

## Medical terminology

### The Integumentary system

The integumentary system (comes from the latin word **integumentum** which means **covering or shelter**) includes: **the skin which covers the entire body, hair, nails, sebaceous glands and sweat glands.**

Skin is the largest organ of the body, and serves to:

- 1) Protect against injury.
- 2) Protect against the sun UV (ultraviolet) rays.
- 3) Prevent entry of harmful microorganisms.
- 4) Maintain the proper internal body temperature.
- 5) Excrete waste materials through perspiration.
- 6) Function as a sense organ.

#### Structure:

The skin consists of **2 layers: the epidermis (epi=on or over) and the dermis.**

**Beneath the skin there is a layer of connective tissue called the subcutaneous layer,** this layer is composed of fatty tissue and it is very important because it **connects the dermis to the muscles and organs beneath it.**

**The epidermis:** it is composed of several layers of epithelial tissue. there are no blood vessels or nerves in it. The epidermis contains in its deepest layers the melanocytes.

**The melanocytes:** they are cells that can produce melanin.

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**The melanin:** it is dark pigment that is present in the skin and other parts of the body, it gives the skin its color and help to protect against sunlight.

**The dermis (also called corium):** it is a thick layer of tissue below the epidermis, it contains blood vessels, nerves, hair follicles, sebaceous glands and sweat glands.

The hair follicles produce hair. Hair is composed of keratin.

**Keratin:** it is a hard protein that forms the hair and nails.

### **Practice and practitioners:**

**Dermatology:** is the medical specialty that deals with the skin.

**Dermatologist:** the physician who specializes in the diagnosis and treatment of skin disorders.

### **Disorders:**

**Skin lesion:** means any wound or injury to the skin.

**Dermatitis:** inflammation of the skin. The skin becomes erythematous (means the skin becomes red) and pruritic (means itchy). Edema= swelling.

**Epidermatitis:** inflammation of the epidermis layer only.

**Eczema** (الأكزما): it is type of chronic dermatitis ( معناه التهاب مزمن يصيب )  
(البشرة) the skin becomes red and itchy.

**Psoriasis** ( P is silent in this word):  
معناه داء الصدفية يلفظ سورياسز )  
inflammatory condition that affect the skin caused red circles and silvery scale.

**Treatment:**

- ❖ **Analgesic:** agent that relieves pain.
- ❖ **Antibiotic:** agent that kills bacteria.
- ❖ **Antifungal:** agent that kills fungus.
- ❖ **Anti-inflammatory:** agent that reduces the inflammation.
- ❖ **Antipruritic:** agent that reduces itching.
- ❖ **Antipyretic:** agent that reduces fever.
- ❖ **Antiseptic:** agent that inhibits the growth of infectious organisms.
- ❖ **Antiviral:** agent that destroys viruses.



## Medical terminology

### The Muscular system



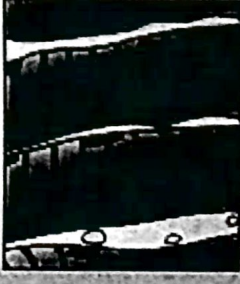
The muscular system includes all of the muscles in our bodies: **skeletal** such as the biceps and hamstrings muscles, **cardiac** muscles of the heart and **smooth** such as the muscles in the stomach and bladder.

The muscles are made up of fibers that are enclosed in a fibrous sheath called **fascia**, they are attached to the bones by **tendons**, the **ligaments** connect bone to bone and offer support to muscles.

The main functions of the muscles are to help maintain posture, produce heat and help us move. There are three times as many muscles as there are bones in the human body.

#### Types of Muscle tissue:

Muscles can be characterized by their location, control action and cell appearance.

	SMOOTH	CARDIAC	SKELETAL
Location	Wall of hollow organs, vessels, respiratory passageways	Wall of heart	Attached to bones
Cell characteristics	Tapered at each end, branching networks, nonstriated	Branching networks; special membranes (intercalated disks) between cells; single nucleus; lightly striated	Long and cylindrical; multinucleated; heavily striated
			
Control Action	Involuntary Produces peristalsis; contracts and relaxes slowly; may sustain contraction	Involuntary Pumps blood out of heart; self-excitatory but influenced by nervous system and hormones	Voluntary Produces movement at joints; stimulated by nervous system; contracts and relaxes rapidly

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### Muscle Movement:

The skeletal muscles are stimulated by the nervous system and perform in groups or antagonistic pairs to accomplish movement. Each skeletal muscle can be classified as:

**Prime mover:** the muscle that has the principal responsibility for a given movement, it contracts and produces movement.

**Antagonist:** works in opposition to produce opposite movement.

<b>Movement</b>	<b>Definition</b>	<b>Example</b>
abduction	Movement away from midline	Moving the arms outward from the body
adduction	Movement toward midline	Return of the lifted arms to sides
eversion	Turning outward	Turning the sole of the foot outwards
inversion	Turning inward	Turning the sole of the foot inward
extension	Opening the angle of a joint	Straightening of the knee
flexion	Closing the angle of a joint	Bending the knee
pronation	Turning downward	Turning the palm of the hand downward
supination	Turning upward	Turning the palm of the hand upward
dorsiflexion	Bending backward	Pointing the toes backward
Planter flexion	Bending the sole of the foot	Pointing the toes downward
rotation	Turning a body part on its own axis	Turning the head



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### Practice and Practitioners:

The medical specialists who treat disorders of the muscular system include: neurologists and orthopedic surgeons.

**A neurologist** : is a physician who specializes in the diagnosis and treatment of both the muscular system and the nervous system.

**Orthopedic physicians** treat patients suffering from conditions involve joints as well as muscles.

**Occupational therapist (OT)** and **Physical therapist (PT)** both provide therapy to assist patients to regain functions to perform everyday activity. they restore, maintain and promote overall fitness and health.

### Disorders affecting the Muscular system:

**Muscular dystrophy** (dys= ill, bad, difficult ; trophy= nutrition or growth) is a group of inherited muscle disorders that cause muscle weakness without affecting the nervous system.

**Myasthenia gravis (MG)** (my=muscle, asthen=weakness, ia=condition; gravis= serious or heavy) is an immunological disorder characterized by weakness especially of the facial and external eye muscles.

**Fibromyalgia:** is a chronic disorder characterized by aching and stiffness of muscles and soft tissues.

**Amyotrophic Lateral sclerosis (ALS):** progressive degeneration of the nerve tracts of the nerve tracts of the spinal cord causing muscular atrophy.

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**Cumulative Trauma Disorders (CTD)**: are injuries often caused by repetitive work related motions that damage muscles, tendons, joints or nerves.

It include examples such as

**A-Carpal Tunnel syndrome**: which is a disorder that involves the carpal bones and the muscles of the wrist.

**B-Rotator Cuff injury**: which is an injury involving the shoulder and seen in people who perform repeated activities such as swimming.

**C-Plantar fasciitis**: is an inflammation of the planter fascia (connective tissue of the foot) which can cause pain on walking.

**D-Sports injuries: most common is:**

**Hamstring injury**: is a strain or tear in one of the hamstring muscles, this injury is common among baseball or football players. Treatment consists of rest , ice , compression and elevation (RICE) .

**Paralysis**: is the loss of sensation and voluntary muscle movement due to injury or disease. Kinds of paralysis:

**Hemiparesis**: slight paralysis of one side of the body (hemi=half , paresis=partial or incomplete)

**Myoparesis**: weakness or partial paralysis of a muscle

**Paraplegia**: paralysis of both legs and the lower part of the body (para= alongside , plegia= paralysis)

**Quadriplegia**: paralysis of all four extremities.

**Hemiplegia**: total paralysis of one side of the body.

❖ There are some devices used to diagnose muscular diseases such as:

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**Electromyography (EMG)** = it is a device that is used to record the strength of muscle contractions by means of electrical stimulation.

### Pharmacology:

Anti-inflammatory agents are prescribed to treat the major symptoms of skeletal muscle disorders, Non-steroidal anti-inflammatory drugs (**NSAIDs**) are commonly used.

**Analgesics** are used to relieve pain, in addition **skeletal muscle relaxants** are used to reduce muscle spasm.

<b>Term</b>	<b>Meaning</b>
My/myo	muscle
Stria (single) – striae (plural)	Line -lines
Para	Beside, beyond or near
Paresis	Partial or incomplete paralysis
Plegia	paralysis
Hemi	half
Quadri	four
Antagonist	Something opposing or resisting the action of the other
Atrophy	Wasting of the muscles
Neuro	nerve
Myodynia/myalgia	Pain in a muscle
Myositis	inflammation of a muscle
Myospasm	contraction of a muscle
Tenalgia	pain in a tendon
Tendonitis	inflammation of a tendon
Myology	study of muscles