upper and lower limb and back and identify major structures on selected radiographs, CT and MRI images
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies

Test 3

Due: **5 November 2013**
Weighting: **13%**

Spot test in the anatomy laboratory, focusing on the back; utilising cadaveric specimens, bones, x-rays, surface anatomy photographs.

On successful completion you will be able to:

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks on radiographs of upper and lower limb and back and identify major structures on selected radiographs, CT and MRI images

- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies
- Show an appreciation and respect for those who have bequeathed their bodies to research

Exam

Due: **University examination period**
Weighting: **40%**

Theory exam covering the anatomy of the limbs and back. It consist of multiple choice questions, short answer questions and clinical cases.

On successful completion you will be able to:

- Describe and identify the structural an functional features of the bones and joints of the limbs and back
- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks on radiographs of upper and lower limb and back and identify major structures on selected radiographs, CT and MRI images
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies
- Show an appreciation and respect for those who have bequeathed their bodies to research

Delivery and Resources

This unit is characterised by a moderate degree of flexibility. It incorporates a variety of learning tools and media. It will comprise:

1. 3 x 1 hour lectures per week, weeks 1 - 13

2. 1 x 2 hours laboratory session, weeks 1 - 13

3. 1 x 1 hour tutorials per week, weeks 1 - 13

Prescribed textbooks and leraning materials:

- Drake RL & Lowrie (2009) *Gray's Anatomy for Students*. 2nd ed. Elsevier.

or

- Moore KL, Agur AMR, & Dalley AF. (2013) *Clinically Oriented Anatomy* 7th ed. Lippincott Williams & Wilkins. Baltimore.
- HLTH109 Laboratory Course Manual – available at Co-op bookshop. Macquarie University Printery.
- Abrahams PH, Boon J & Spratt JD (2009) *McMinn's Clinical Atlas of Human Anatom*y. 6th ed. Mosby/Saunder Elsevier.
- Anatomy TV - available through the university library
- Virtual anatomy tutorials - available through iLearn

Unit Schedule

WEEK	LECTURE (Monday)	LECTURE (Tuesday)	LAB PRACTICAL (Tuesday)	TUTORIAL (Wednesday)
1 30 July	Introduction to unit Overview of upper limb Shoulder	Shoulder	Introduction to laboratory classes Shoulder	Shoulder
2 6 August	Arm Elbow	Forearm	Arm and elbow	Arm and elbow
3 13 August	Wrist Hand	Vessels and lymphatics of upper limb	Forearm and wrist	Forearm and wrist

4 20 August	Nerves of the upper limb Embryological development of limbs	Revision of upper limb	Hand Vessels and nerves of the upper limb	Vessels and nerves of the upper limb
5 27 August	Overview of lower limb Pelvis and hip	Gluteal region	Test 1	Test 1 (results and discussion)
6 3 September	Thigh Thigh	Knee	Hip and thigh	Hip and thigh
7 10 Sept.	Leg Leg	Ankle and foot	Knee and leg	Knee and leg
	MID-SEMESTER	**BREAK**		
8 1 October	Public holiday	Ankle and foot	Ankle and foot	Ankle and foot
9 8 October	Nerves of lower limbs Vessels of the lower limb	Gait and locomotion	Vessels and nerves of the lower limb	Vessels and nerves of the lower limb
10 15 October	Overview of vertebral column Bones	Ligaments	Test 2	Test 2 (results and discussion)
11 22 October	Muscles of the back	Development of the vertebral column	Bones and ligaments	Bones and ligaments
12 29 October	Trunk wall	Revision	Muscles of the back Trunk wall	Muscles of the back trunk wall
13 5 November	Revision	Revision	Test 3	Test 3 (results and discussion)

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://www.mq.edu.au/policy/docs/academic_honesty/policy.html

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

Grading Policy http://www.mq.edu.au/policy/docs/grading/policy.html

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

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Special Consideration Policy http://www.mq.edu.au/policy/docs/special_consideration/policy.html

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

Student Support

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at: http://students.mq.edu.au/support/

UniWISE provides:

- Online learning resources and academic skills workshops http://www.students.mq.edu.au/support/learning_skills/
- Personal assistance with your learning & study related questions.
- The Learning Help Desk is located in the Library foyer (level 2).
- Online and on-campus orientation events run by Mentors@Macquarie.

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

Details of these services can be accessed at http://www.student.mq.edu.au/ses/.

IT Help

If you wish to receive IT help, we would be glad to assist you at http://informatics.mq.edu.au/help/.

When using the university's IT, you must adhere to the Acceptable Use Policy. The policy applies

to all who connect to the MQ network including students and it outlines what can be done.

Graduate Capabilities

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Comprehend the relationship between the structural components of the limbs and back and their functions
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies
- Show an appreciation and respect for those who have bequeathed their bodies to research

Assessment tasks

- Online quiz 1
- Test 1
- Online quiz 2
- Test 2
- Online quiz 3
- Test 3
- Exam

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcomes

- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks on radiographs of upper and lower limb and back and identify major structures on selected radiographs, CT and MRI images
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- Test 3
- Exam

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Describe and identify the structural an functional features of the bones and joints of the

limbs and back
- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
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Assessment tasks

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- Test 1
- Online quiz 2
- Test 2
- Online quiz 3
- Test 3
- Exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation

- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back
- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
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- Test 1
- Online quiz 2
- Test 2
- Online quiz 3
- Test 3
- Exam

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Name and identify the muscles of the limbs and back and describe their origin, insertion, action and innervation
- Comprehend the relationship between the structural components of the limbs and back and their functions
- Describe and identify the nerve supply of the limbs and back

- Describe and identify the arterial supply, venous and lymphatic drainage of the limbs and back
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies

Assessment tasks

- Online quiz 1
- Online quiz 2
- Online quiz 3
- Exam

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcomes

- Comprehend the relationship between the structural components of the limbs and back and their functions
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies
- Show an appreciation and respect for those who have bequeathed their bodies to research

Assessment tasks

- Online quiz 1
- Online quiz 2
- Online quiz 3
- Exam

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies
- Show an appreciation and respect for those who have bequeathed their bodies to research

Assessment tasks

- Online quiz 1
- Online quiz 2
- Online quiz 3
- Exam

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcome

- Show an appreciation and respect for those who have bequeathed their bodies to research

Assessment tasks

- Test 1
- Test 2

- Test 3
- Exam

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcome

- Show an appreciation and respect for those who have bequeathed their bodies to research

Assessment tasks

- Test 1
- Test 2
- Test 3
- Exam