

The background of the slide is a repeating pattern of a detailed anatomical engraving. It depicts a classroom or lecture hall where a professor is standing at a desk, addressing a group of students. The students are seated at desks, some looking towards the professor, others looking at their books or papers. The scene is filled with various anatomical figures and diagrams, typical of 17th or 18th-century medical textbooks.

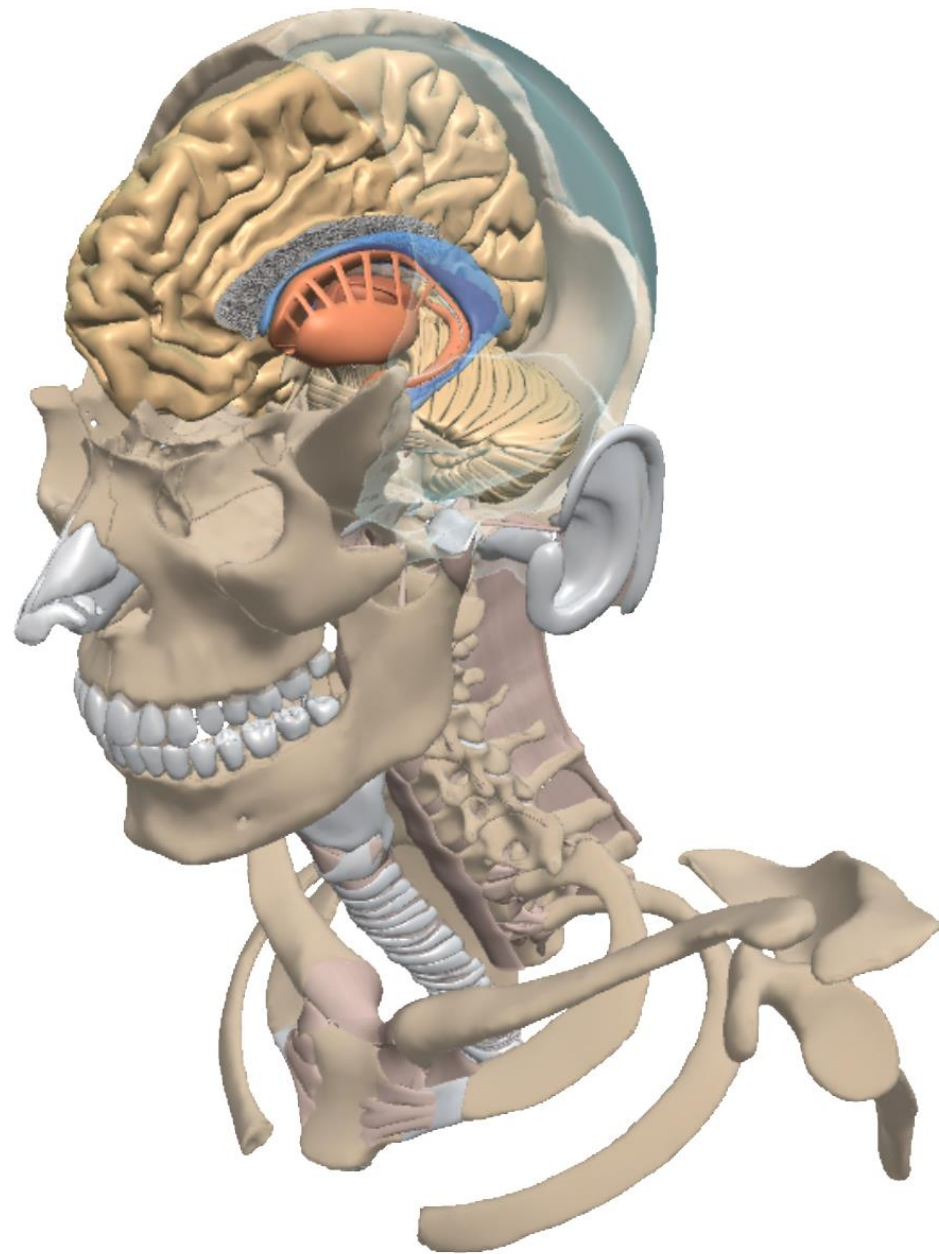
# 解剖資源簡介

飛資得醫學資訊股份有限公司

林芳輝

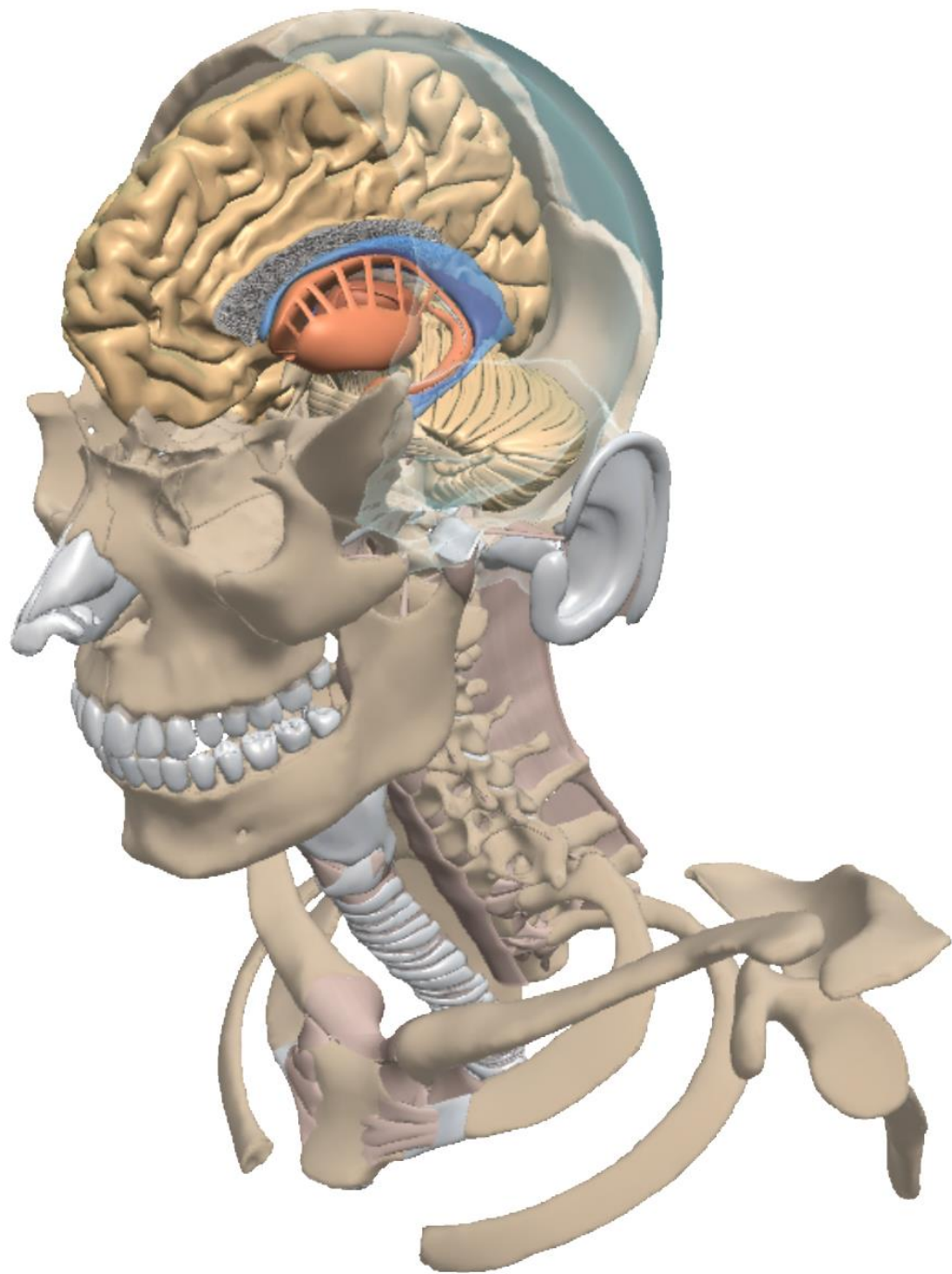
# 基礎醫學

- 3D ATLAS
- 3D Real-time
- Anatomy & Physiology
- Functional Anatomy



# 臨床應用

- Imaging
- Clinical Specialties
- Therapy
- Other Products



# 臨床情境一：

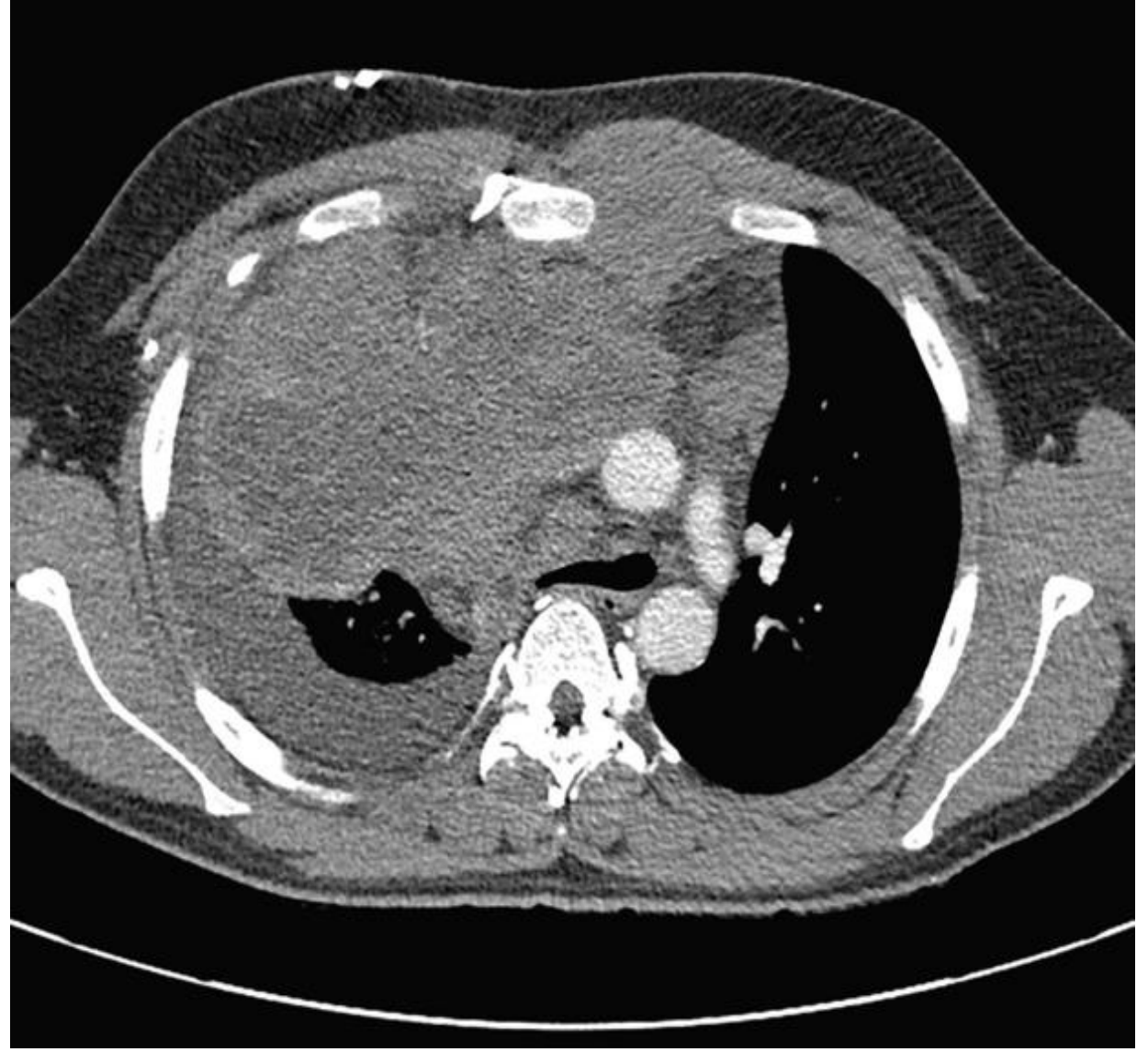
## 生理及理學檢查

患者體溫37度，心跳110/min，血壓123/72 mmHg，呼吸速率20/min，右側鎖骨上淋巴結有一個2x2cm明顯無痛的硬塊，右下肺呼吸聲稍弱，叩診呈現濁音

肝腎功能及血液電解質理學檢查均於正常數值範圍之內

胸部x光檢查，右側肺葉呈現均質瀰漫性混濁

電腦斷層掃描胸部，腹腔，骨盆區域於右前縱隔發現15x11 cm中央壞死的腫瘤，氣管向左位移，右胸有大量積液，壓迫上腔靜脈



## Superior vena cava

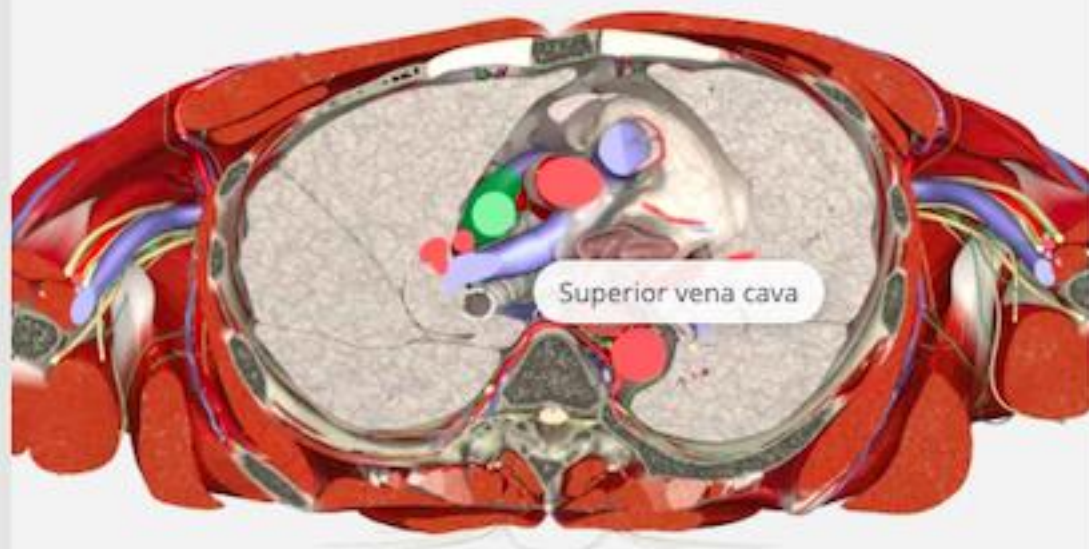


### Tributaries

Arises from the union of the two brachiocephalic veins.

It also receives blood from the following vein:

Azygos veins.



T1

T2

T3

T4

T5

T6

T7

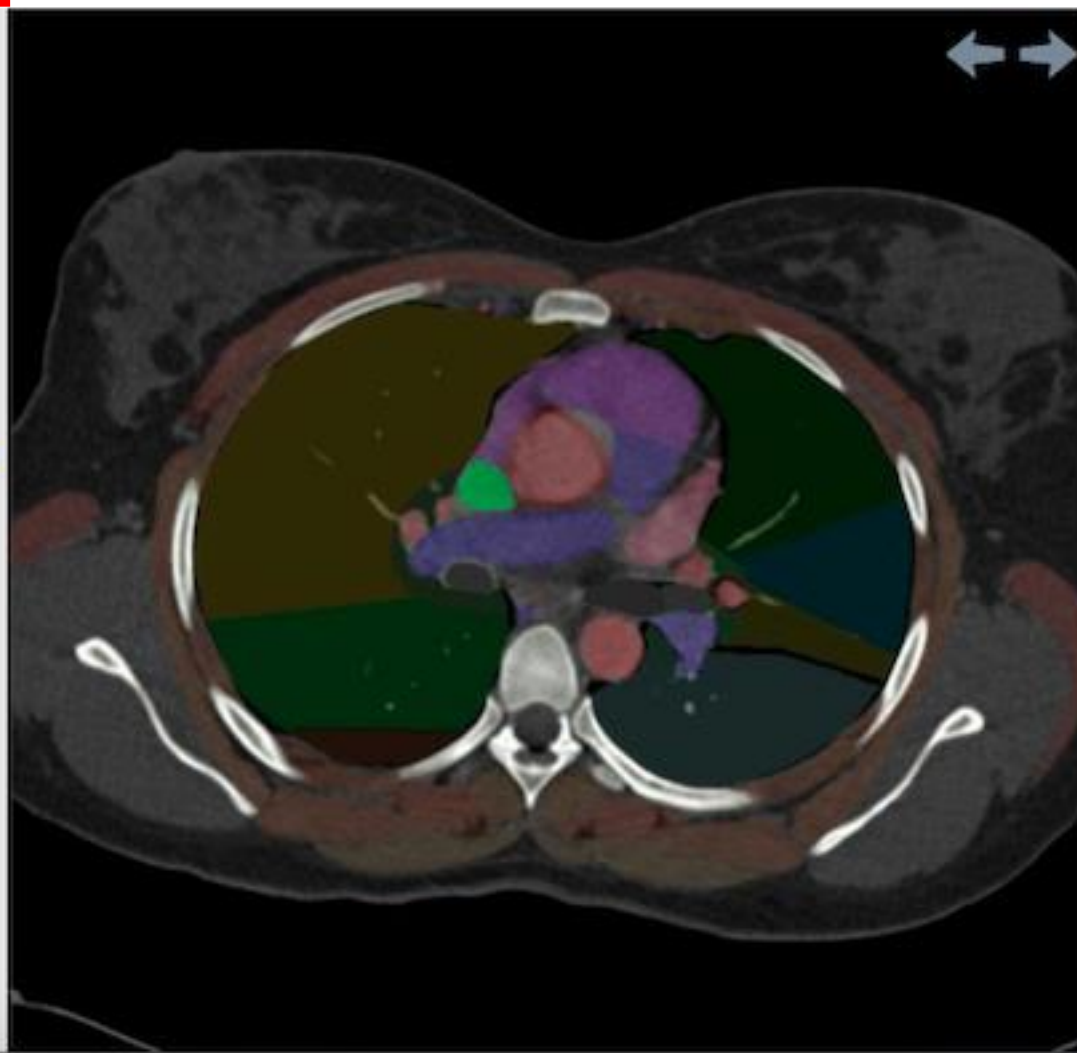
T8

T9

T10

T11

T12



## 臨床情境二：

一位年近60歲的家庭主婦右肩不時劇痛，甚至嚴重到每日都難以入眠，原以為是「五十肩」，經過半年復健、打止痛消炎針卻始終好不了，經骨科醫師看診後才發現她們罹患的是「肩峰下滑液囊炎」，局部注射治療後，一針搞定肩痛！

# Imaging

Shoulder

Axial

Sagittal

Coronal



US 2 of tendon of long head of biceps brachii



US 1 of supraspinatus and subacromial subdeltoid bursa



US 1 of supraspinatus muscle

## Subacromial subdeltoid bursitis

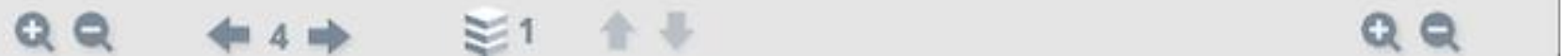
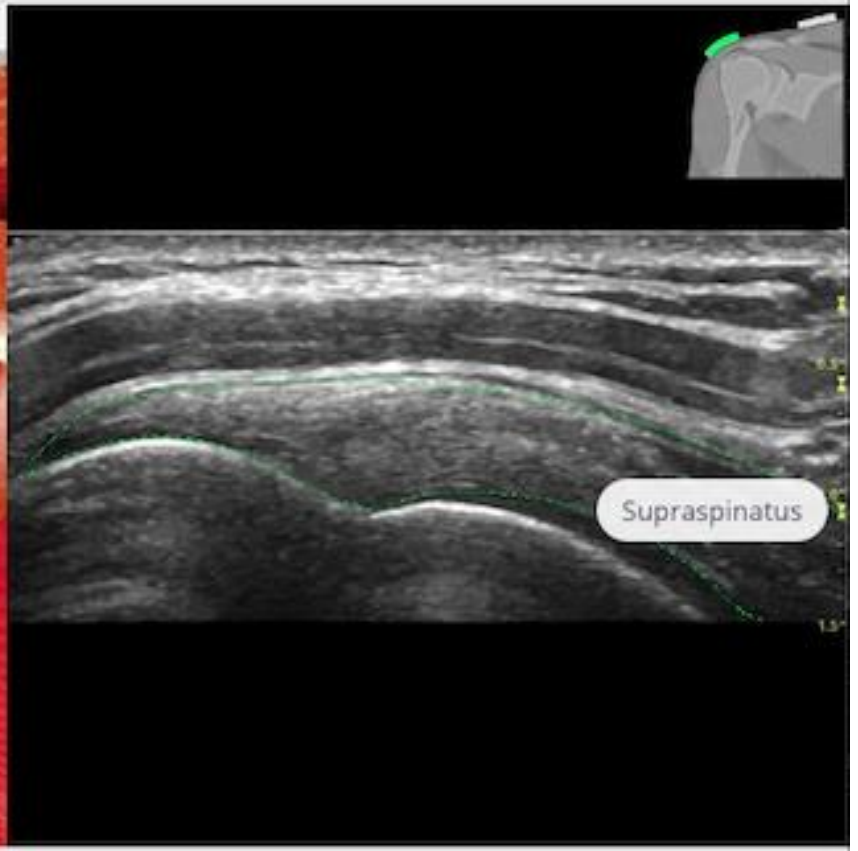
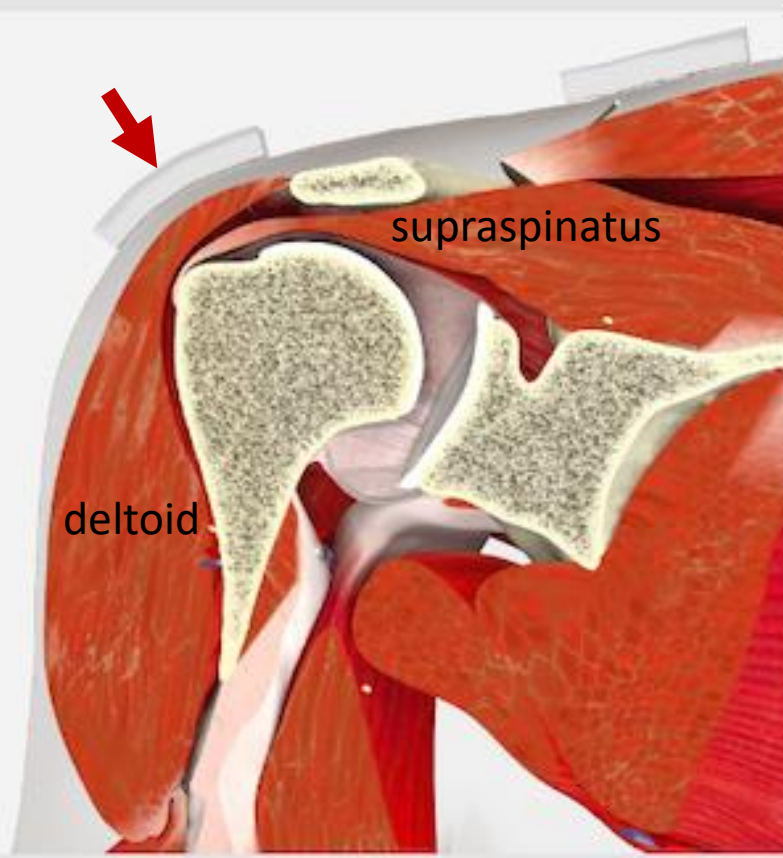
hyperechoic line surrounded by a thin layer of bright fat. Several patterns of subacromial subdeltoid bursitis are identified by ultrasound. The most common is thickening of the normal low reflective line. This can be of variable severity. When **markedly thickened**, the bursa can be seen to bunch against the coracoacromial ligament as the patient attempts to abduct their arm. Another pattern is where fluid dominates. Fluid will tend to gravitate in the lateral recess when patients are examined in the usual seated position. In patients with underlying inflammatory arthropathy, the bursa may become markedly thickened. This is often associated with **increased Doppler signal**.



Clinical link: **Subacromial subdeltoid bursitis; Supraspinatus muscle atrophy**

### Technique

The tendon of supraspinatus is best seen with the shoulder abducted and internally rotated. This is achieved by the



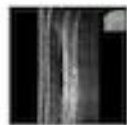


Shoulder

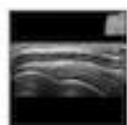
Axial

Sagittal

Coronal



US 2 of tendon of long head of biceps brachii



US 1 of supraspinatus and subacromial subdeltoid bursa

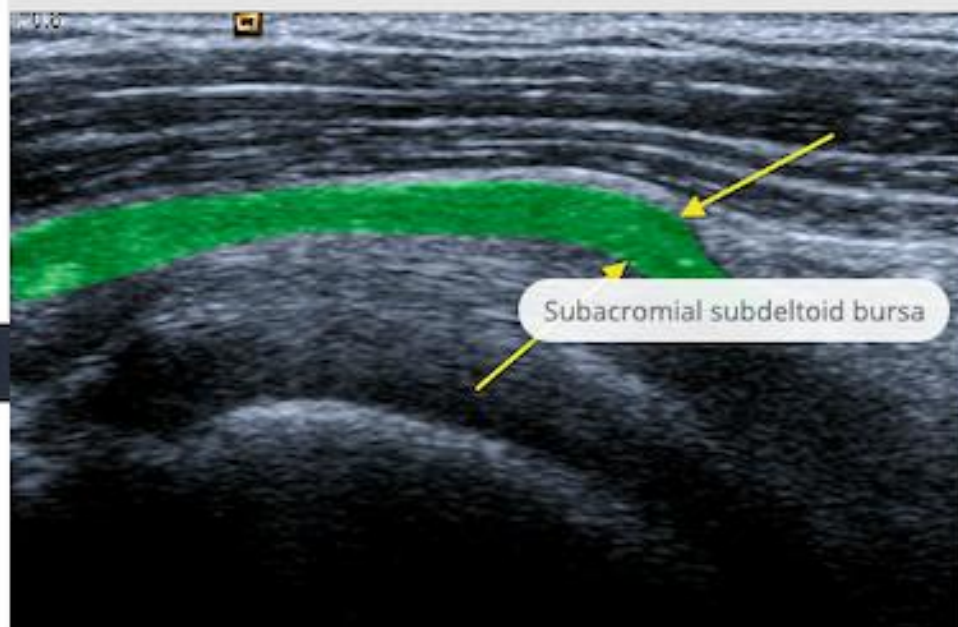


US 1 of supraspinatus muscle

### Subacromial subdeltoid bursitis



Hyperechoic line surrounded by a thin layer of bright fat. Several patterns of subacromial subdeltoid bursitis are identified by ultrasound. The most common is thickening of the normal low reflective line. This can be of variable severity. When **markedly thickened**, the bursa can be seen to bunch against the coracoacromial ligament as the patient attempts to abduct their arm. Another pattern is where fluid dominates. Fluid will tend to gravitate in the lateral recess when patients are examined in the usual seated position. In patients with underlying inflammatory arthropathy, the bursa may become markedly thickened. This is often associated with **increased Doppler signal**.



The subacromial bursa extends under the acromion and coracoacromial ligament. Laterally the bursa lies over the superior surface of the supraspinatus and infraspinatus tendons, and extends beyond the lateral and anterior aspects of the acromion, under the deltoid. It is generally surrounded by peribursal fat, and in normal individuals represents a potential space only.

The bursa serves as a gliding mechanism between the rotator cuff and coracoacromial arch. Although communication exists between the subacromial and subcoracoid bursae, there may be no communication between the subcoracoid and subscapularis bursae.

### PATHOLOGY

#### Subacromial-subdeltoid bursitis (Magnetic Resonance Appearance in Shoulder Impingement)

The changes in the subacromial bursa are generally thought to be secondary to tendon degeneration or tendinopathy as part of impingement. Normally, the subacromial-subdeltoid bursa is small, with a flat and noninflamed synovial lining. Identification of this structure, and of signal intensity within the peribursal fat, can be used to describe subacromial bursitis on MR images. Bursal inflammation is seen as decreased signal intensity – or loss of peribursal fat – on T1 weighted images and as increased signal intensity – from associated fluid, inflammation, and/or bursal proliferative disease – on conventional T2 or fat-suppressed T2 fast spin-echo sequences. Although the changes of

Visible structures



## Imaging

## Subacromial subdeltoid bursal thickening: axial US ... +

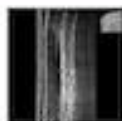
## Supraspinatus

Shoulder

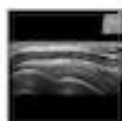
Axial

Sagittal

Coronal



US 2 of tendon of long head of biceps brachii



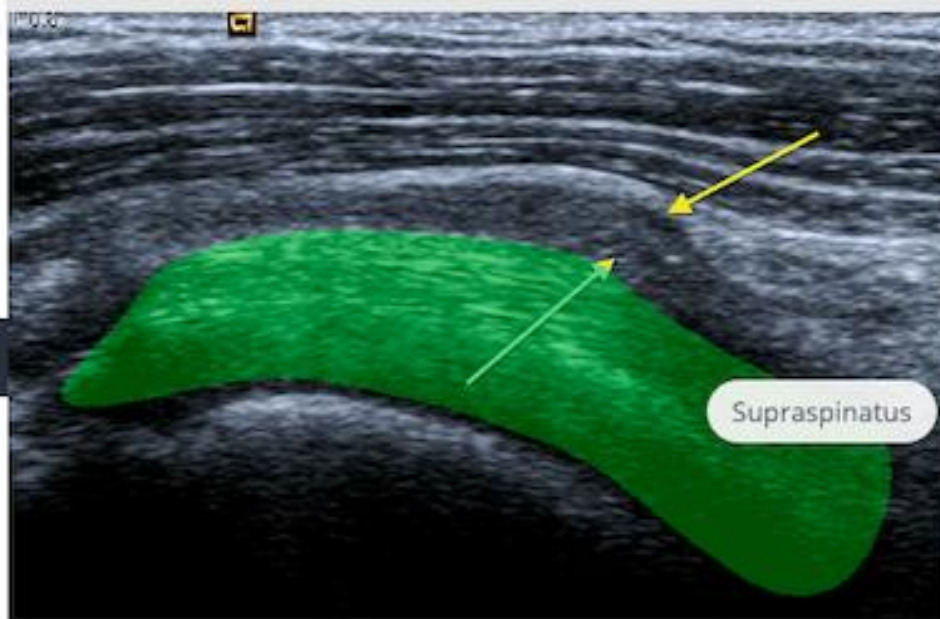
US 1 of supraspinatus and subacromial subdeltoid bursa



US 1 of supraspinatus muscle

### Subacromial subdeltoid bursitis X

hyperechoic line surrounded by a thin layer of bright fat. Several patterns of subacromial subdeltoid bursitis are identified by ultrasound. The most common is thickening of the normal low reflective line. This can be of variable severity. When **markedly thickened**, the bursa can be seen to bunch against the coracoacromial ligament as the patient attempts to abduct their arm. Another pattern is where fluid dominates. Fluid will tend to gravitate in the lateral recess when patients are examined in the usual seated position. In patients with underlying inflammatory arthropathy, the bursa may become markedly thickened. This is often associated with **increased Doppler signal**.



Supraspinatus is one of the four *rotator cuff* muscles of the shoulder joint.

#### Origin

Scapula: supraspinous fossa.

#### Insertion

Humerus: greater tuberosity.

#### Innervation

Suprascapular nerve (C4, 5, 6).

#### Actions

It initiates abduction.

As a member of the rotator cuff, it stabilizes the shoulder joint.



Visible structures

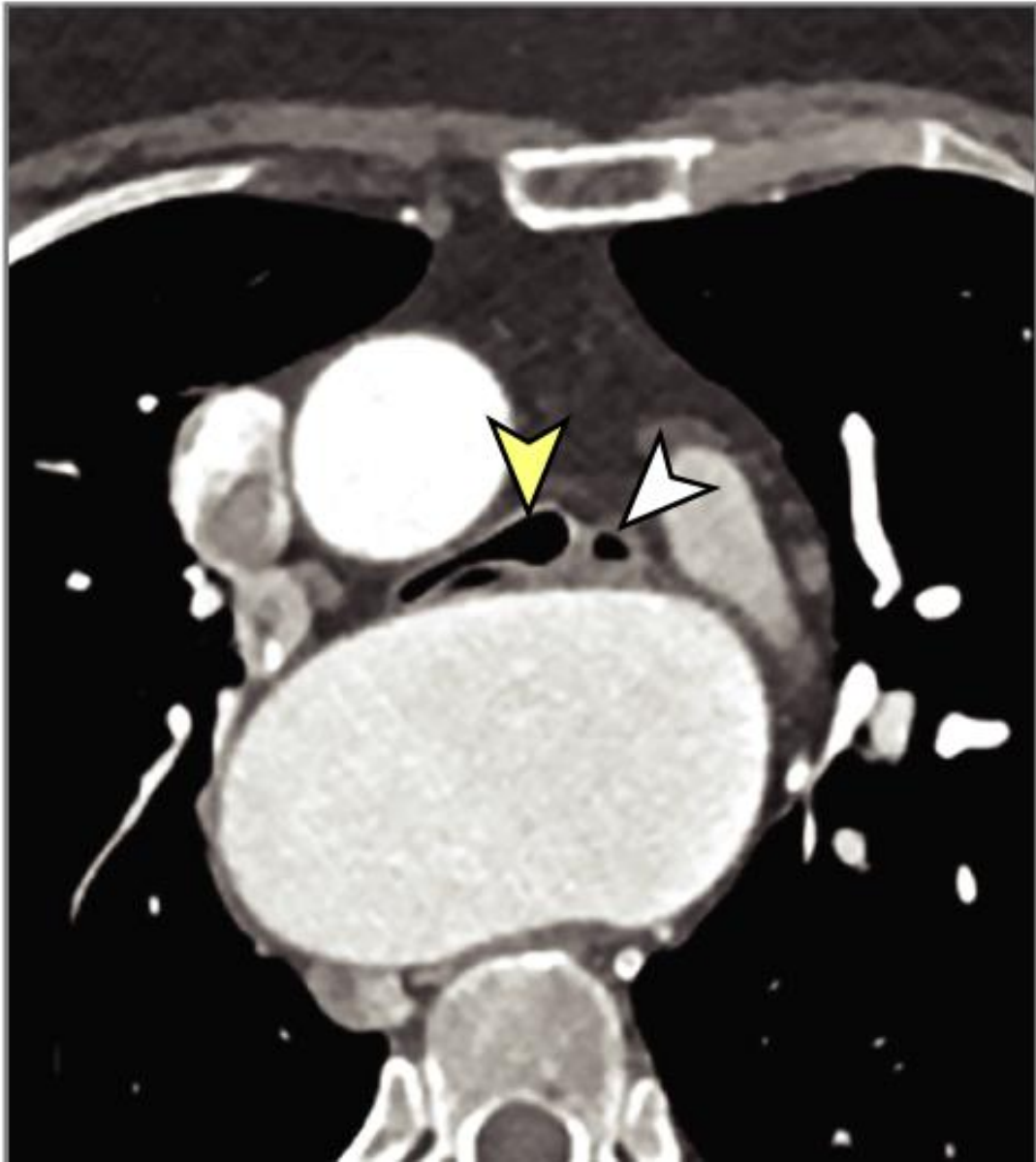
## 臨床情境三：

60多歲婦女自述近兩年開始固體食物進食吞嚥困難，近一週有咳嗽、發燒及呼吸困難的狀況。輕度體重減輕，無厭食，嘔吐，胸痛，消化不良等症狀。近十年高血壓控制不佳。無吸煙，飲酒或吸毒史。入院前的胸部X光片檢查結果顯示兩個肺都有多個滲出灶。入院時的相關理學檢查結果顯示，兩側肺部都有喘鳴音和囉音，其他情況正常。常規血液檢查無異常。進行了食道鋇劑造影以評估吞嚥困難的狀況

# 食道造影前視 & 側視



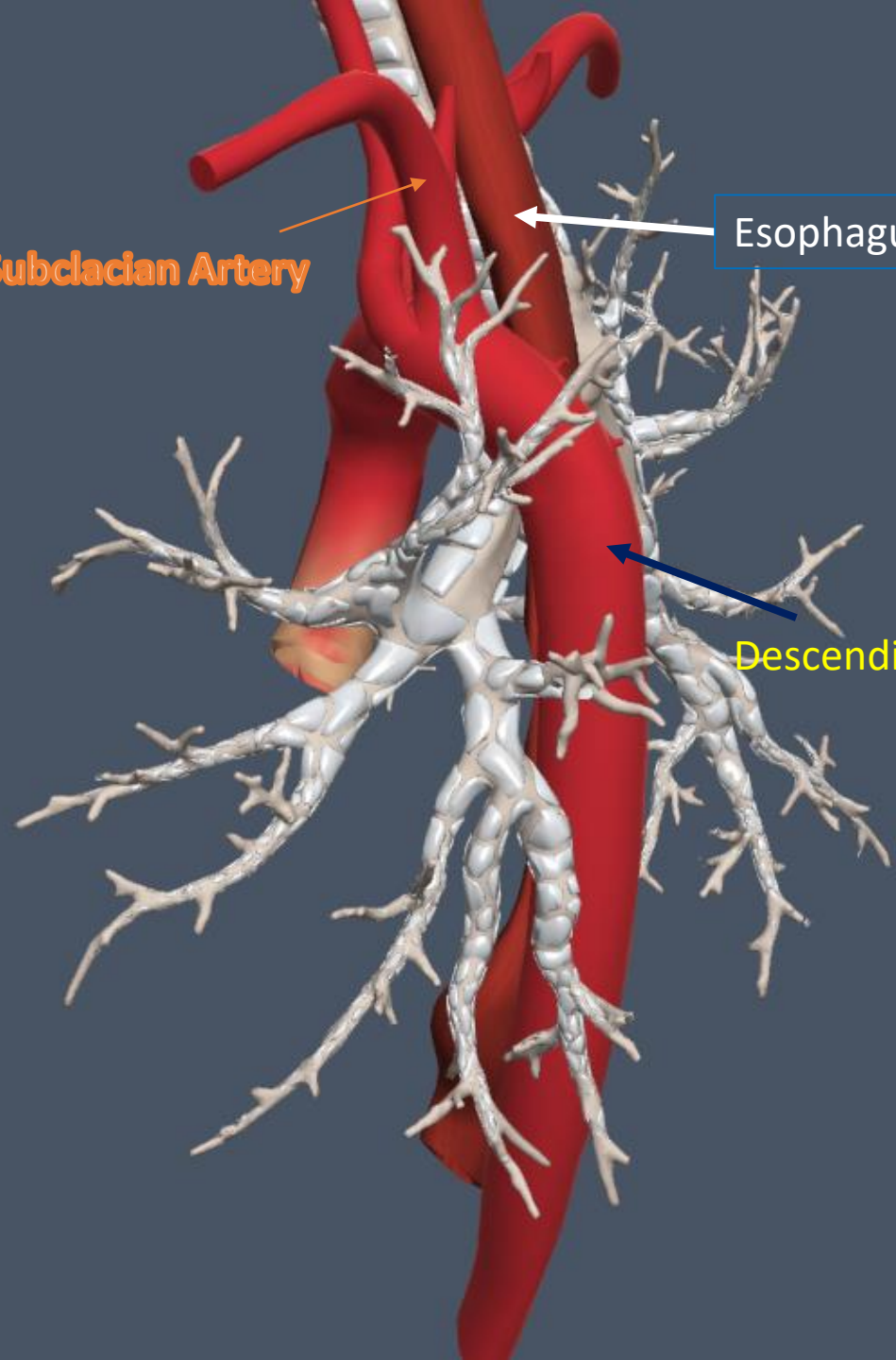
主動脈 (Aorta) 電腦斷層血管攝影 3D重構影像 & Axial View

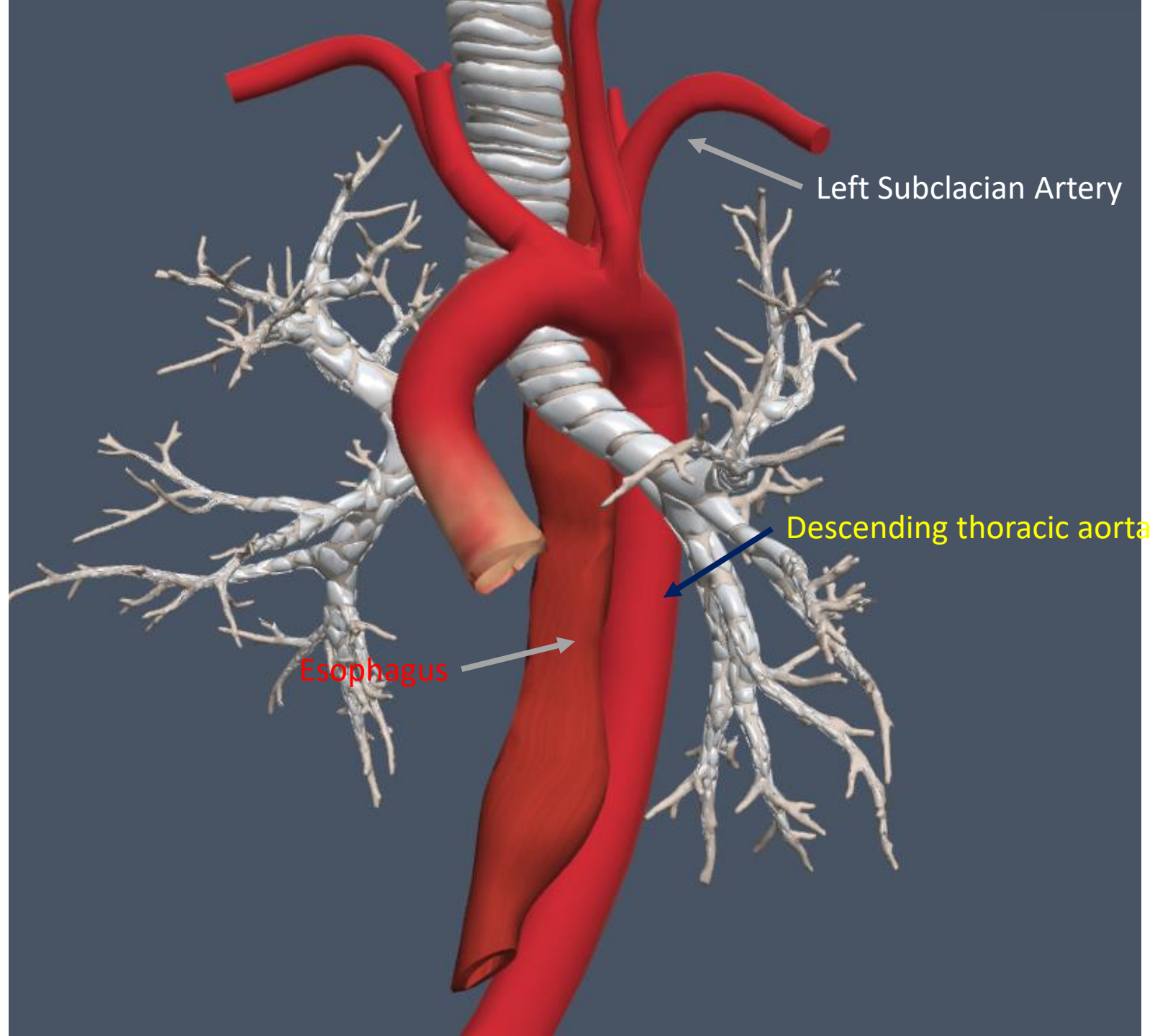


**Left Subclavian Artery**

Esophagus

Descending thoracic aorta



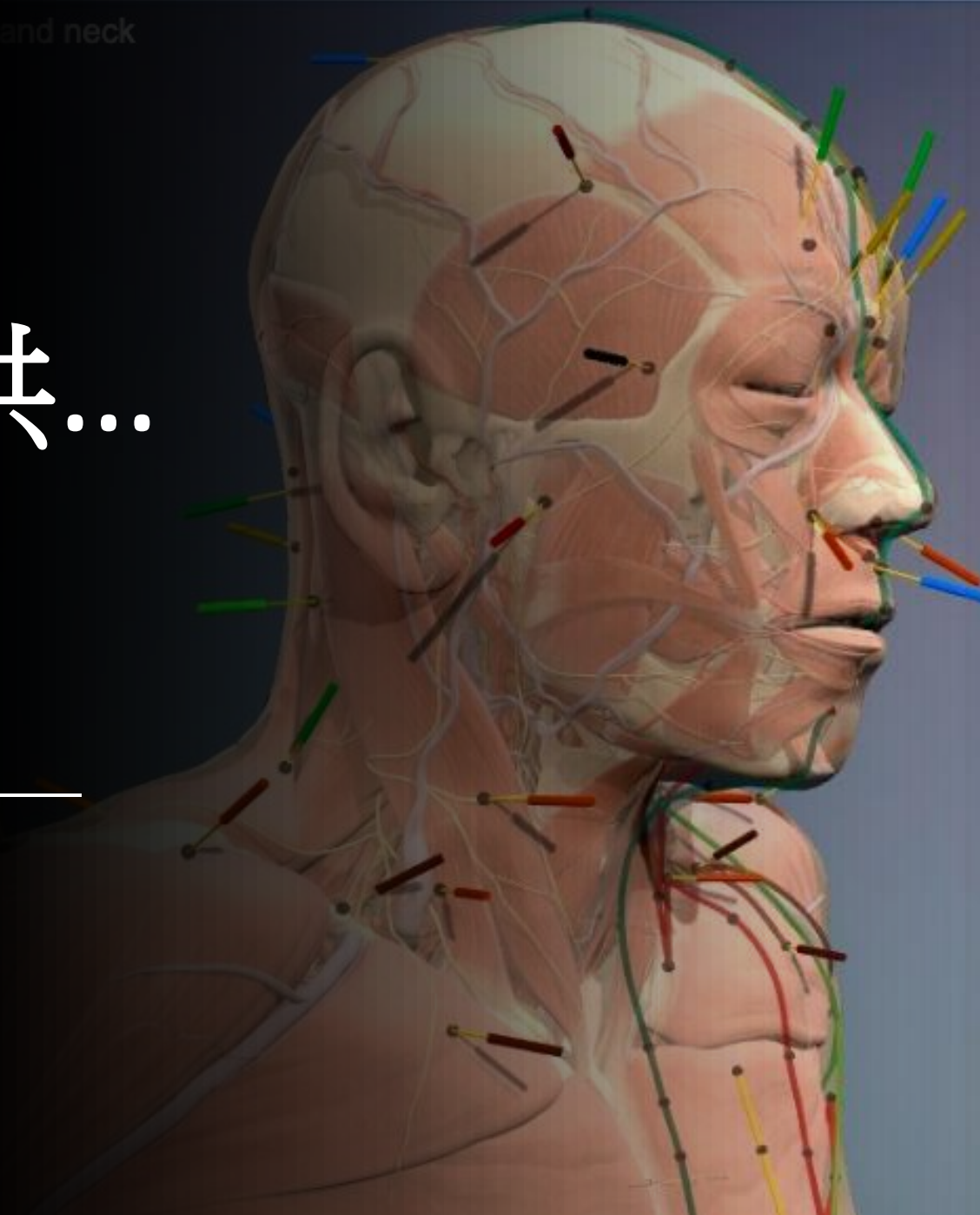


Left Subclavian Artery

Descending thoracic aorta

Esophagus

# PRIMAL提供...



## 天牖

**Chinese name**

*Tianyou.*

**Acupuncture point posi**

On the posterior border of o

**Needle track**

Past the posterior edge of  
capitis, or semispinalis ca

**Target structure**

[Splenius capitis](#), [longissim](#)

**Notes**

Nil.

**WARNINGS**

The [vertebral artery](#) is a



提供詳細資訊

PRIMAL'S 3D ATLAS OF HUMAN ANATOMY OF THE HEAD AND NECK

3D Views

- Head and neck
- Head
- Face
- Brain
- Eye
- Ear
- Aerodigestive tract
- Neck
- Surface features
- Bone regions
- Nervous system

Head and neck



Ligamentum nuchae

Masseter

**Origin**  
The **masseter** consists of three overlapping layers. A superficial part arises from the zygomatic process of the maxilla and from the anterior two-thirds of the lower border of the zygomatic arch. A middle part originates from the deep surface of the anterior two-thirds of the zygomatic arch and from the lower border of the posterior one-third of the arch. A deep part arises from the deep surface of the zygomatic arch.

**Insertion**  
The three layers merge as the fibers pass downward and backwards to insert into the lateral surface of the angle of the mandible and the coronoid process of the mandible.

**Nerve supply**  
The masseteric nerve from the anterior division of the mandibular nerve innervates the muscle.

**Vasculature**  
The arterial supply is derived from the transverse facial branch of the superficial temporal, the masseteric branch of the maxillary artery and the facial arteries.

**Action**  
The **masseter muscle** elevates the mandible.

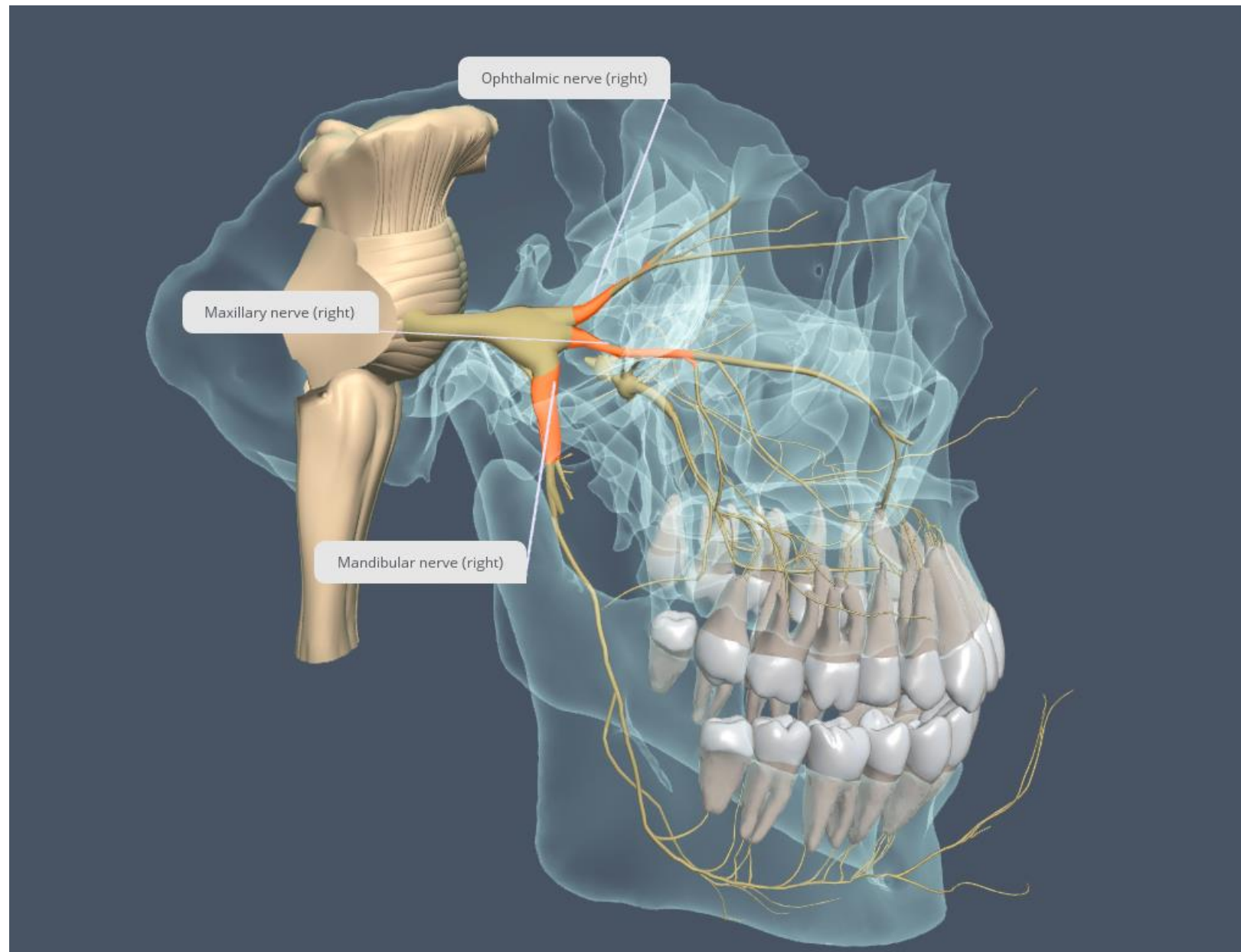
**Temporomandibular joint (TMJ)**  
The temporomandibular joint is a synovial joint and is the articulation between the condyle of the mandible and the squamous portion of the temporal bone. The articular surfaces are lined with a layer of fibrocartilage and there is also a fibrocartilagenous articular disc (**meniscus**) dividing the jaw joint into superior and inferior joint spaces. Each joint space is filled with synovial fluid.

**Capsule of the joint;**  
The capsule extends from the neck of the condyle around the articular margin; above it is attached just anterior to the articular eminence anteriorly and to the

Visible structures

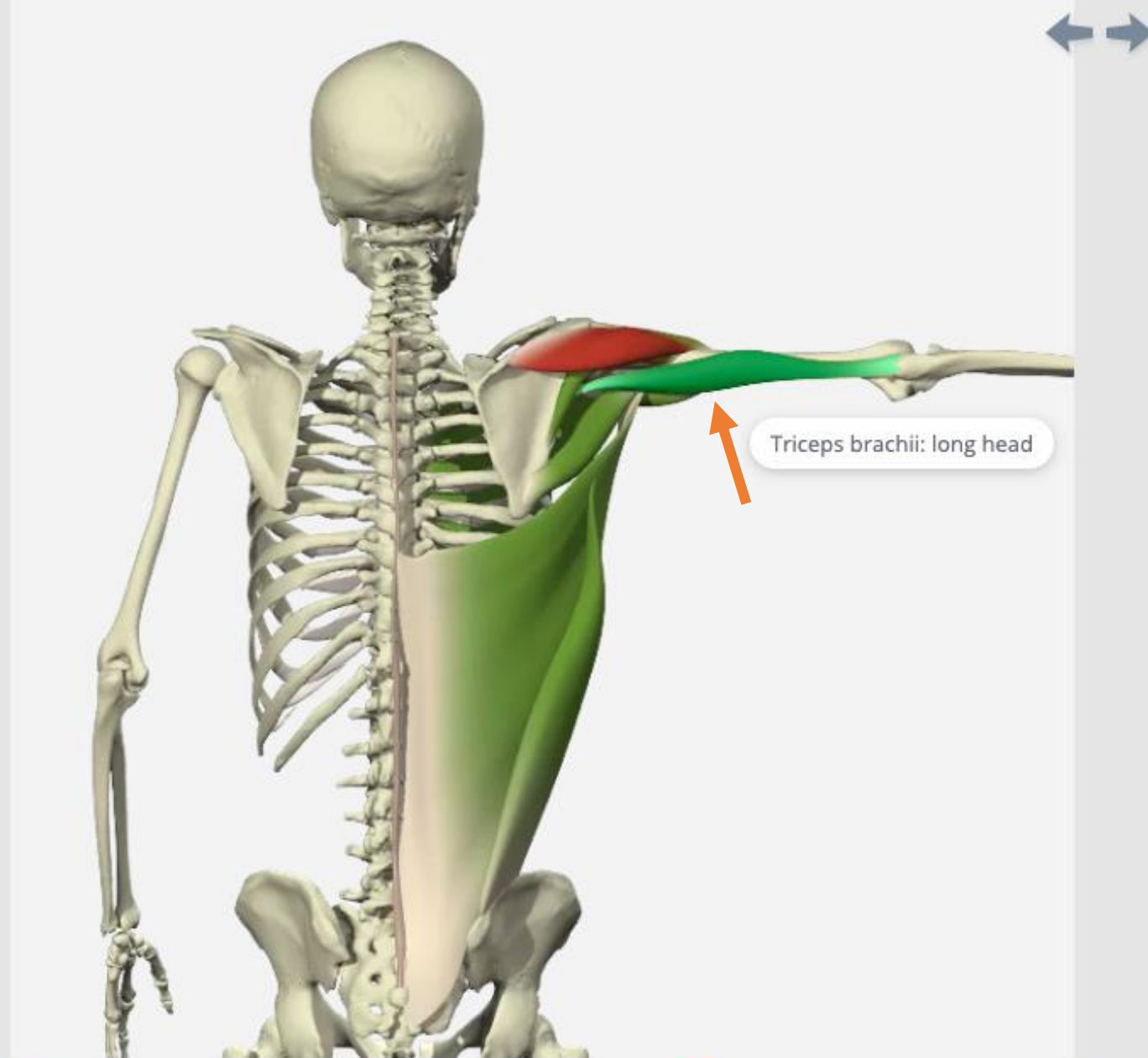
可以水平轉換角度

提供聚焦重點



提供動作細節





Triceps brachii: long head

**Proximal attachment**

Infraglenoid tubercle of the scapula.

**Distal attachment**

Posterior surface of the olecranon process of the **ulna**.

**Innervation**

Radial nerve (C6, 7).

**Blood supply**

Muscular branches and superior ulnar collateral and profunda brachii arteries from the brachial artery.

**Primary actions**

1. Extension of the arm at the shoulder (**Anim 1, Anim 2, Movie**)

Agonists: **deltoid** (posterior part), **latissimus dorsi**, **pectoralis major** (sternal head), and **teres major**

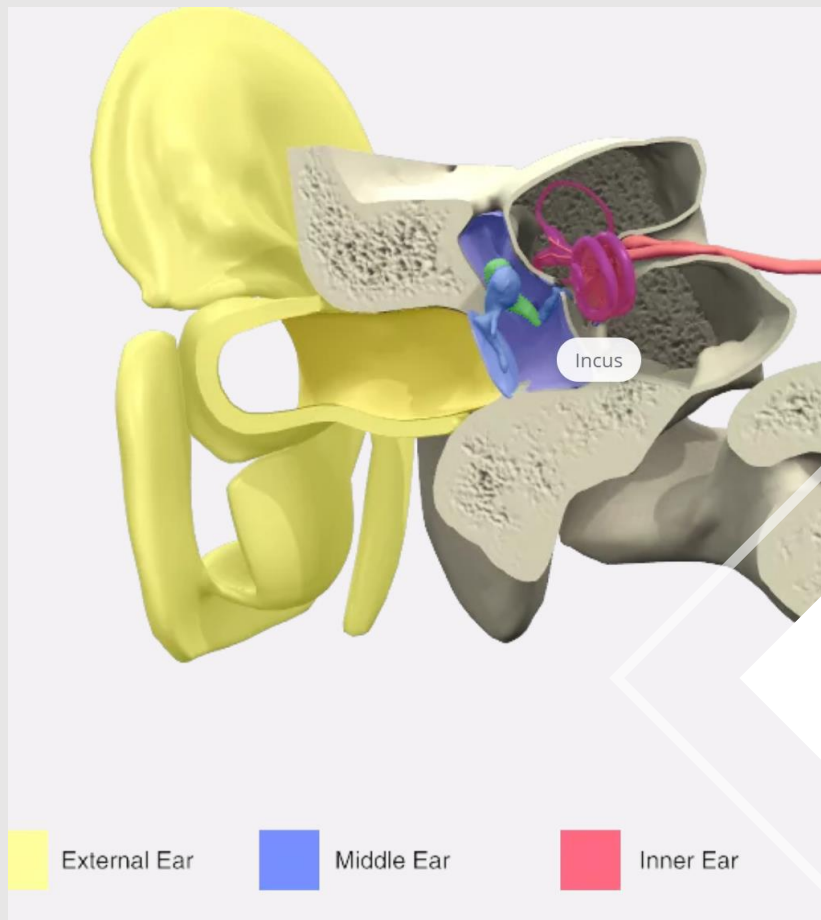
Antagonists: **deltoid** (anterior part), **coracobrachialis**, **biceps brachii**, and **pectoralis major** (clavicular head)

**Latissimus dorsi** and **pectoralis major** (sternal head) will act only against a heavy resistance and their activity terminates as the arm reaches the coronal plane. From this point, **teres major** will take over.

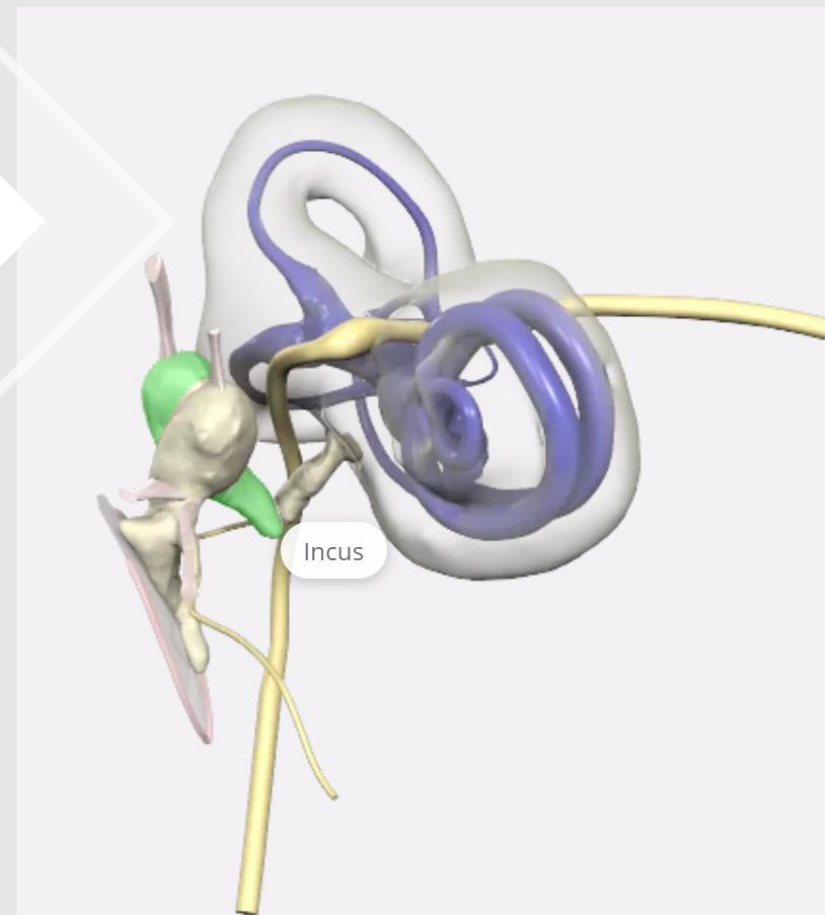
2. Adduction of the arm at the shoulder (**Anim**)

Agonists: **latissimus dorsi**, **pectoralis major** (sternal head), **pectoralis major** (clavicular head), and **teres major**

Antagonists: **deltoid** (middle part) and



# 提供 動態影音課程

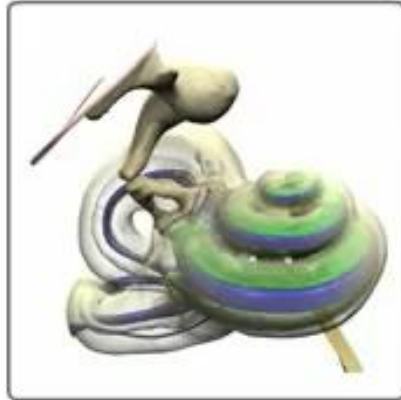
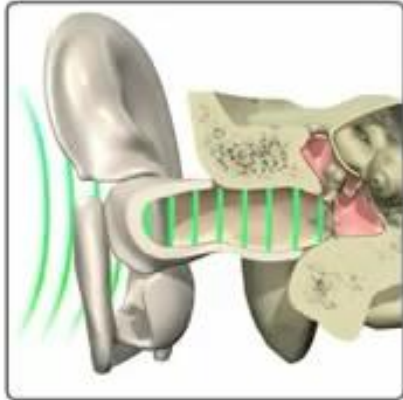


# 聲音傳導機制

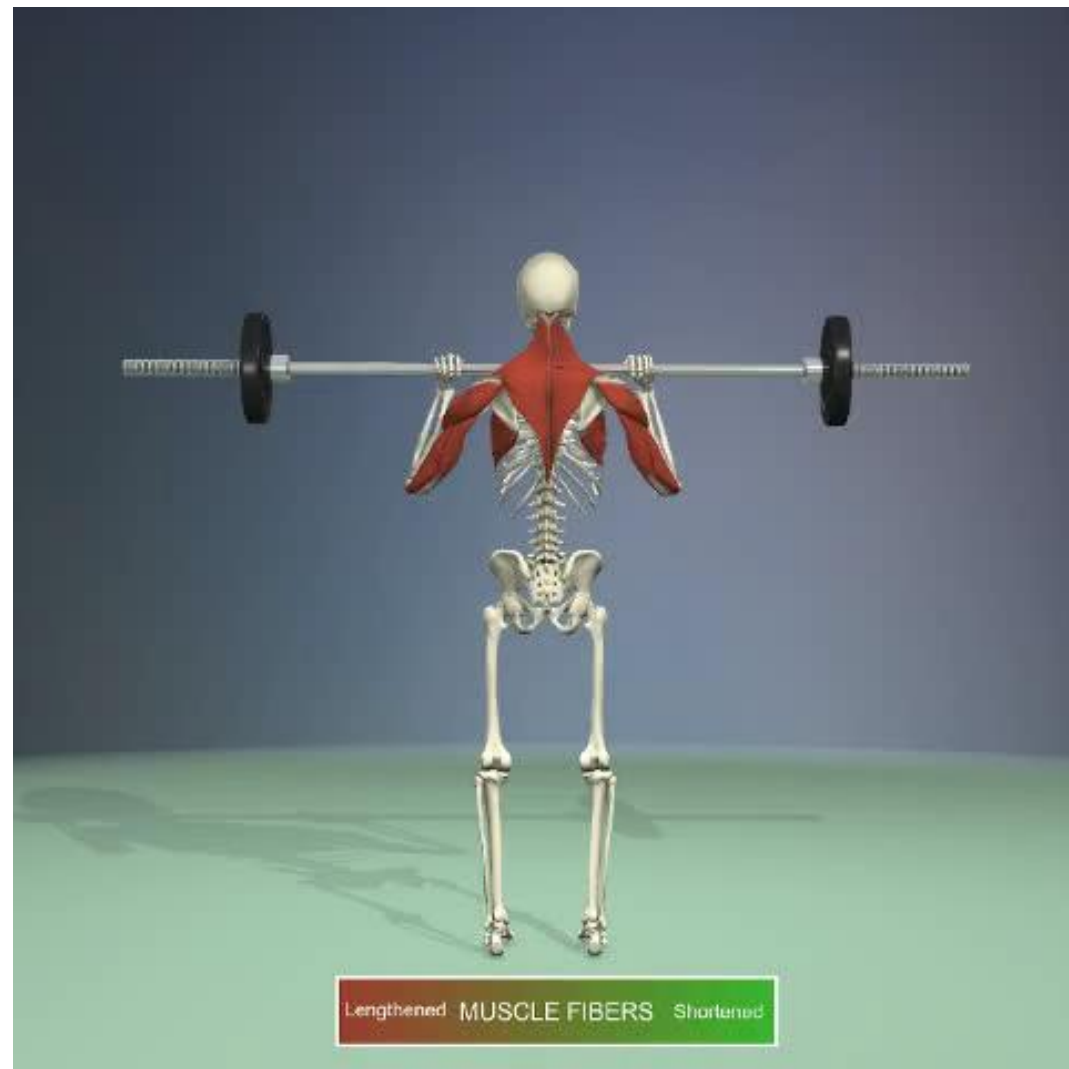
## Sound Transmission

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Sound waves are oscillations of pressure in a medium such as air or liquid. External sound waves are transmitted through the external and middle ear to the hair cells of the cochlea, which act as auditory receptors.



# 臨床應用



*Thank You*

