

وسهلا

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إذن المحرر واي اجراء  
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طائلة المسؤولية القانونية



# الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

رئيس قسم التشريح و الأنسجة و الأجنة - كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

جروب الفيس د. يوسف حسين (استاذ التشريح)

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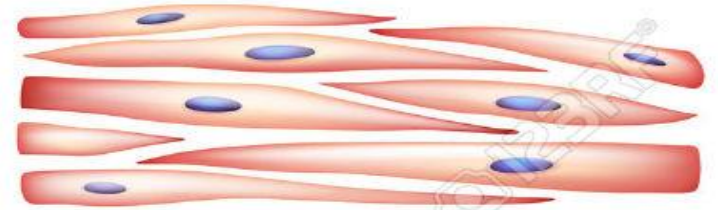
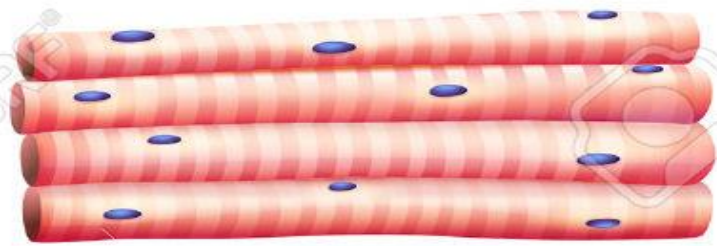
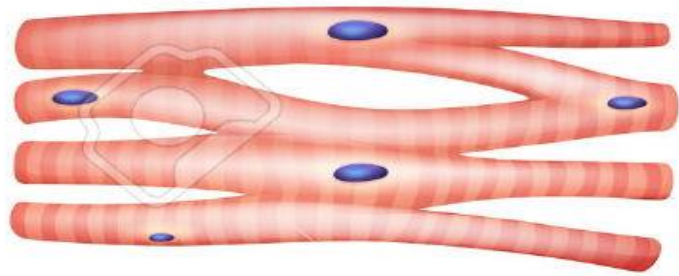
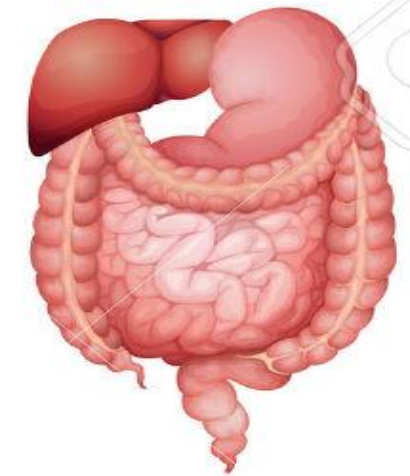
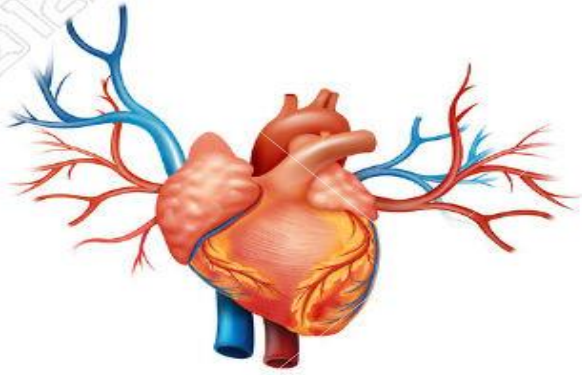
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# Muscles

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# Types of Muscle



**Cardiac muscle**

**Skeletal muscle**

**Smooth muscle**

## ❖ Differences between the muscles

| 1- Skeletal muscles   | 2- Cardiac muscles   | 3- Smooth muscle   |
|---|--|--|
| <p>1- muscles of the skeleton</p> <p>2- Supplied by voluntary nerves.</p> <p>3- Responsible for voluntary motor activity.</p> | <p>1- muscles of the heart.</p> <p>2- Supplied by involuntary nerves.</p> <p>3- Responsible for cardiac contractility.</p> | <p>1- muscles of the visceral wall.</p> <p>2- Supplied by involuntary nerves.</p> <p>3- Responsible for peristaltic movements (muscles of respiratory, alimentary &amp; vascular systems).</p> |

# Types of Skeletal Muscles

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## A- Parallel fibres



**Strap- like  
e.g. sartorius**



**Strap- like with tendinous  
intersections; e.g. rectus abdominis.**

**Quadrilateral; e.g.  
quadratus femoris**



**Circular, which surround a  
body opening e.g. orbicularis  
oculi, orbicularis oris.**

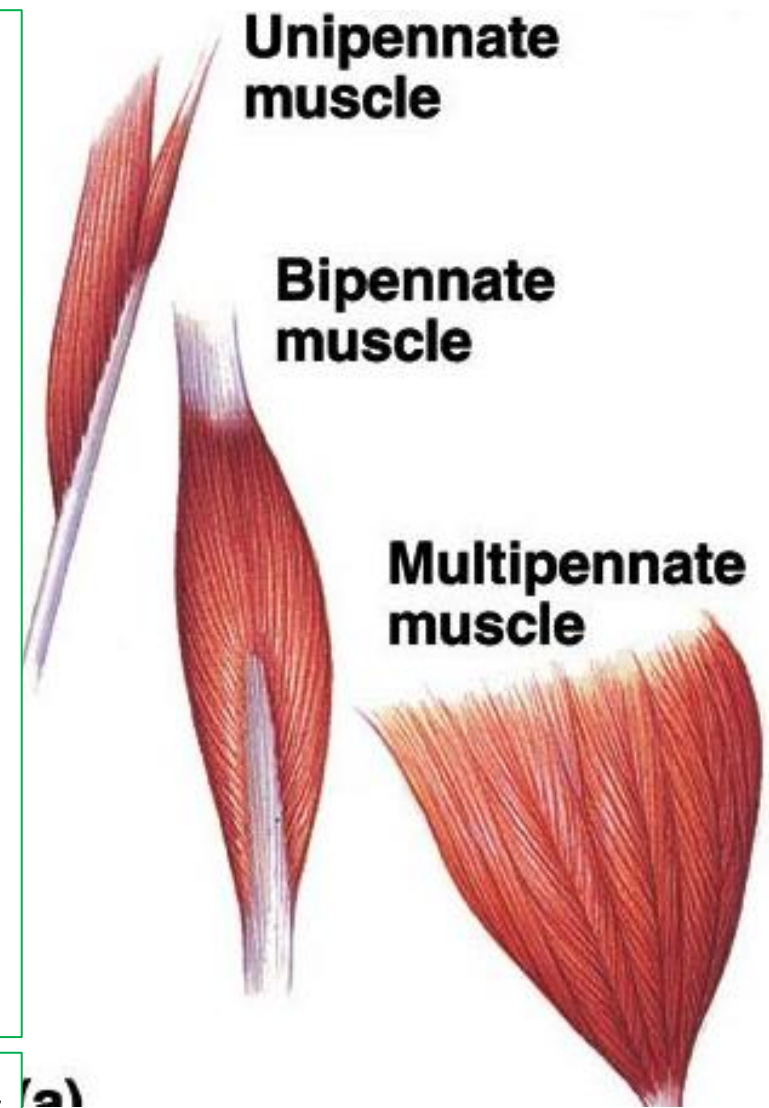


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- **B- Oblique fibres**

**1- Pennate (feather-like ريشة ) type;** the muscle fibres run obliquely to become attached to the tendon as follows:

- a) Uni-pennate,** fibres attached to one side of the tendon e.g. **flexor pollicis longus muscle** (of the thumb).
- b) Bi-pennate,** fibres attached to both sides of the tendon e.g. **dorsal interossei muscles** (of the hand).
- c) Multi-pennate,** muscle contains many tendinous intersections. fibres attached to both sides of each tendinous intersection in a bi-pennate arrangement e.g. **Deltoid muscle.**



**2- Triangular type;** the muscle fibres converge into a narrow terminal tendon e.g. **temporalis muscle.**

**3- Spiral** as pectoralis major muscle

- **According to number of origin**

- Two origins (heads) as biceps or digastric
- Three origins (heads) as triceps

- **According to actions of muscles**

- Supinator muscle, **Pronator Quadratus**
- Flexor pollicis longus, **Extensor pollicis longus**
- Abductor pollicis longus , **Adductor Pollicis**, Opponens Pollicis

- **According to attachment to bones**

- Sternocleidomastoid muscle

- **According to length**

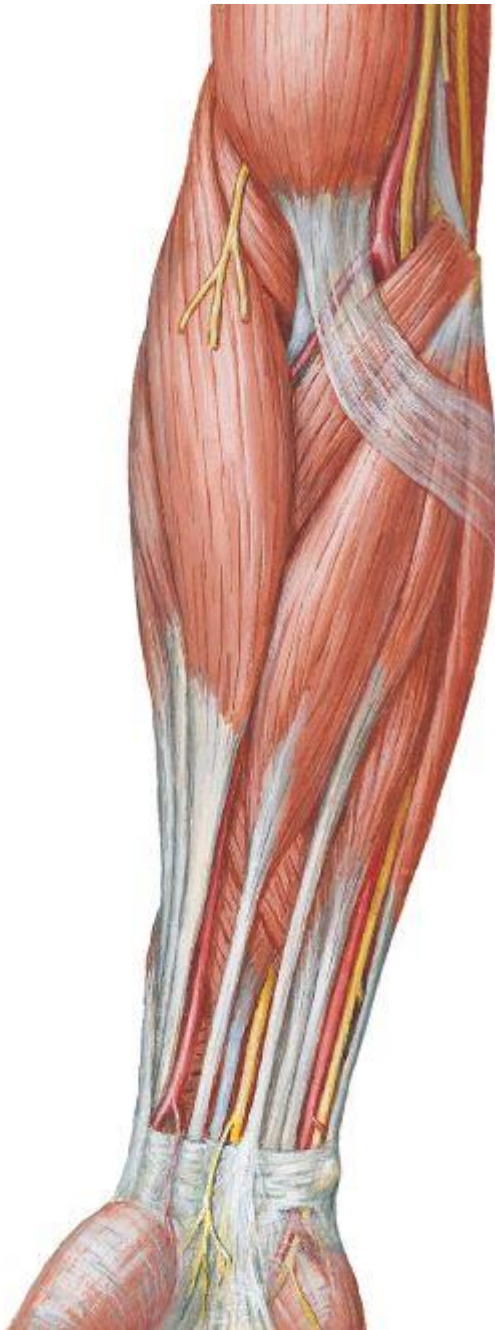
- Flexor pollicis longus
- Flexor pollicis brevis

- **According to the size**

- Gluteus maximus
- Gluteus medius
- Gluteus minimus

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- **According to the Joint actions**

1. **Uniarticular muscles:** Muscles acted on one Joint e.g. **brachialis**.
2. **Biarticular muscle.** Muscles acted on 2 joints e.g. **biceps**.
3. **Multiarticular muscles;** Muscles acted on more than 2 joints e.g. **Flexor pollicis longus**.

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# Structures associated with skeletal muscles

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## \* Attachments of the Skeletal Muscle

- Each muscle has 2 ends which get attached as follows;

**1. Origin**, is more fixed & less movable and **proximal** attachment.

**2. Insertion**, is more movable and **distal** attachment.

- **Origins & insertions are attached mainly to periosteum of bones.**



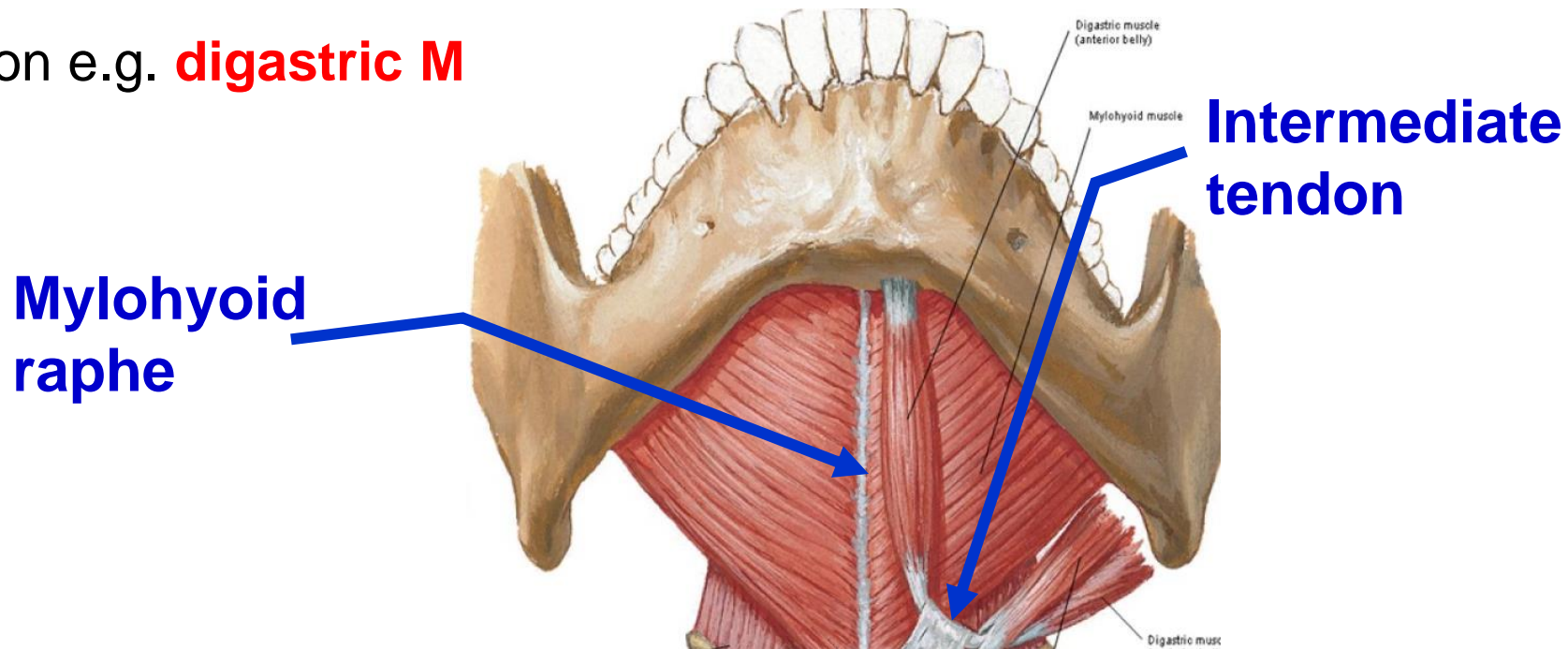
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- **Tendon**, cord of fibrous connective tissue that attaches **muscle to bone**.
- **Ligament**: band of Fibrous connective tissue connects **two bones together**
- **Raphe**: fibrous tendon between **symmetrical two muscles** on each side.
- **Inter-mediate tendon**, between **two bellies (parts)** of muscle at their insertion e.g. **digastric M**



**Tendon Achilles**





- **Aponeurosis**

- **Flat fibrous tendons** at attachment of muscle mainly insertion.

**Bicipital aponeuroses**

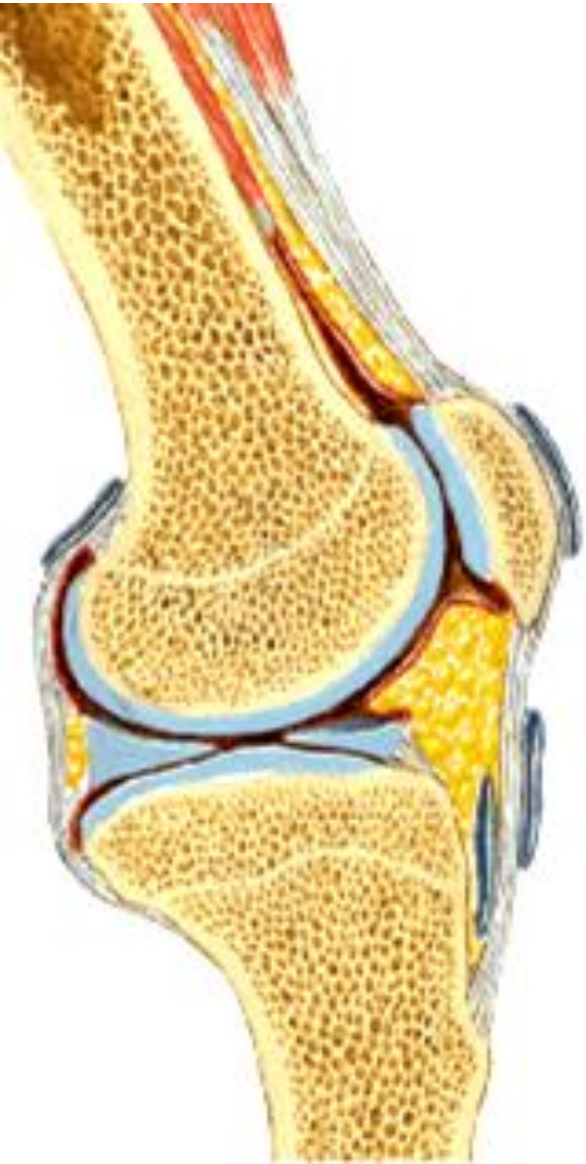
- **Retinaculum**

- Thickening of the **deep fascia** that stabilizes tendons and neurovascular structures as they cross a joint.

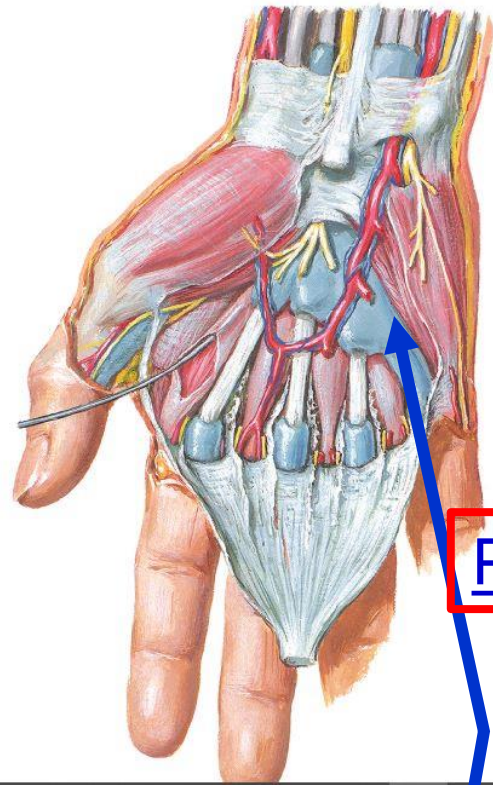
**Flexor retinaculum**

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- **Synovial Bursa**
- **Flattened sac** lined by synovial membrane and filled by synovial fluid
- It facilitate movement by minimizing friction between a bony joint and the surrounding soft tissue, such as skin, muscles, ligaments.



- **Synovial sheath**
- **Thin synovial membrane** around muscle tendons
- It facilitate movement by reducing friction between tendons and surrounding structures.

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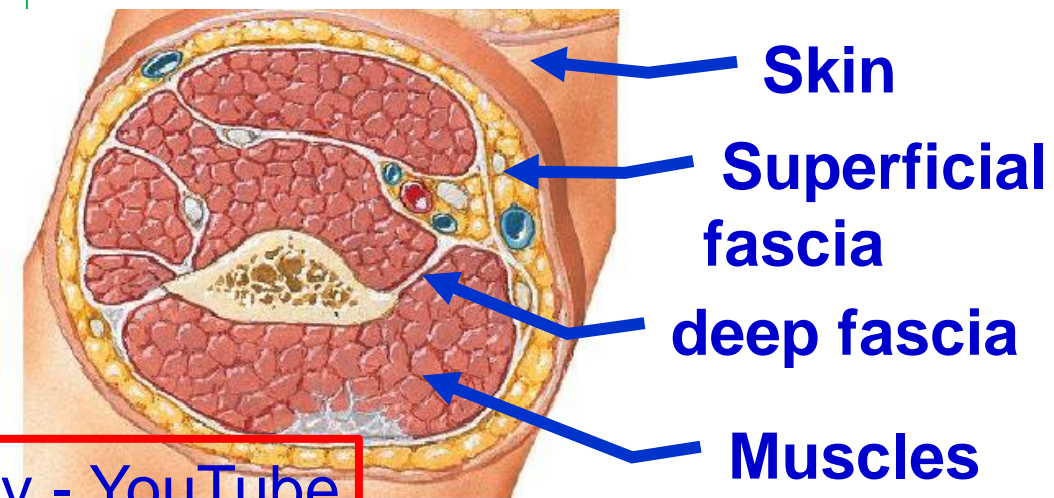
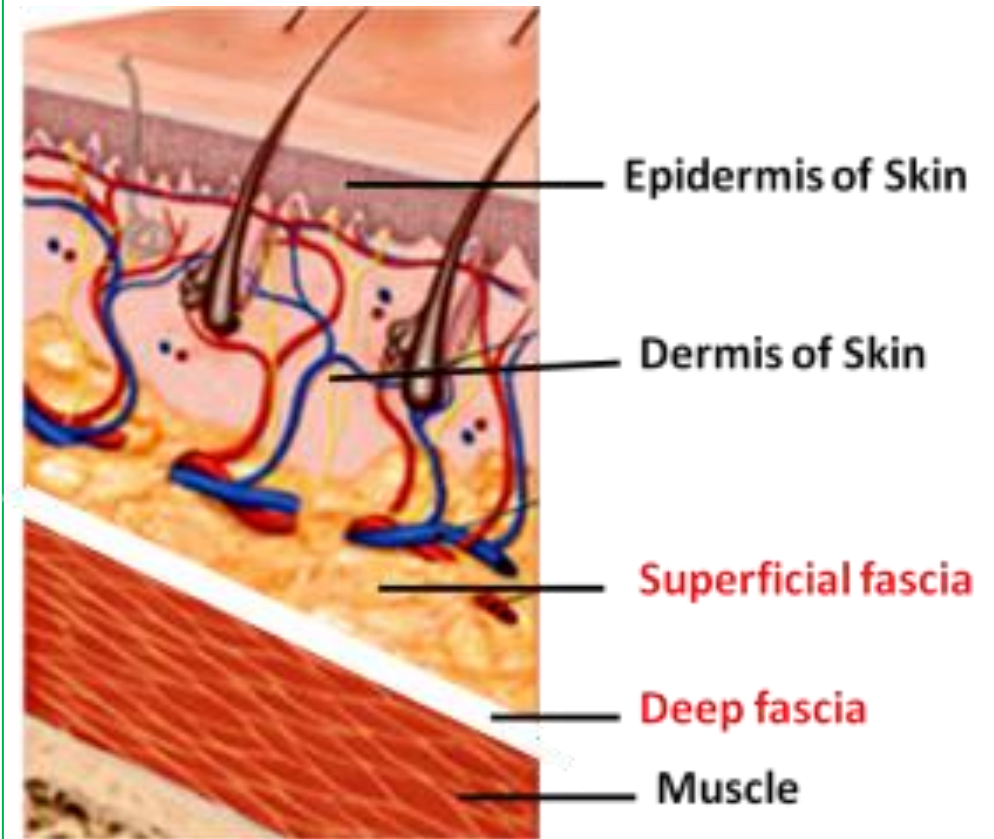
**Synovial sheath**

- **Fascia**

- It is a **fibrous sheet** that envelops the body under skin.
- It may be superficial or deep

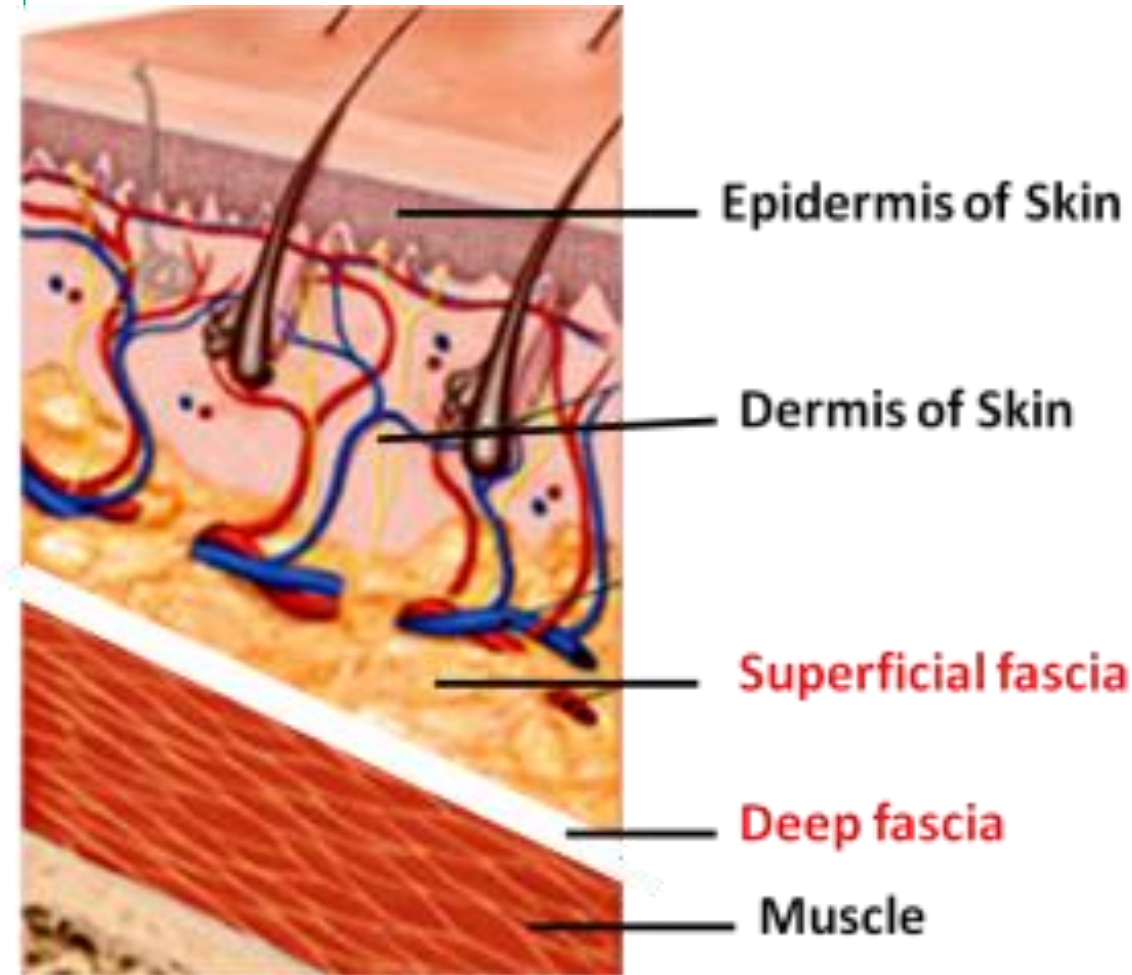
- **Deep fascia**

- It is a **sheet of fibrous tissue** that **absent** in face and anterior abdominal wall
1. Provides origin or insertion to the muscle.
  2. Forms the retinacula
  3. Forms intermuscular septa and interosseous membrane
  4. Formation of palmar aponeurosis (hand) and plantar aponeurosis (foot)
  5. Formation of sheath around big vessels as carotid sheath



- **Superficial fascia**

- **Contents;** fat, Cutaneous nerves and vessels, Lymphatic vessels and lymph nodes.
  - **Its contents of fat**
  - **More in;** - anterior abdominal wall, Medial side of the thigh, gluteal region and Breast.
  - **Absent in,** - Eye lids. - Nipple.  
- Scrotum. - Penis. - Clitoris and labia minora
- N.B; the amount and distribution of fat depend on hormonal factors.
- **Tough and dense** in the scalp, sole of the foot.
  - **Loose and thin,** sides of the neck, dorsum of the hand and foot.



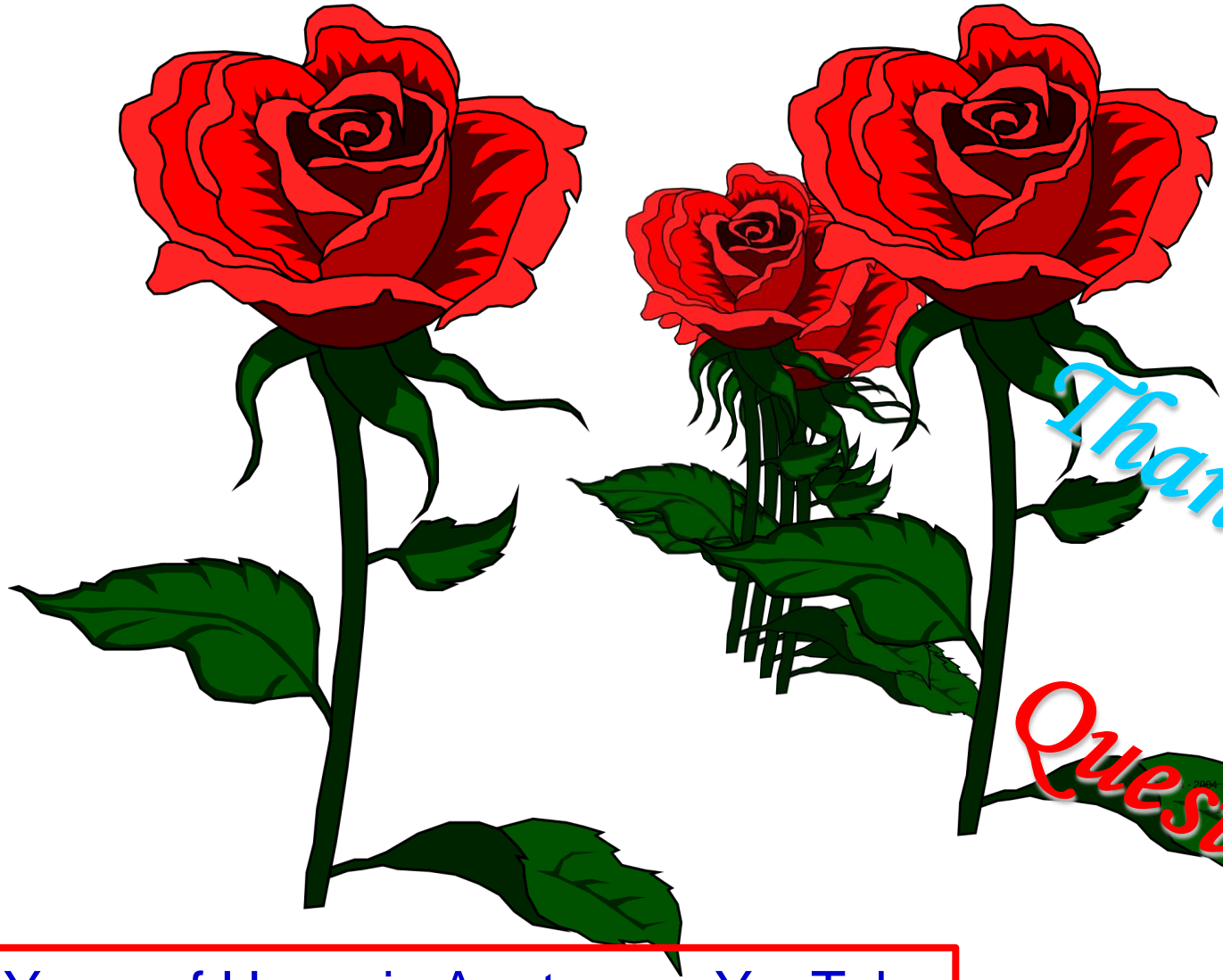


- **Superficial fascia**

1. Prevents heat loss from the body
2. Softens and smooths surface of the body
3. Facilitates the movements of skin over underlying structures
4. Contains special type of gland as mammary gland ( breast)
5. Contains muscles as facial muscles of expression, Platysma in neck and Dartos muscle of scrotum

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Thank You

Questions

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