

Student slides



The aim of this resource is to build a bank of knowledge that can be used throughout the course as well as at the end for review.

A favoured layout is to print two slides per A3 sheet; many students find the large visual style manageable, engaging and valuable as a supplement to other notes and resources.



On print-outs, fill in the blanks as you work your way through the slides

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Types of synovial joint		
You need to know ... 3		
 Fill in the gaps		
Name		
B_____ & S_____	H_____	C_____
Description		
The rounded end of one bone fits into a cuplike end of the other bone. 3 planes of movement • frontal • transverse • sagittal	The convex* surface of one bone fits into the concave* surface of the other bone(s). 1 plane of movement • sagittal	Similar to a ball and socket joint, but the curved surfaces are much flatter. 2 planes of movement • frontal • sagittal
Examples		
1. 2.	1. 2. 3.	1.
*convex: a surface that curves outwards. *concave: a surface that curves inwards.		

Movements	
You need to know ... 11	
_____	_____
joint angle decreases. limb (usually*) moves forwards.	joint angle increases. limb (usually*) moves backwards.
_____	_____
limb moves away from midline.	limb moves towards midline.
_____	_____
limb parallel to ground and moves forwards.	limb parallel to ground and moves backwards.
_____	_____
limb turns about its longitudinal axis towards midline of body. Draws dot.	limb turns about its longitudinal axis away from midline of body. Draws dot.
_____	_____
limb moves to describe a cone. Draws circle.	
_____	_____
toes lifted up towards shin.	toes pointed down towards ground.
* flexion of shoulder, wrist, hip: limb moves forwards BUT flexion of knee limb moves backwards. Vice versa for extension.	

Antagonistic muscle pairs	
You need to know ... 9 pairs	
Muscles of the shoulder joint:	
Anterior deltoid	P_____ deltoid
M_____ deltoid	Latissimus dorsi
P_____ m_____	Teres m_____
Muscles of the elbow joint:	
_____	_____
Muscles of the wrist joint:	
Wrist _____	Wrist _____
Muscles of the hip joint:	
I_____	Gluteus maximus
Gluteus medius & minimus	Adductor I_____, b_____ & m_____
Muscles of the knee joint:	
(Hamstring group) Biceps _____ Semi-_____ Semi-_____	(Quadriceps group) Rectus _____ Vastus _____ Vastus _____ Vastus _____
Muscles of the ankle joint.	
T_____ anterior	G_____ & Soleus

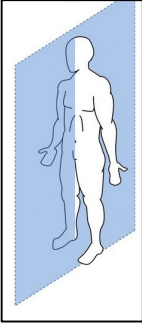
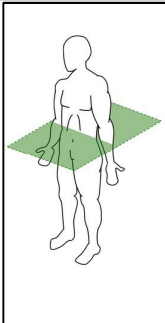
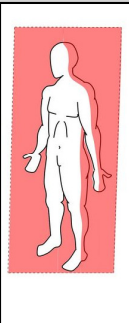
Planes of movement, Functional roles of muscles: An Overview

Planes of movement

You need to know ... 3



Fill in the gaps

Names			
Position	Divides body & 	Divides body & 	Divides body & 
Body Movement	Forwards & backwards. Example: _____	Rotational. Example: _____	Right & left lateral. Example: _____
Joint Movement	_____ & _____	Rotation	_____ & _____
	D_____ flexion & P_____ flexion	H_____ flexion & H_____ extension	

Functional roles of muscles

You need to know ... 3

Agonist	The muscle responsible for the _____ at a joint
Example	The _____ during flexion of the elbow
Antagonist	The muscle that _____ or relaxes as the agonist contracts. It has an action opposite to that of the _____.
Example	The _____ during flexion of the elbow
Fixator	The muscle(s) that _____ the joint where the _____ of the agonist sits . It helps the agonist function efficiently.
Example	The rotator cuff muscles (guardians of the shoulder joint), or the _____ during flexion of the elbow.

1.3

Type of
synovial joint

The shoulder joint

The four main muscles responsible for rotation of the shoulder joint are the Rotator Cuff muscles. Just one of these (teres minor) is named on of OCR spec.



Fill in the
blank boxes

Joint movement	Plane of movement	Agonist muscle	Antagonist muscle	Fixator muscle	Sporting example
	Sagittal	Anterior deltoid		Trapezius	
Extension			Anterior deltoid	Trapezius	
		Medial deltoid	Latissimus dorsi		Outward arm movement as GK prepares to save penalty.
Adduction				Trapezius	Inward arm movement as footballer sets up defensive wall.
	Transverse	Pectoralis major	Teres minor	This is a muscle not named on p9 of OCR spec.	
Horizontal extension	Transverse			Trapezius	Preparation phase of discus throw.
		Anterior deltoid Latissimus dorsi Pectoralis major	Posterior deltoid Teres minor		Execution of topspin forehand drive.
		Posterior deltoid Teres minor	Anterior deltoid Latissimus dorsi Pectoralis major		
Circumduction	Multiplane	A combination of all the shoulder joint muscles.			

1.4

The elbow joint

Type of synovial joint		
Joint movement		
Plane of movement		
Agonist muscle		
Antagonist muscle		
Fixator muscle		
Sporting example		



Fill in the blank boxes

The wrist joint

Type of synovial joint		
Joint movement		
Plane of movement		
Agonist muscle		
Antagonist muscle		
Fixator muscle	This is a muscle not named on p9 of OCR spec.	This is a muscle not named on p9 of OCR spec.
Sporting example		



Fill in the blank boxes

1.5

Type of
synovial joint

The hip joint



Fill in the
blank boxes

Joint movement	Plane of movement	Agonist muscle	Antagonist muscle	Fixator muscle	Sporting example
Flexion				Latissimus dorsi	
Extension				Latissimus dorsi	
			Adductor longus, brevis & magnus	Latissimus dorsi	
		Adductor longus, brevis & magnus		Iliopsoas	
Medial rotation			Gluteus maximus	Latissimus dorsi Iliopsoas	
Lateral rotation		Gluteus maximus		Latissimus dorsi	

1.6

The knee joint

Type of synovial joint			 Fill in the blank boxes
Joint movement			
Plane of movement			
Agonist muscle	Hamstring group: 1. 2. 3.	Quadriceps group: 1. 2. 3. 4.	
Antagonist muscle	Quadriceps group: 1. 2. 3. 4.	Hamstring group: 1. 2. 3.	
Fixator muscle			
Sporting example	Driving phase of rowing stroke.	Preparation phase of a kick.	

  In a movement analysis you only need to name one of each group.

The ankle joint

Type of synovial joint			 Fill in the blank boxes
Joint movement			
Plane of movement			
Agonist muscle			
Antagonist muscle	Gastrocnemius & soleus	Tibialis anterior	
Fixator muscle	Hamstring group	Quadriceps group	
Sporting example			