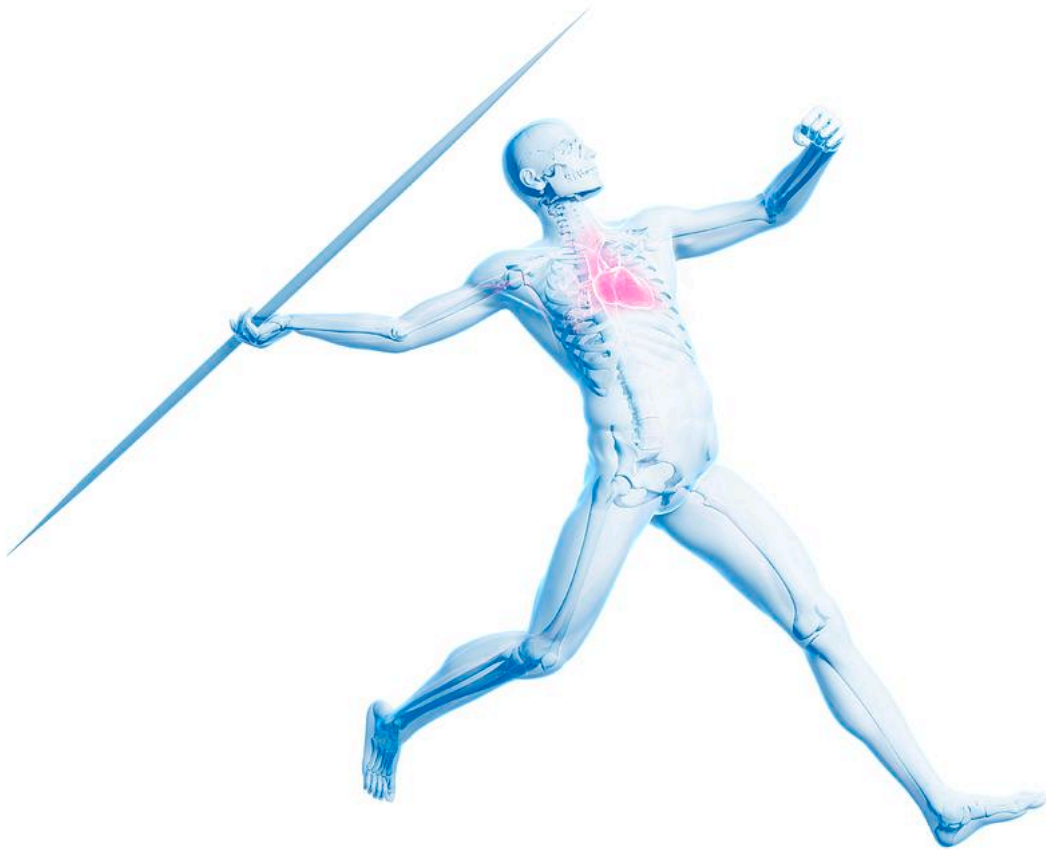


Unit 1: Anatomy and Physiology

Transition work – week 3



Name: _____

Section B – The effects of exercise and sports performance on the Muscular system

B2 – Major Skeletal muscles of the muscular system

Skeletal muscles fatigue and are voluntary – that is they are under our control. It is these muscles that allow us to stand up, walk, run and wiggle our little toes.

Locate the following muscles on the diagram below

WORD BANK

Deltoids, Biceps, Wrist Flexors, Triceps, Wrist Extensors, Supinator & Pronators, Abdominals, Pectorals, Quadriceps, Obliques, Tibialis anterior, Hip flexors, Erector Spinae, Trapezius, Latissimus Dorsi, Gluteals, Hamstrings, Gastrocnemius, Soleus,



B4 – Types of skeletal muscle contraction

There are three different types of skeletal muscle contraction.
Write a **description** and **example** of each in the spaces below:

CONCENTRIC

ISOMETRIC

ECCENTRIC

TASK: Identify the types of muscle contractions, and in some cases the muscles, that are being utilised in the following sentences:

“As a footballer lifts his foot backwards in preparation to kick the ball, the hamstring muscle contraction is: _____ and the quadriceps muscle contraction is: _____.”

As he straightens his leg to strike the ball, the hamstring muscle contraction is: _____ and the quadriceps muscle contraction is: _____”

“A prop position in the scrum position uses _____ muscle contraction to push against the opponents. He engages the _____ and _____ muscles in his legs.”

*“As a sprinter lifts his foot and bends his knee the _____ muscle contraction is **concentric** and the _____ muscle contraction is _____”*

*As he straightens his leg and puts his foot on the floor the _____ muscle is **eccentric** and the muscle contraction is _____”*

“The muscle contraction used when holding the ‘push’ position in a press up is:

*_____”
The main muscles used to maintain this position are: _____, _____ & _____”*

B5 – Fibre Types

There are 3 main fibre types:

- **Type I**
- **Type IIa**
- **Type IIx**

Have a read through the information below and add some sporting examples. Make sure you learn this table-you may be tested on it later!

Type I	Type IIa	Type IIx
<ul style="list-style-type: none"> ▪ <i>Slow twitch fibres</i> ▪ <i>Contract slowly</i> ▪ <i>Produce low force</i> ▪ <i>Can cope with prolonged activity</i> ▪ <i>Are slow to fatigue</i> ▪ <i>High aerobic capacity</i> ▪ <i>Good for low intensity exercise including long endurance events, such as;</i> 	<ul style="list-style-type: none"> ▪ <i>Fast twitch fibres</i> ▪ <i>Fast contracting (but not as fast as Type IIx)</i> ▪ <i>Medium force</i> ▪ <i>Aerobic capacity</i> ▪ <i>Fairly resistant to fatigue</i> ▪ <i>Good for moderate intensity activities including middle distance events, such as;</i> 	<ul style="list-style-type: none"> ▪ <i>Fast twitch fibres</i> ▪ <i>Fast contracting</i> ▪ <i>Produce high force</i> ▪ <i>Fast to fatigue due to buildup of lactic acid</i> ▪ <i>Produce explosive power</i> ▪ <i>Good for short high intensity anaerobic events</i> ▪ <i>Recruited for activities requiring maximal all-out physical exertion, such as;</i>

Type I – Sporting examples

Type IIa – Sporting examples

Type IIx – Sporting examples