



**INTERNATIONAL  
MASSAGE  
ACADEMY OF  
SWITZERLAND**



**MAREY EL HAMOULY**

MASSAGE MASTERCLASS

**Welcome to  
Introduction of**



**ANATOMY & PHYSIOLOGY**

**For**

**Myoskeletal Massage Therapy**

**Masterclasses**

*“Here is where the lesson and the career of Massage Begin”*

Practitioner’s Training Manual

By

Marey El Hamouly



“I advise you to read this training manual before you start practical session”

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L.M.T/ M.M.T/A.E.T

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President

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**IMAS**

*“Health is not everything, but everything is nothing without health”*

Once you would like to elevate and develop your Massage skills, This 100% Masterclass of techniques and is made to take you to the next level of skills which you can really help and treat your clients.

**A** professional and personalized learning solution for leading Massage Therapists to next level.

**I am cordially** inviting you to discover the world of human body Anatomy and Physiology analysis.

**A**s a mechanical Massage and manual Massage therapist, you start from here to let your clients Enjoy the highest level of personalized world-known services and total wellness... you know Anatomy, you do the job well.

Thank you

Marey El Hamouly



## COURSE DETAILS

Our body is very interested and very complicated, which is very attached.

**Marey is an International Approved Continuing Education Provider (IAPCE) for Therapeutic Massage and Bodywork.**

In this Masterclass, Marey El Hamouly guides you step by step to know more about the muscles of human body, to give your massage clients an incredible treatment and massage experience.

You will learn this masterclass then you will change your massage language with your clients.

**You will learn:**

About human body muscles, types and functions

**You will also study:**

You will know about much muscles which we massage daily.

Introduction of  
**ANATOMY & PHYSIOLOGY**  
For  
Myoskeletal Massage Therapy

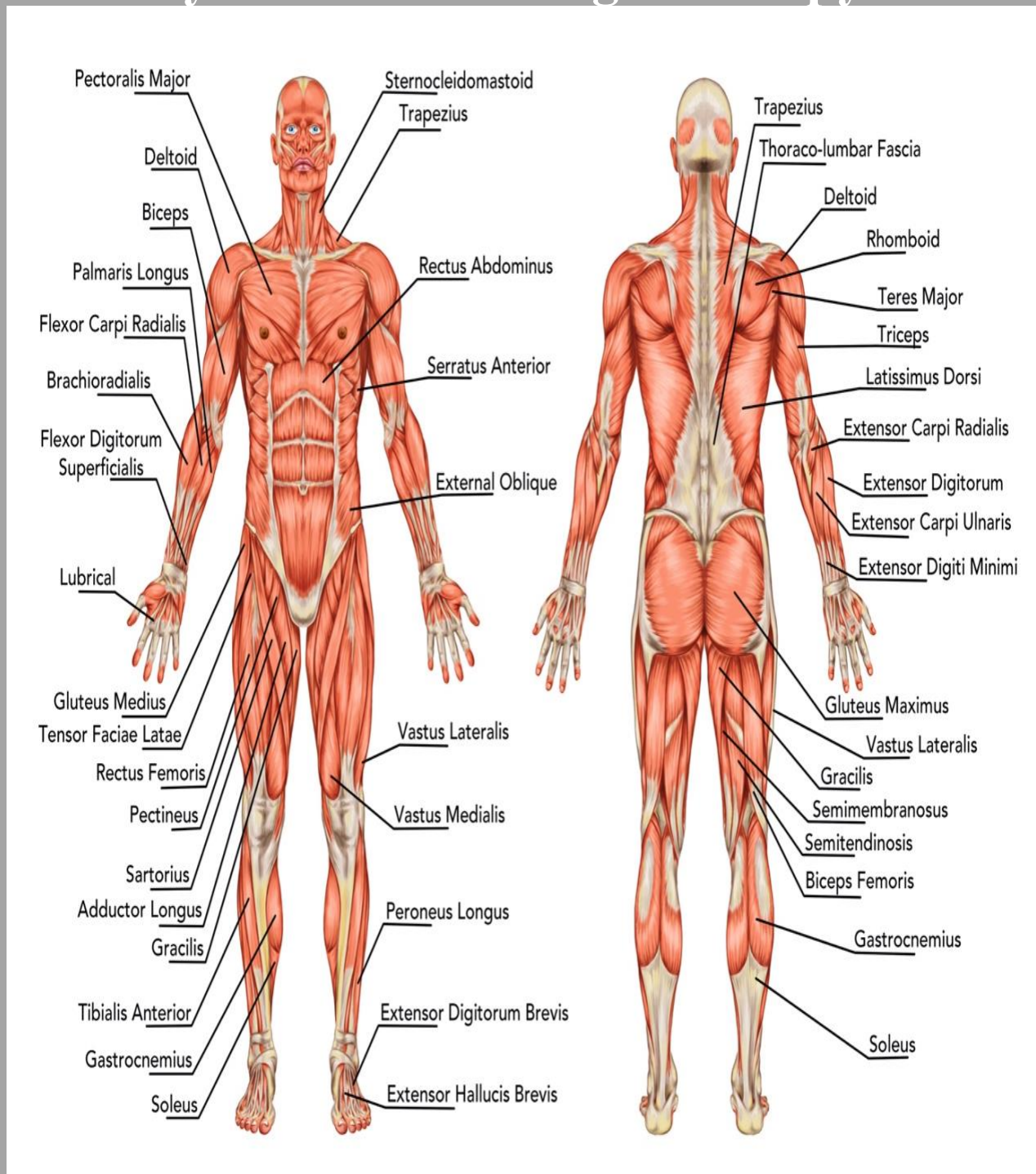
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**Good luck and enjoy!**

# ANATOMY & PHYSIOLOGY For Myoskeletal Massage Therapy



# HUMAN BODY

“INTERESTING, COMPLICATED, AND ATTACHED”

## Muscles in a short story:

Muscles consist mainly of muscle fibres which are held together by fibrous connective tissue, with numerous blood vessels and nerves penetrating through them.

The muscle fibres are made up of muscle cells, which vary in length and are rod shaped. The fibres are called **myofibrils** and they get shorter (contract) in response to a nerve impulse.

The protein strands then slide against each other when the muscle contracts.

Each muscle fibre has an individual wrapping of a fine connective tissue called endomysium, which are then wrapped into bundles called fascicule and are covered by the perimysium.

This is what forms the muscle belly, and has its own covering called the **fascia** epimysium. The fascia acts as a “Clingfilm” around muscles, giving them support and also acts as a pathway for nerves, blood and lymph vessels.

When a muscle is damaged, fibres become torn and the connective tissue around the muscle is also damaged.

Fluid seeps out of torn fibres, which can cause localised swelling.

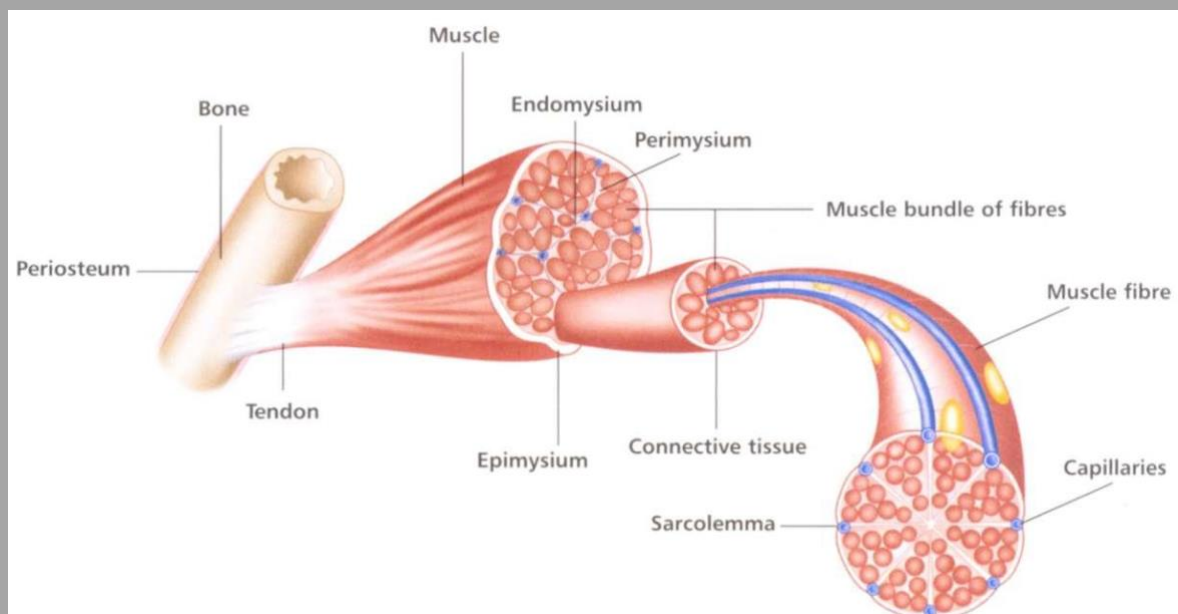
This fluid tends to stick the fibres together which causes pain as the muscle is irritated by the slightest contraction.

The fibres stop sliding as effectively and the fascia gets tighter and begins to constrict the muscle.

The fascia can also become torn and the loss of elasticity can create tissue congestion.

If the body is held in the same position for too long, such as sat at a computer, then the fascia can easily adapt to that shortened position, and any attempts to return it to its normal length can be painful.

There is then a temptation to remain in that position, which in turn worsens.







# Muscle Structure

Muscles are classified into three different types, which are:

- skeletal
- smooth
- cardiac

For the purpose of this course, we are mainly going to concentrate on Skeletal muscle, as smooth muscle is mainly found within hollow organs and cardiac muscle is found within the heart.

Skeletal muscles, also known as striated due to its appearance, or voluntary due to its action, are attached to bones and deal with movement.

These muscles are made up of fine thread like fibres of muscles, containing light and dark bands.

Skeletal muscles can be made to contract and relax by voluntary will. They have striations due to the actin and myosin fibres and create movement when contracted.

There are over 600 and more different types of muscles in the human body, making up nearly half of the body weight.

**Skeletal muscles** are the main topic of the Deep Tissue Massage.

Muscles have the following properties:

Excitability – the muscle responds to stimuli

Contractibility – the muscle shortens due to a nerve impulse

Extensibility – the muscle can stretch and increase its length by half

Elasticity – the muscle will return to its normal length

# Muscles

## Shape

The groups of fibres within muscles will determine the shape of the muscle.

The popular muscle fibre forms are:

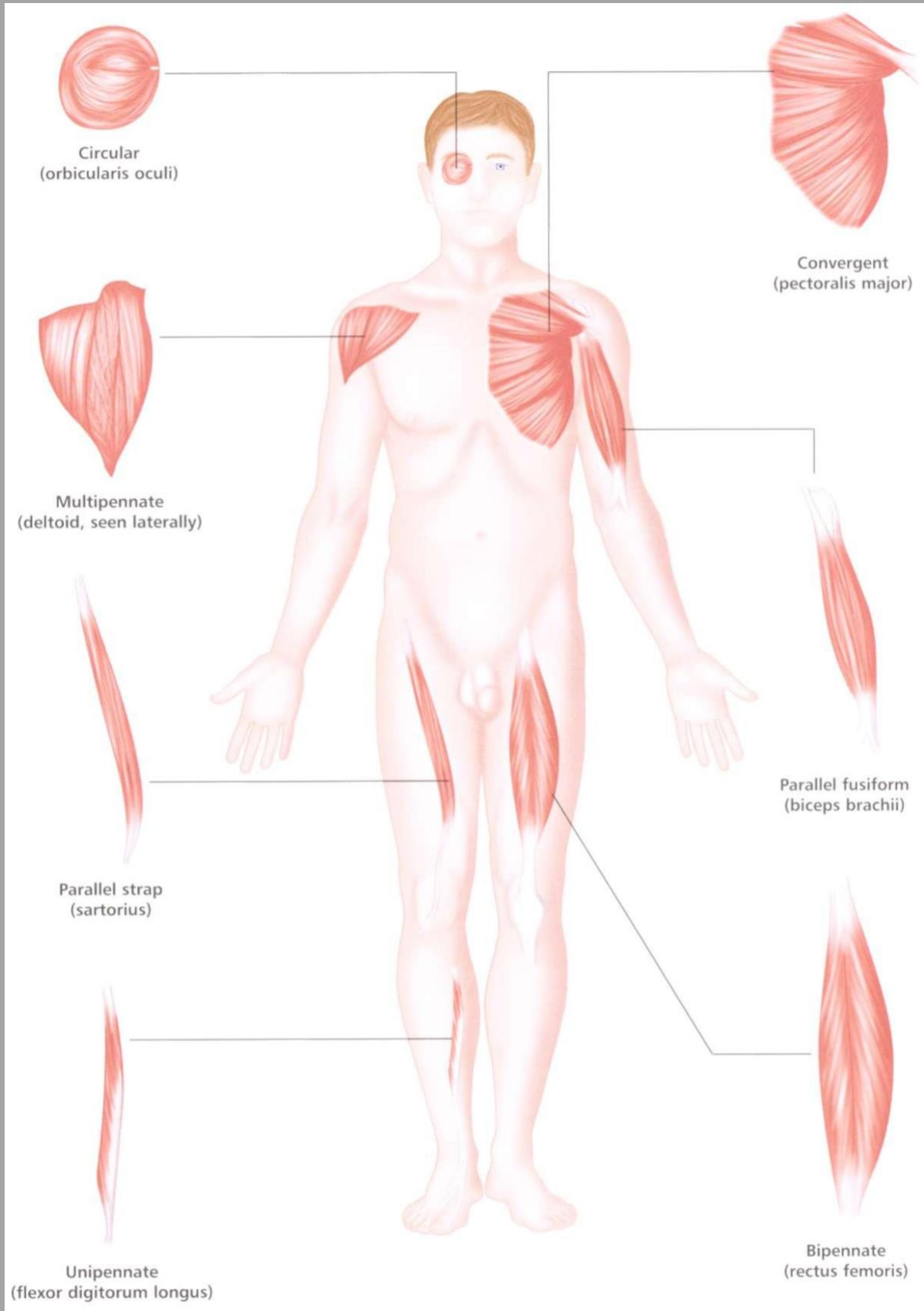
**Circular muscles** – these muscles are usually circular in shape and an example would be the muscles surrounding the mouth and eye.

**Pennate** – these are made up of short fibres so the pull is short but also strong, though the muscle can get tired easily.

**Convergent** – this is where the muscle fibres converge to an attachment to a bone and the fibres are arranged to allow maximum force and can sometimes cross joints which have a large range of movement such as the Pectoralis Major.

**Parallel fibres** – these muscles have fibres that run parallel to each other in length and can sometimes be called strap muscles. These muscles have great endurance but may not be that strong due to their length. An example would be the biceps brachii.

**Fusiform** – these are sometimes included within the parallel muscle group and are made up of spindle shaped fibres. A good example is the Biceps Brachii as the belly is wider than the origin and the insertion.



# Musculoskeletal Mechanics

**FACT** is Muscles are only able to contract or pull.

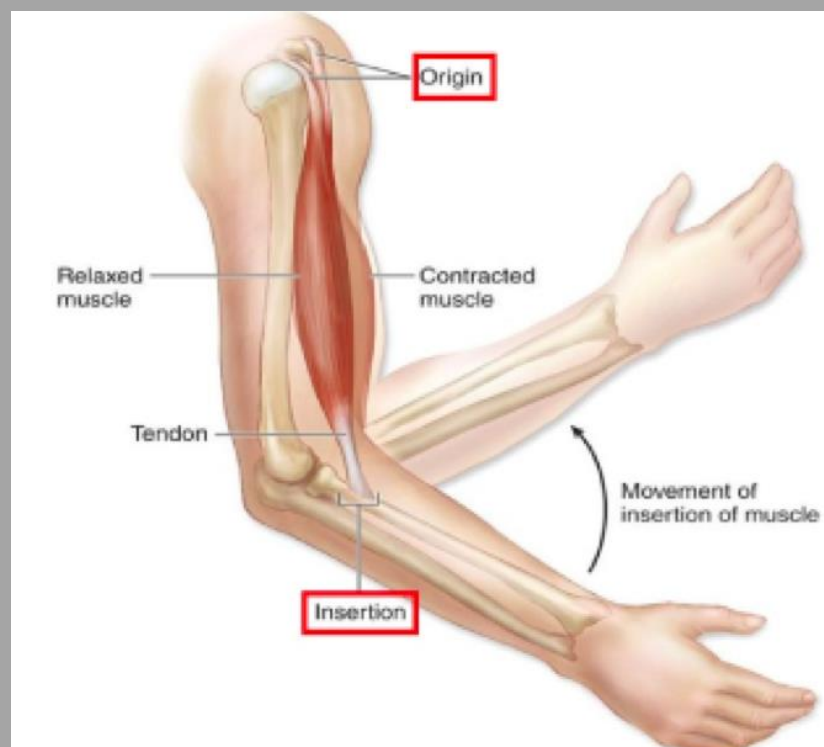
This means they have to work in groups and even when carrying out an action, do not work alone.

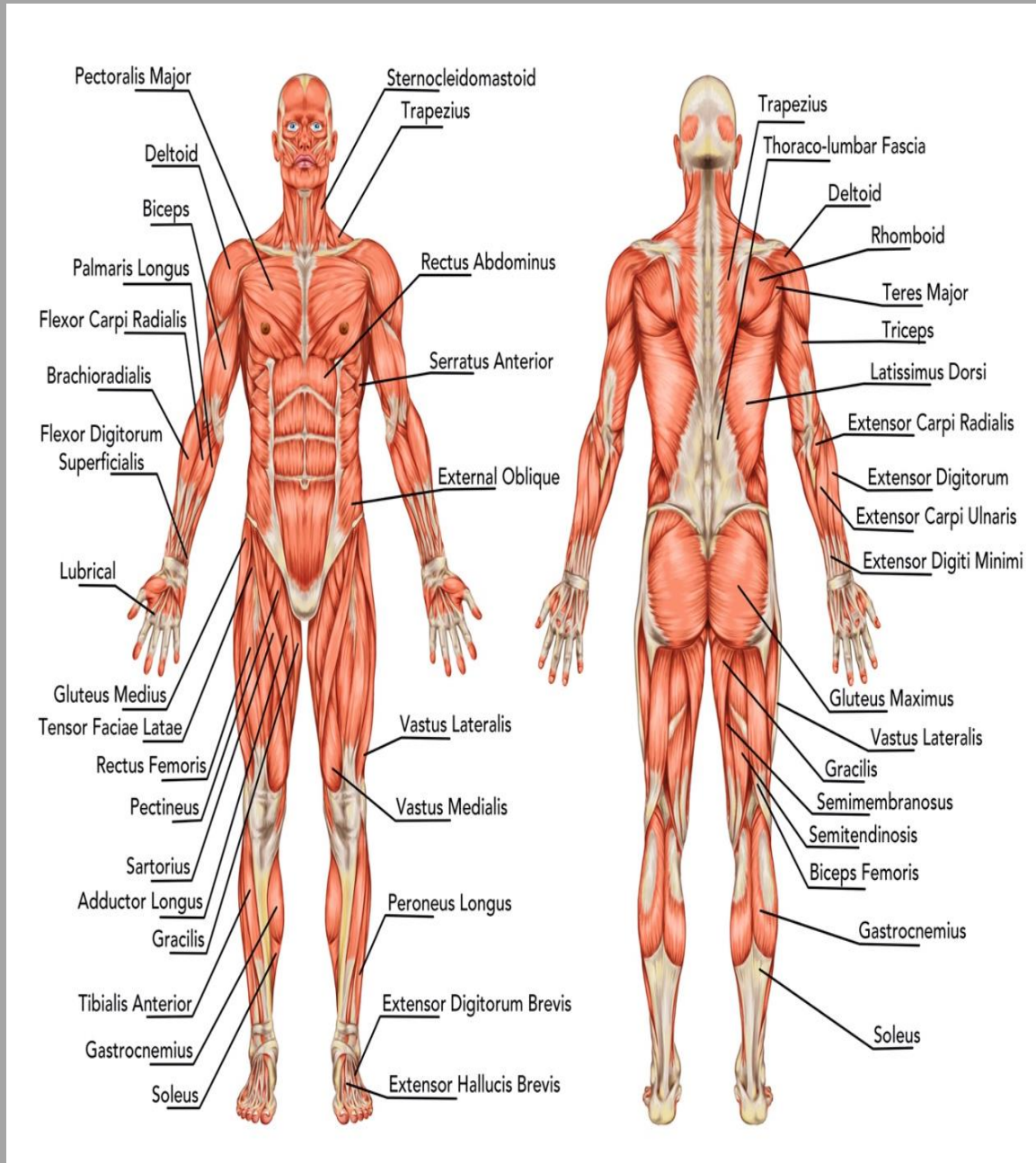
A joint has to have two or more muscles working together. As a muscle contracts, the second muscle relaxes, and as this second muscle contracts, the first muscle relaxes.

This is called *Antagonistic action* as they are pulling in the opposite direction to each other but without working against each other.

One end of the muscle needs to be fixed, which is known as the *origin* and as that muscle contracts, the other end of the muscle moves towards the origin.

The name given to the end of the muscle that moves towards the origin is called the *insertion*.

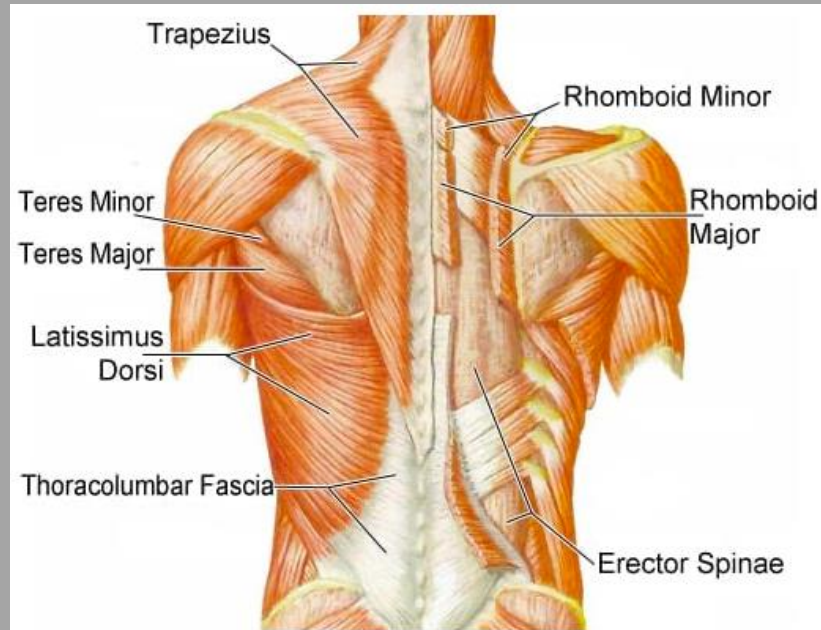




## Muscles of the Back

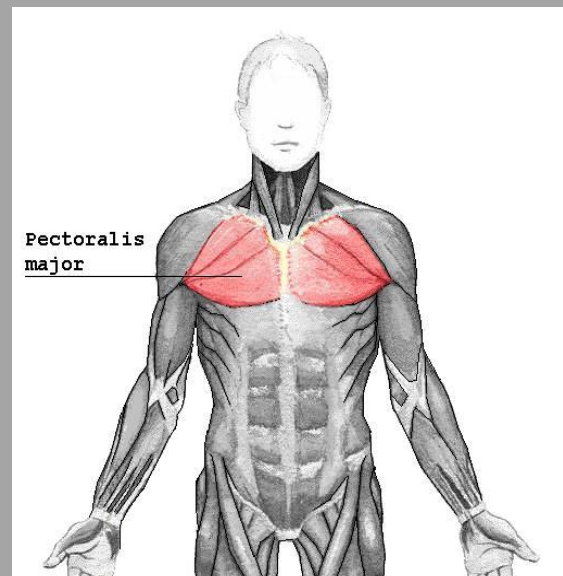
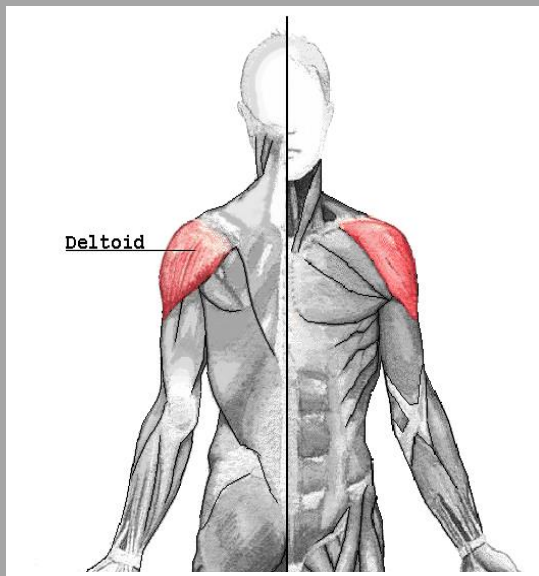
Name of the muscle	Location	Function
<b>Trapezius</b>	<b>Upper Back down to spine</b>	<b>Moves the scapula up, down and to the back</b>
<b>Latissimus Dorsi</b>	<b>Tow sides of the back</b>	<b>Adducts, extends and rotates shoulder joint</b>
<b>Erector Spine</b>	<b>Three groups of muscles on both sides of the spine from up the neck to the pelvis down</b>	<b>Protect and extends the spine, keeps the body in a right position</b>
<b>Rhomboids</b>	<b>The connection between the scapula and the vertebra</b>	<b>Rotates the scapula</b>





### Muscles of the Upper Body

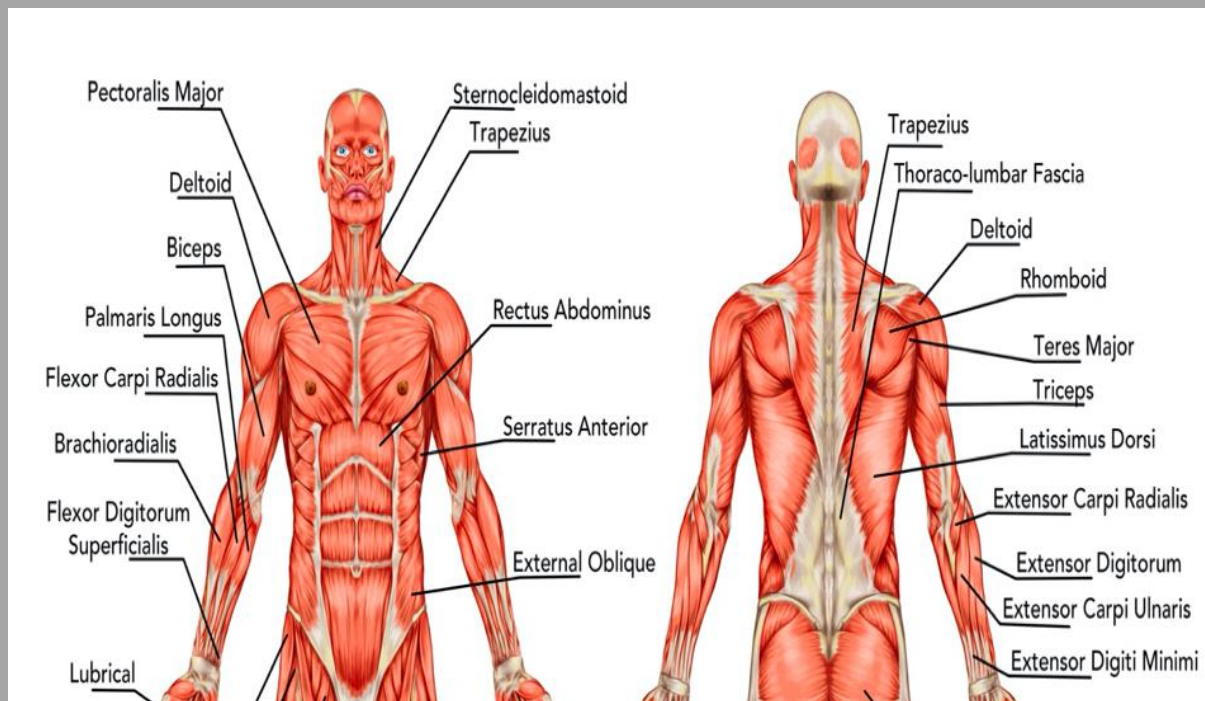
Name of the muscle	Location	Function
<b>Pectoralis</b>	Front of chest, under the breasts	Pulls arms forward and helps to rotate the arms
<b>Deltoids</b>	Surrounds the shoulders	Lift arms to back, forwards and the sides



The pectoralis major is the main muscle that covers the front of the chest, it makes up most of the male chest shape and lies under the breasts on females.

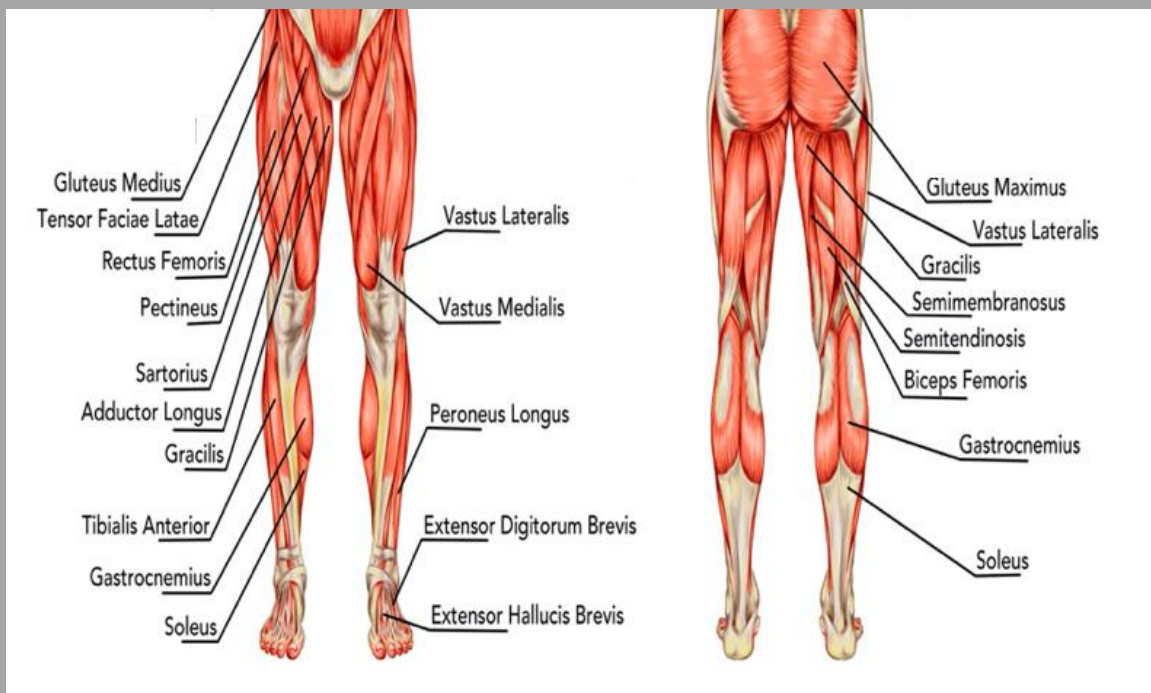
## Muscles of the Arm and Hand

Name of the muscle	Location	Function
<b>Biceps Brachii</b>	Consists of a long and short head runs from end of the deltoids to elbow	Movements of the elbow, supinates the forearm and hand
<b>Triceps Brachii</b>	Group of 3 muscles from the back of upper arm	Extends the elbow
<b>Brachialis</b>	Upper arm and deeper than the biceps	Flexes the elbow
<b>Brachoradialis</b>	Thumb side of the forearm	Flexes the elbow
<b>Flexor Carpi Radialis</b>	Middle of the forearm	Flexes and bend the wrist
<b>Extensors Carpi Radialis</b>	Little finger side of the forearm	Extends the wrist of the wrist
<b>Thenar muscle</b>	Palm of the hand below the thumb	Flexes the thumb and it moves it out and in
<b>Hypothenar muscle</b>	Palm of the hand below the little finger	Flexes the little finger and moves it out and in



## Muscles of the Legs

Name of the muscle	Location	Function
<b>Gluteus</b>	4 muscles, 3 of them makes the buttocks	Walking, running, Rotation, contracting the leg and extending the hip
<b>Tensor Fasciae Latae</b>	4 <sup>th</sup> gluteals muscle	Walking and stability of the knee
<b>Hamstring</b>	3 muscles in the upper back of the leg	Flexes and extend the knee as a joint
<b>Gastrocnemius</b>	Located at the upper part of the calf of the leg	Flexes feet and the knee
<b>Soleus</b>	The calf of the leg, under the gastrocnemius till the Achilles tendon	Flexes the foot
<b>Quadriceps Extensor</b>	4 muscles located at the upper leg from the front	Use in kicking and knee extension
<b>Sartorius</b>	Crosses the upper leg from the front, the longest muscle in the body	Flexes the hip and the knee, adducts and rotate the femur
<b>Adductors</b>	Group of muscle at the upper leg from the front	Brings the hip in (adduction), flexes and rotates the femur
<b>Abductors</b>	Located at the upper leg from the front towards outside	Abducts the hip (take it away) and rotate the hip
<b>Tibialis Anterior</b>	At the front of lower leg outside of the tibia	Rotates the foot, turns and inverts the foot





## Conclusion

- The main muscles are at the front of the upper leg (thigh) and are called the quadriceps. They are responsible for extending the knee joint and flexing the hip.
- The Adductors are the group of muscles on the inside of the thigh and moves the leg in towards the body.
- The Abductors are on the outside of the thigh, and moves the hip outwards. (Remember that the term abduct means to take away).
- The hamstrings are located at the rear of the thigh and extends the thigh and flexes the leg.
- Dorsiflexion of the foot is performed by the tibialis anterior.

## Growth and Repair of the Muscles

Muscle hypertrophy is the term used for when a muscle cell grows in size, and the commonest reason for this is due to exercise, where there will be an increase in muscle fibre.

When a muscle is damaged (torn), the body has to repair it and will do this by using satellite cells which fuse with the ends of the damaged fibre.

If the damage is constant then the process will repeat itself so that more satellite cells are used which will create growth of the muscle.

## Muscle Tone

Muscle tone refers to the amount of tension or resistance to movement in a muscle.

Muscle tone is what enables us to keep our bodies in a certain position or posture.

A change in muscle tone is what enables us to move.

For example, to bend your arm to brush your teeth, you must shorten (increase the tone of) the bicep brachii muscles on the front of your



arm at the same time you are lengthening (reducing the tone of) the triceps brachii muscles on the back of your arm.

To complete a movement smoothly, the tone in all muscle groups involved must be balanced.

The brain must send messages to each muscle group to actively change its resistance.

## **Tendons and Ligaments**

Tendons and ligaments are made up of collagenous tissue with ligaments attaching bone to bone and tendons attaching muscle to bone. The place where a muscle attaches to a bone but does not move, is known as the origin.

To make movement occur, the muscles contract, which will pull on the tendons, this then pulls on the muscles.

Tendons are tough, yet flexible bands of fibrous tissue, which allows movement.

Ligaments are stretchy connective tissue which helps to stabilize the joints.

They control the range of movements of a joint to prevent them from bending the wrong way.

Injuries to both tendons and ligaments are very common, caused mainly by sporting injuries.

It is fairly common for tendons to be stretched or torn which can be extremely painful.

If ligaments are stretched, caused by injury or excess strain, the joint will become weaker, as the ligaments are unable to support it.

### Conclusion

-As discussed, the muscles within our body act when they receive impulses. The nervous system is the means by which the body co-ordinates bodily systems and informs the body about any changes in the environment.

-The nerves carry brief electro-chemical messages that trigger appropriate responses in the various parts of the body.

-The messages (impulses) then react and will do certain tasks such as make the muscles contracted, the glands secrete and the blood vessels widen or narrow.

# The Nervous System

The nervous system is a very complex system in the body but is divided up into two main parts.

**The Central Nervous System (CNS)**

**The Peripheral Nervous System (PNS)**

## The CNS

The Central Nervous System consists of the brain and spinal cord. The main function of this part of the system is to get information from the body and send out instructions, and to maintain equilibrium in the body. The CNS receives sensory information from all parts of the body. On receipt of this information, the CNS analyses the information, and thoughts, emotions and memories are then generated and stored. The CNS usually responds to nerve impulses by stimulating muscles or glands, which creates an appropriate response to the original stimulus such as a change in temperature.

## The PNS

This part of the system is made up of all of the nerves and the wiring. This system sends the messages from the brain to the rest of the body. The 31 pairs of spinal nerves are part of the peripheral nervous system.

There are two types of cells in the peripheral nervous system which carries information to the sensory neuron cells and from the motor neuron cell. Cells of the sensory nervous system send information to the CNS from internal organs or from external stimuli. Much of the peripheral nervous system is concerned with voluntary response, but there are still involuntary responses that are dealt with.

## Types of Nerves

Sensory nerves send messages from the muscles to the spinal cord and the brain. Special sensors in the skin and deep inside the body help people identify if an object, for example is hot. Sensory nerve damage often results in tingling, numbness, pain, and extreme sensitivity to touch

Motor nerves enable the brain to stimulate muscle contraction, by sending impulses from the brain and spinal cord to all of the muscles in the body. Damage to the motor nerve can lead to muscle weakness, difficulty walking or moving the arms, cramps and spasms.

Autonomic nerves control involuntary or semi-voluntary functions, such as heart rate. If the autonomic nerves are damaged, then a person's heart may beat faster or slower, and dizziness may occur. In addition, autonomic nerve damage may result in difficulty swallowing, nausea, vomiting, diarrhoea or constipation, problems with urination, abnormal pupil size, and sexual dysfunction.

# THE MUSCULAR SYSTEM

When a muscle is relaxed, there is a good flow of blood to the area, but during contraction, the flow of blood is reduced and therefore waste removal is limited.

This is not a problem if this is occurring during exercise, as the constant contraction and relaxation allows the blood flow to remain. The problem can occur if we constantly contract the muscle without it actually moving, such as in sitting in a poor position, as the blood capillaries can become compressed and blood flow can be impeded, resulting in an accumulation of waste and a reduction in the delivery of nutrients and oxygen.



Muscles can become fatigued and become weaker and can result in spasm, eventually creating pain.

As the muscles become shorter, they will eventually pull on the tendons that attach them, which can result in loss of function and pain.

As function gradually deteriorates, an imbalance can be caused in the muscle group and unless the action or activity that started the issue in the first place is not stopped, the problem will usually re- occur, even after treatment.

If a client is presenting with a sharp pain, this can represent inflammation in the area and massage should not commence until the pain has turned into a little sensation.

## Causes of Myo-Skeletal Problems

Very often, the problem will not be noticed for a long time and the symptoms can be very subtle at first.

This can make it difficult to be able to determine the cause of the problem.

However, below are some of the most common causes.

### Stress

– emotional stress will usually show itself in physical tension, causing tight muscles and poor posture.

Environment – by looking at the client lifestyle and occupation, a pattern may form that could highlight a potential problem.

Such activities as walking a dog which pulls on a lead or carrying heavy bags over the shoulder can often lead to problems.

### Injury

– any type of injury will cause the soft tissue to become swollen and may lead to increased muscle tension or spasm.

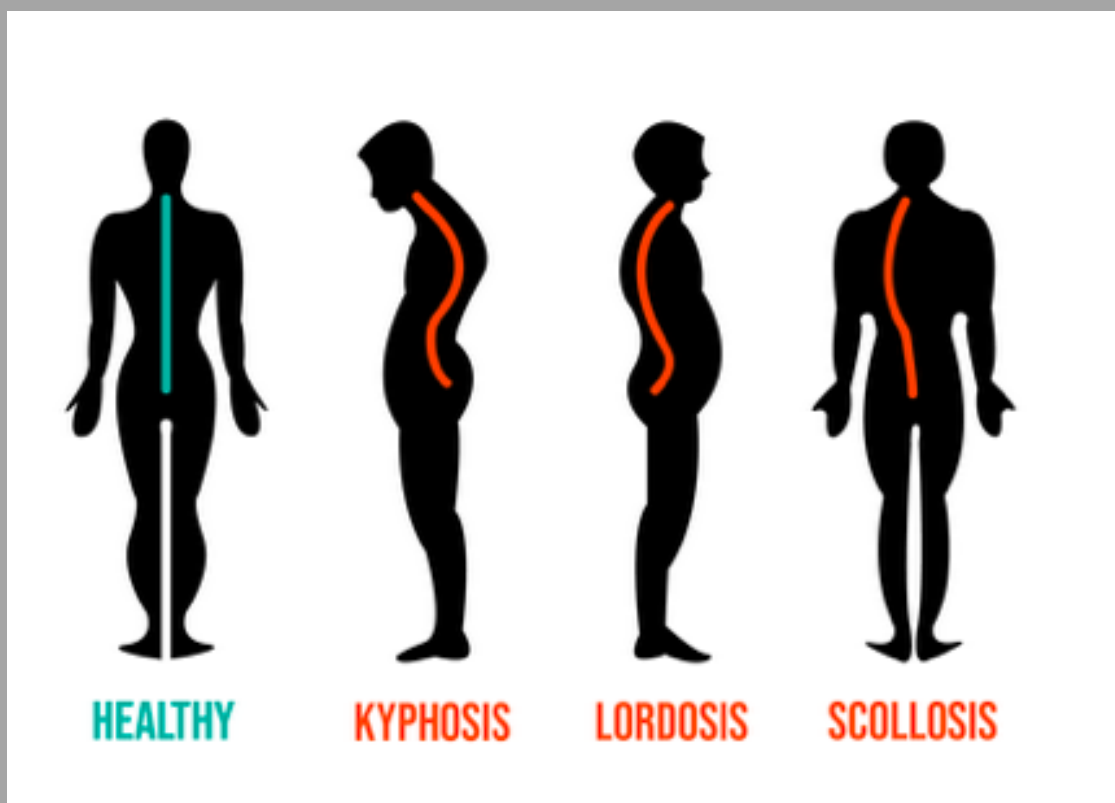
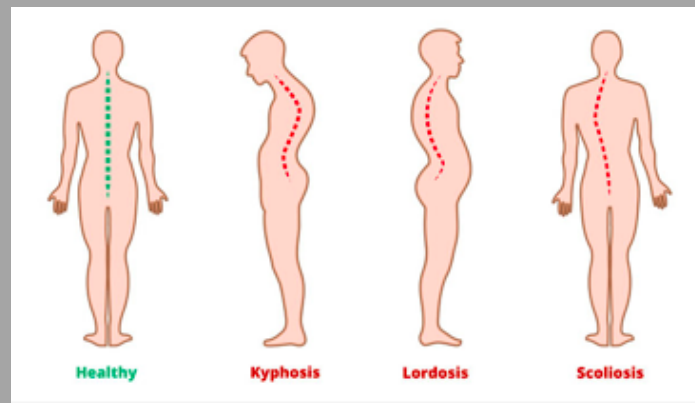
This can lead to a lack of range of motion.

If you suspect an injury, always refer your client to a professional such as osteopath or physiotherapist.

## Posture

– postural problems may be due to bad habits but they may also be due to postural faults, such as those below:

Postural Fault	Definition
Kyphosis	A great Curve at the upper part of the spine creating a hump
Scoliosis	A curve of the spine from one side and it makes the hip misaligned or dispositioned
Lordosis	The natural curve of the lower back (Lumbar) area of the spine, it causes the abdomen to stick out and causing the hip area (pelvis) to curve back and up



As a therapist, you are not in the position to diagnose a postural fault but it is important to recognise that poor flexibility and imbalance



may develop and the muscle groups surrounding will be affected if a postural fault is present.

## **Health and Safety at Work**

This protects your rights either as an employer or employee. The law states that the employer must provide a safe working environment, provide health and safety training for staff, produce a written policy of the company's health and safety policy, and ensure that anyone on their premises is not exposed to any health or safety risks.

## **Medical Disclaimer**

It is advised that you take medical advice if you or any of your clients have a health problem.

Any qualification from Marey El Hamouly will not be enough to qualify you to advise on any medical condition or to diagnose a condition.



**Regards**

**Marey El Hamouly**

*Director*

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**MAREY EL HAMOULY**

**MESSAGE MASTERCLASS**



Sources and Researches  
Medi-Academy-Switzerland  
Esclarmonde Health Formations-Switzerland  
ESSR,Health School-Switzerland  
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#### AET

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Register No: E963863

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