The exercise training of the scapular dyskinesis

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contents

scapular dyskinesis

scapular dyskinesis（SD）（肩胛骨动力障碍）

SD is defined as the position and the trajectory of the scapular was changed when the scapular is resting or moving.SD could appear in various shoulder diseases ,such as subacromial impingement syndrome(肩峰下撞击综合征)，rotator cuff injury(肩袖损伤).

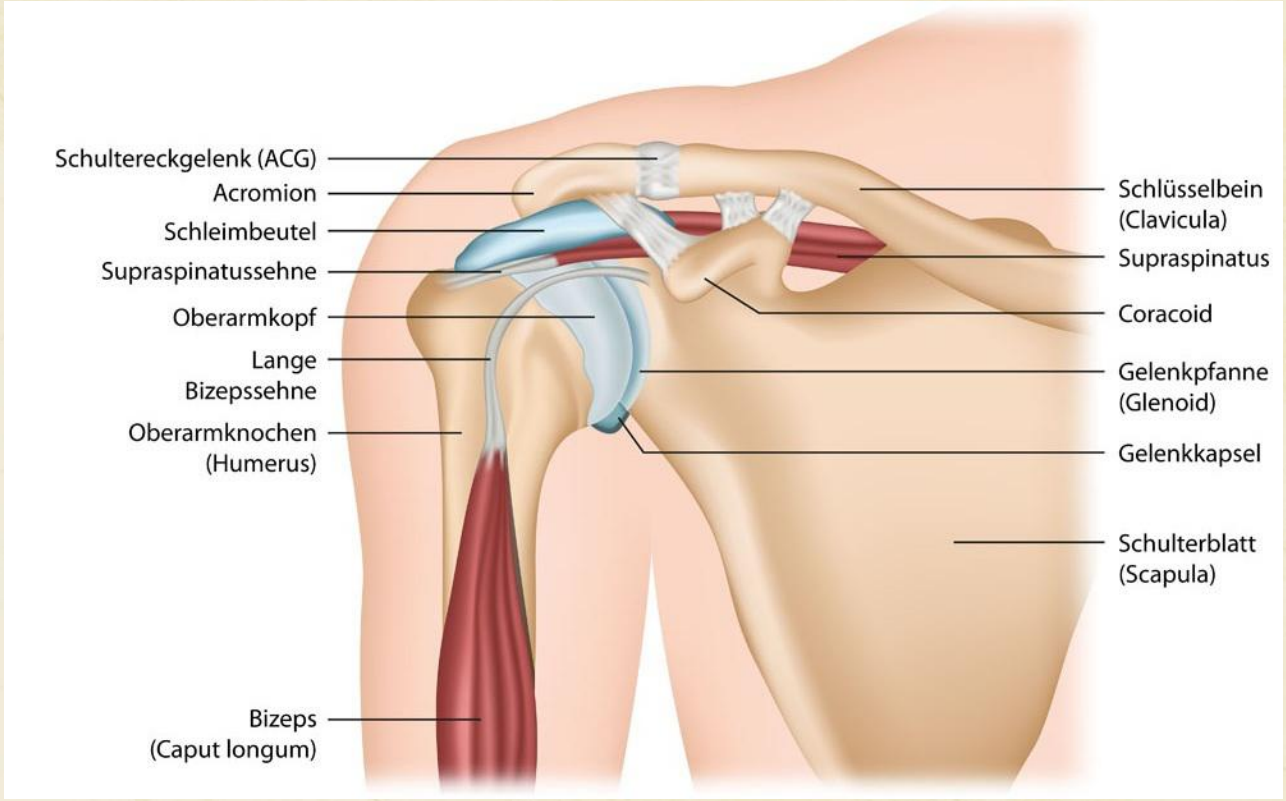
[1] 方镇洙,舒帆,杨凯,等.

1、The scapular makes up glenohumeral joints with the caput humerus

2、The scapular glenoid and the distal clavicle make up the acromioclavicular joints

3、The scapular makes up the scapulothoracic joints with the thoracic wall

So，the change of the scapular trojectory may lead to the shouder dysfunction, the muscle injury ,even changing the shoulder movement patterns.



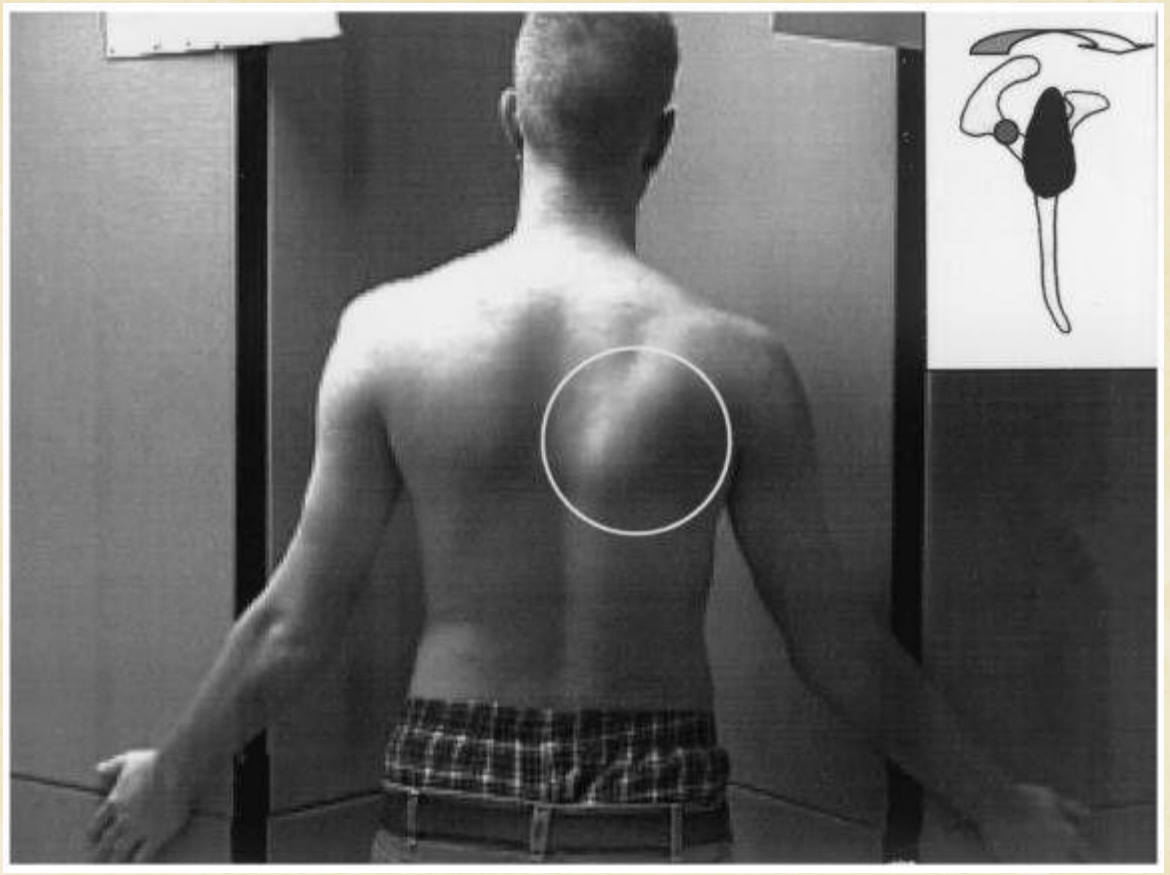
The diagnostic categories of the scapular dyskinesis

Inferior angle (type I)
At rest, the inferior medial scapular border may be prominent dorsally. During arm motion, the inferior angle tilts dorsally and the acromion tilts ventrally over the top of the thorax.
Medial border (type II)
At rest, the entire medial border may be prominent dorsally. During arm motion, th e medial scapular border tilts dorsally off the thorax.
Superior border (type III)
At rest, the superior border of the scapula may be elevated and the scapula can als o be anteriorly displaced. During arm motion, a shoulder shrug initiates movement without significant winging of the scapular occurring.
Symmetric scapulohumeral (type IV)
At rest or
during arm motion, the position of both scapulae are relatively symmetrical

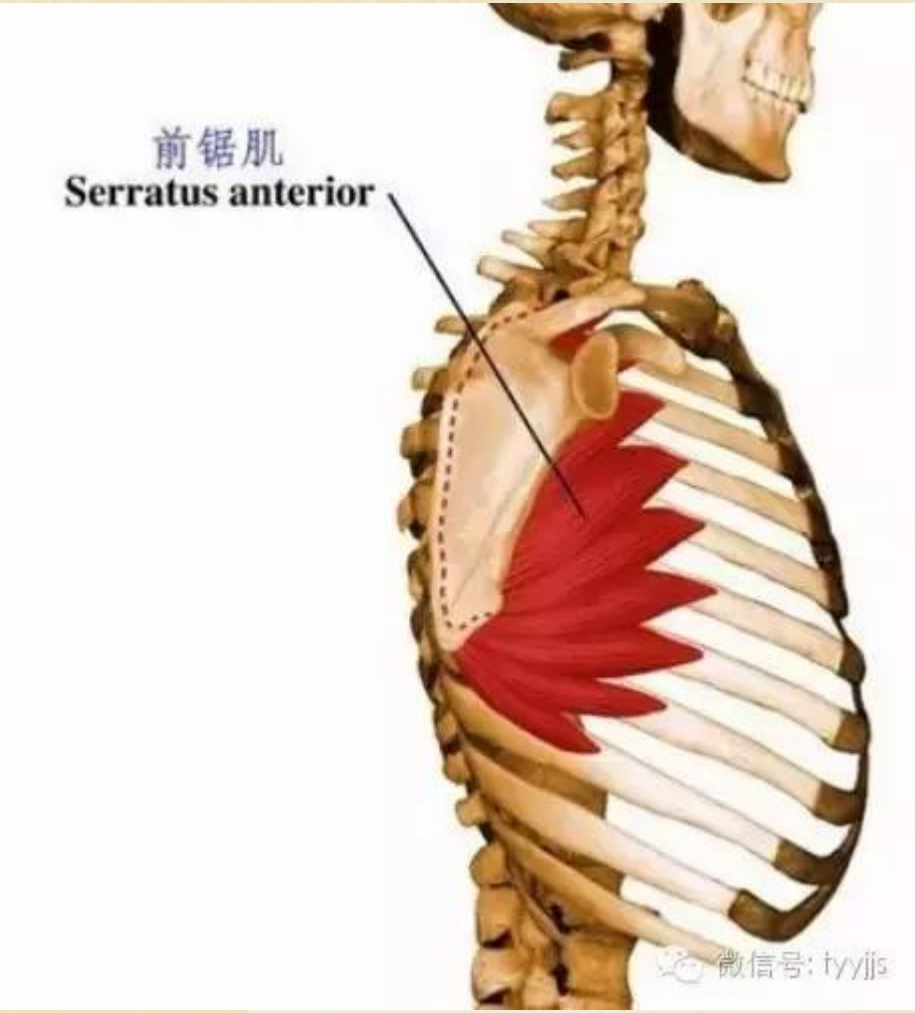
Kibler WB,Tim L.Soulder eblow surg,2002

Type I: Inferior angle

At rest, the inferior medial scapular border may be prominent dorsally. During arm motion, the inferior angle tilts dorsally and the acromion tilts ventrally over the top of the thorax

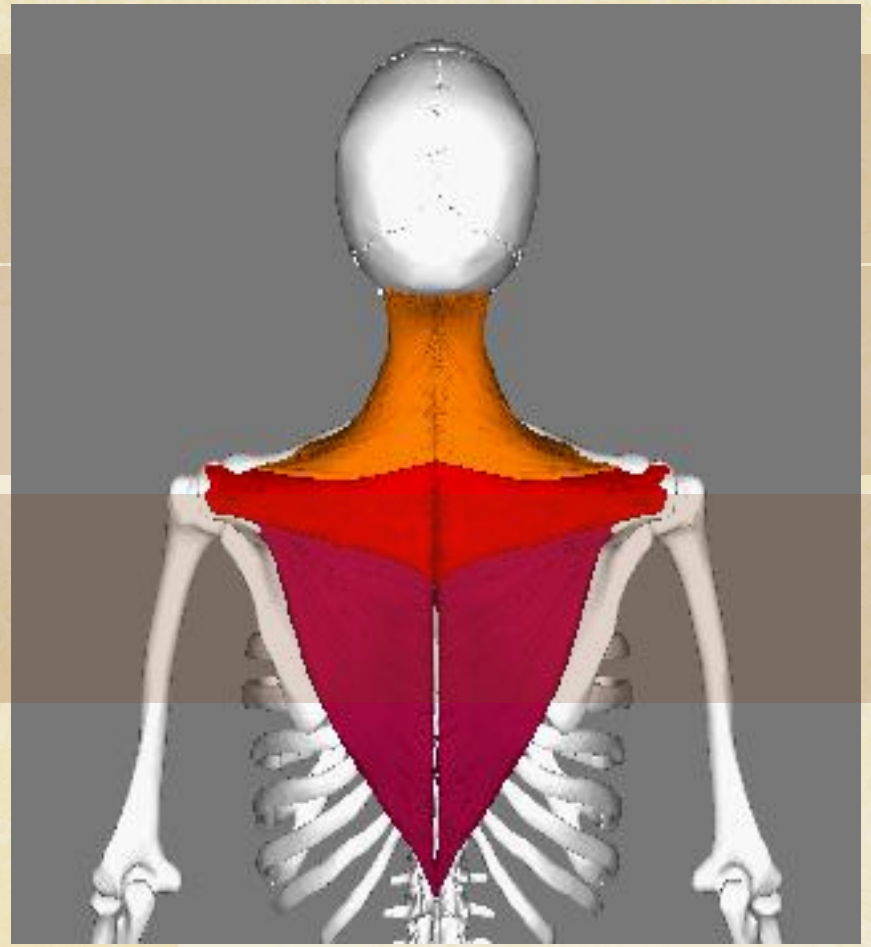


1、Serratus anterior



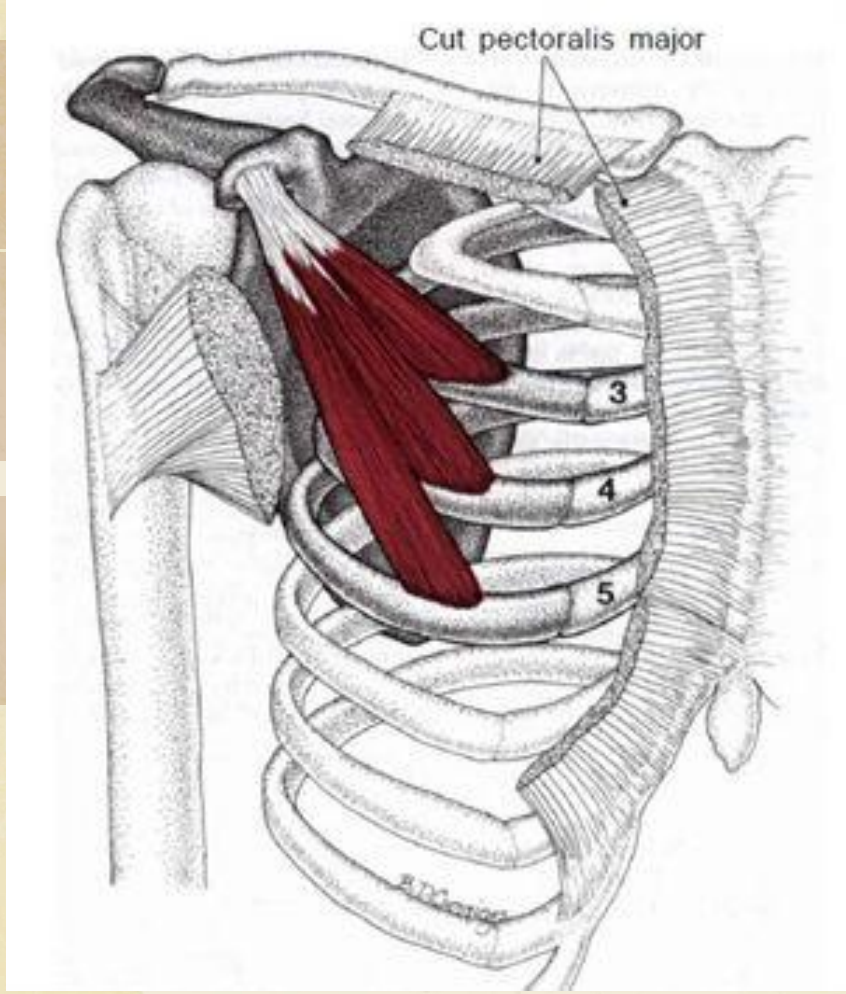
The function of the serratus anterior is pull the scapular forward and make it close to thoracic， inferior muscle make the inferior angle of scapula external rotation .The strength of the serratus anterior weakened or the lack of activation can lead to the type I,so we need to strengthen the serratus anterior.

2、Inferior trapezius



The function of the inferior trapezius is make the scapula adduction and depression, in type I,the inferior trapezius' strength is also get down,so we should train it.

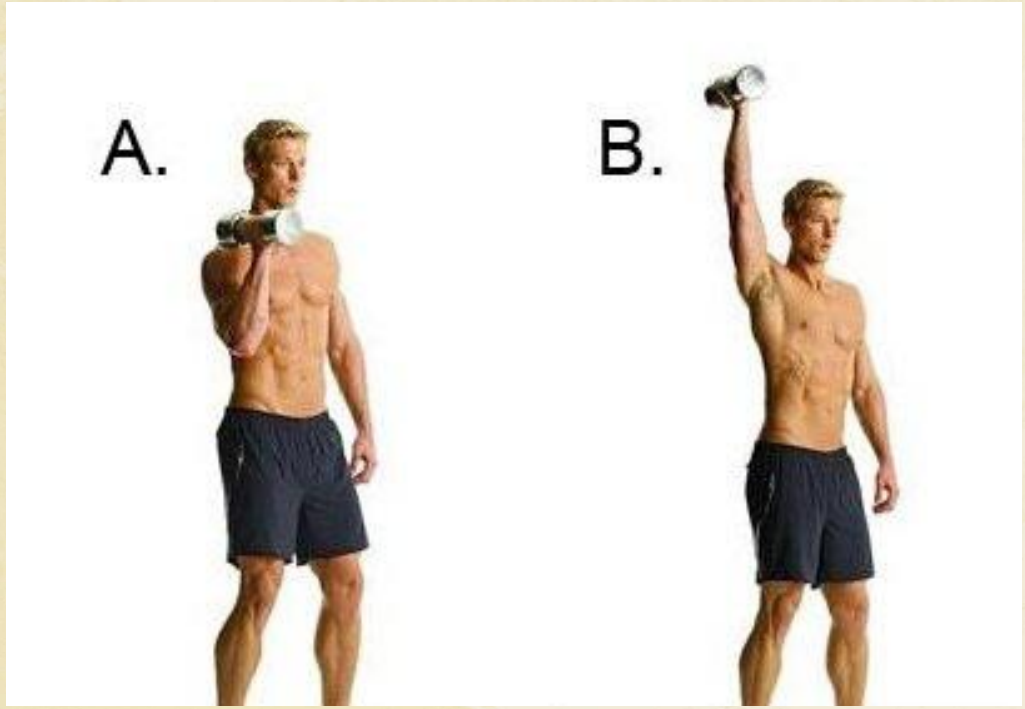
3、Pectoralis minor



The function of the pectoralis minor is that make the scapula elevation and upward rotation,in type I,the pectoralis minor is tension,we need to relex it.

The training of the serratus anterior

Dumbbell lift on single arm side



Action points：stand upright,visual ahead,lift the dumbbell by one hand,make the weight of dumbbell on the serratus anterior area,lift the dumbbell , feel your serratus anterior shrink,lift with inspiration.

The training of the inferior trapezius

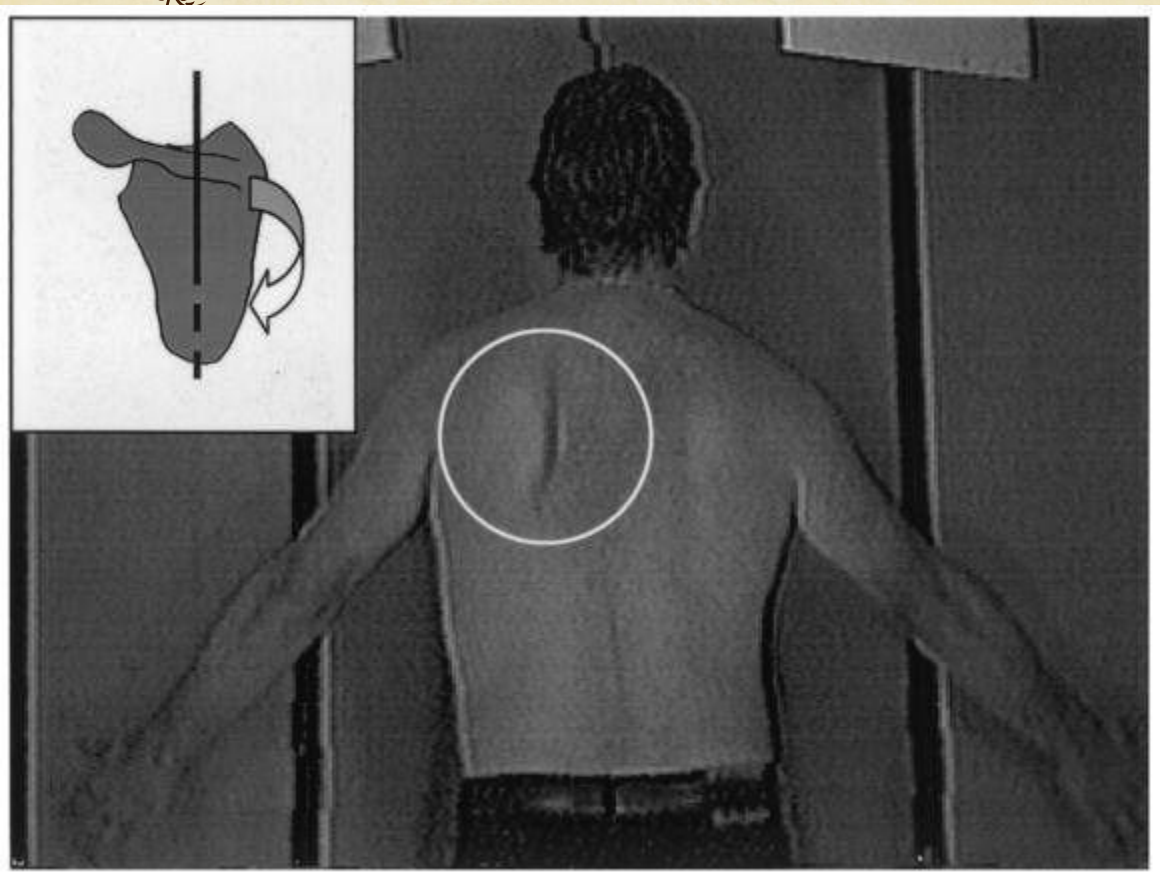
Shrugs your shoulder with barbell

Action points：stand by your feet ,hold the barbell in front of your body,straight your body, make your shoulder down as far as possible,shrug your shoulder with inspiration

The active stretching of the pectoralis minor

The therapist holds the scapular and coracoid process at the end-point as the patient breaths out

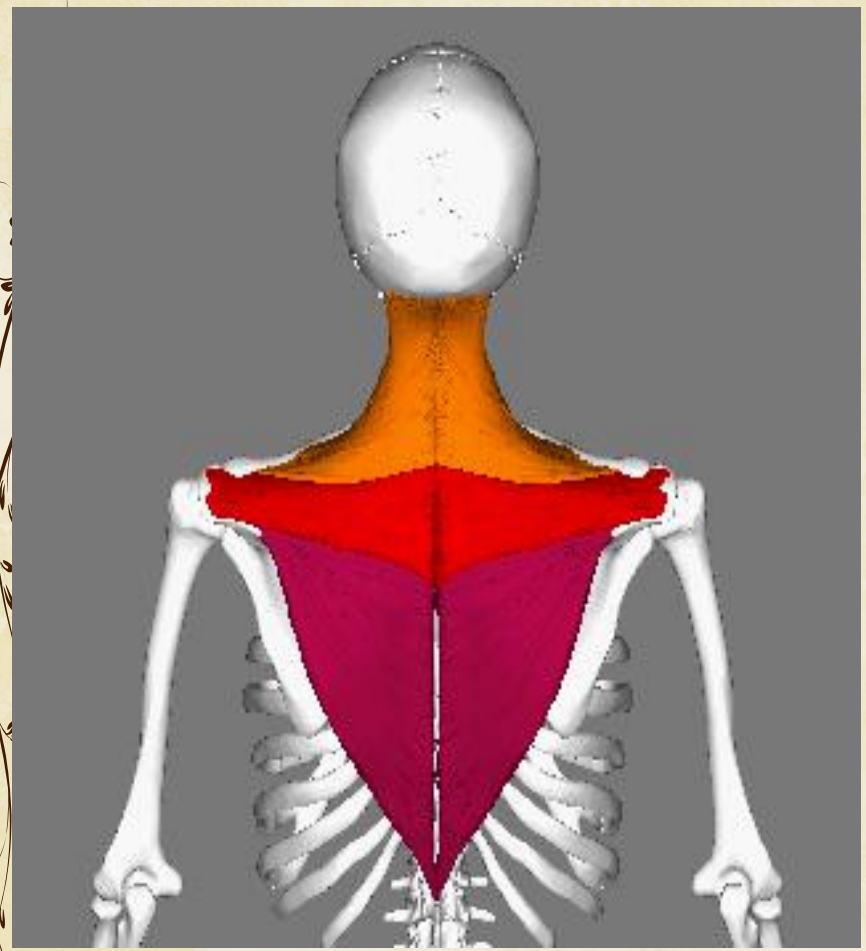
kibler type Ⅱ



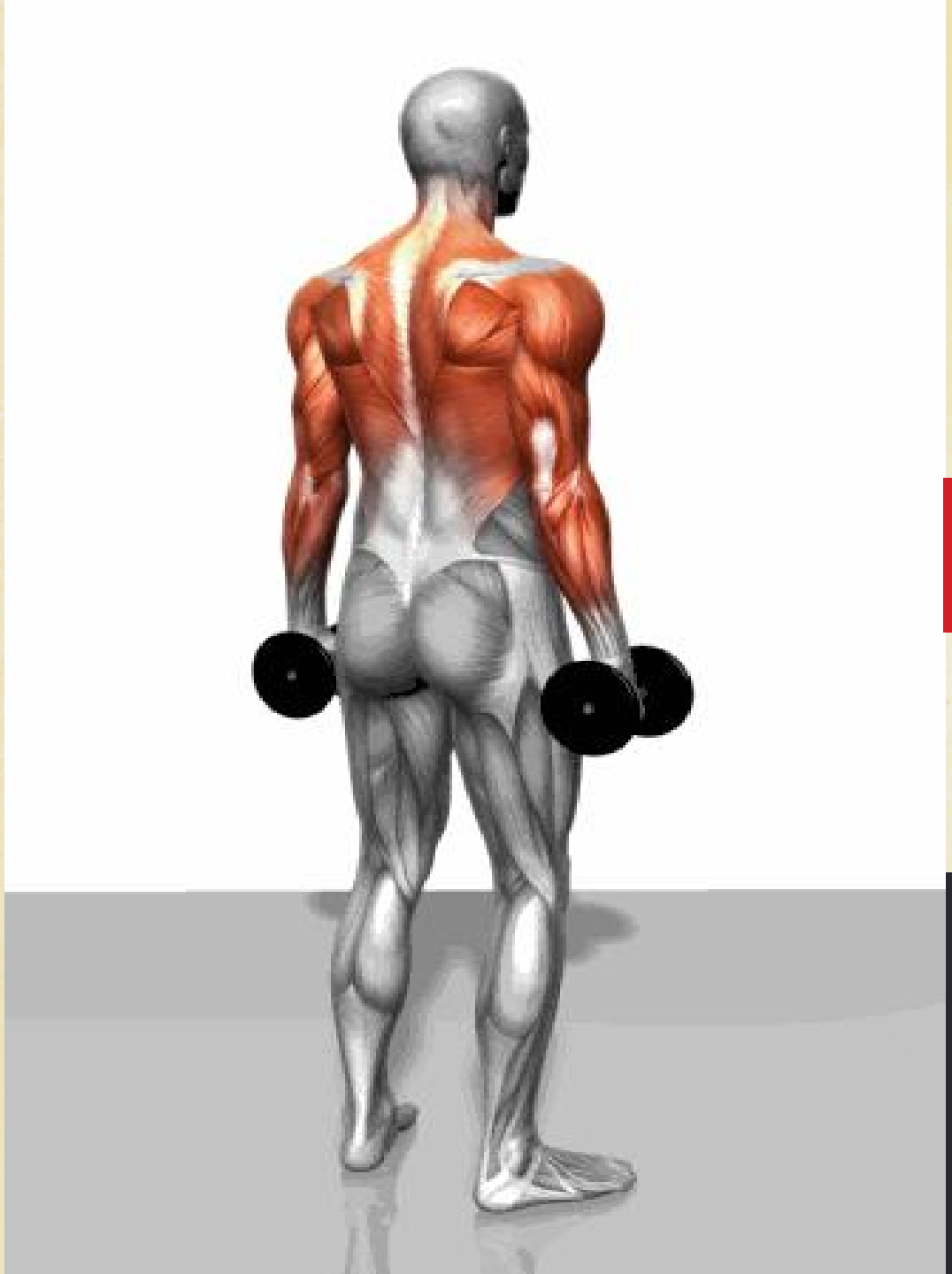
At rest,the entire medial border may be prominent dorsally.During arm motion,the medial scapular border tilts dorsally off the thorax. The axis of the rotation is vertical in the frontal plane.

Maintain the stability of the medial border of scapula, rely mainly on the middle trapezius , inferior trapezius and subscapularis muscles, the balance of power between the knitting machine

1. The middle and inferior trapezius



- The middle trapezius function for scapular adduction, and also inferior trapezius adductor scapula, and under the pressure of scapula.
- When these muscles strength weakened or lack of activation, Kibler II performance can occur. Therefore, we need to strengthen the strength training middle and inferior

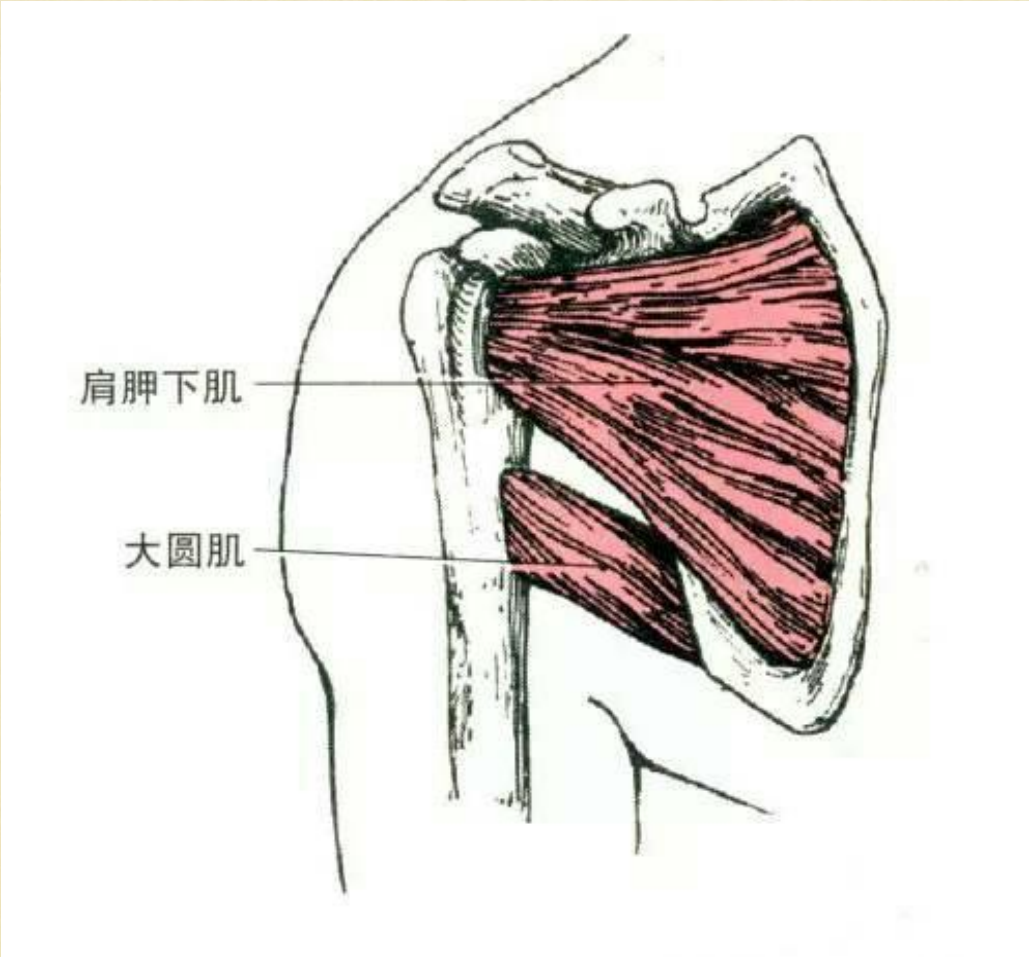


Dumbbell Shrugs

Attentions:

- control the dumbbell
- avoid the back arched
- shrug shoulders when inhaling
- drop the dumbbell and finish exhaling

2.The subscapularis and Teres major



- Function: the internal rotation of scapula.
-

When these muscles excessive activation or strength enhancement, with middle and lower trapezius strength is not balanced, will appear

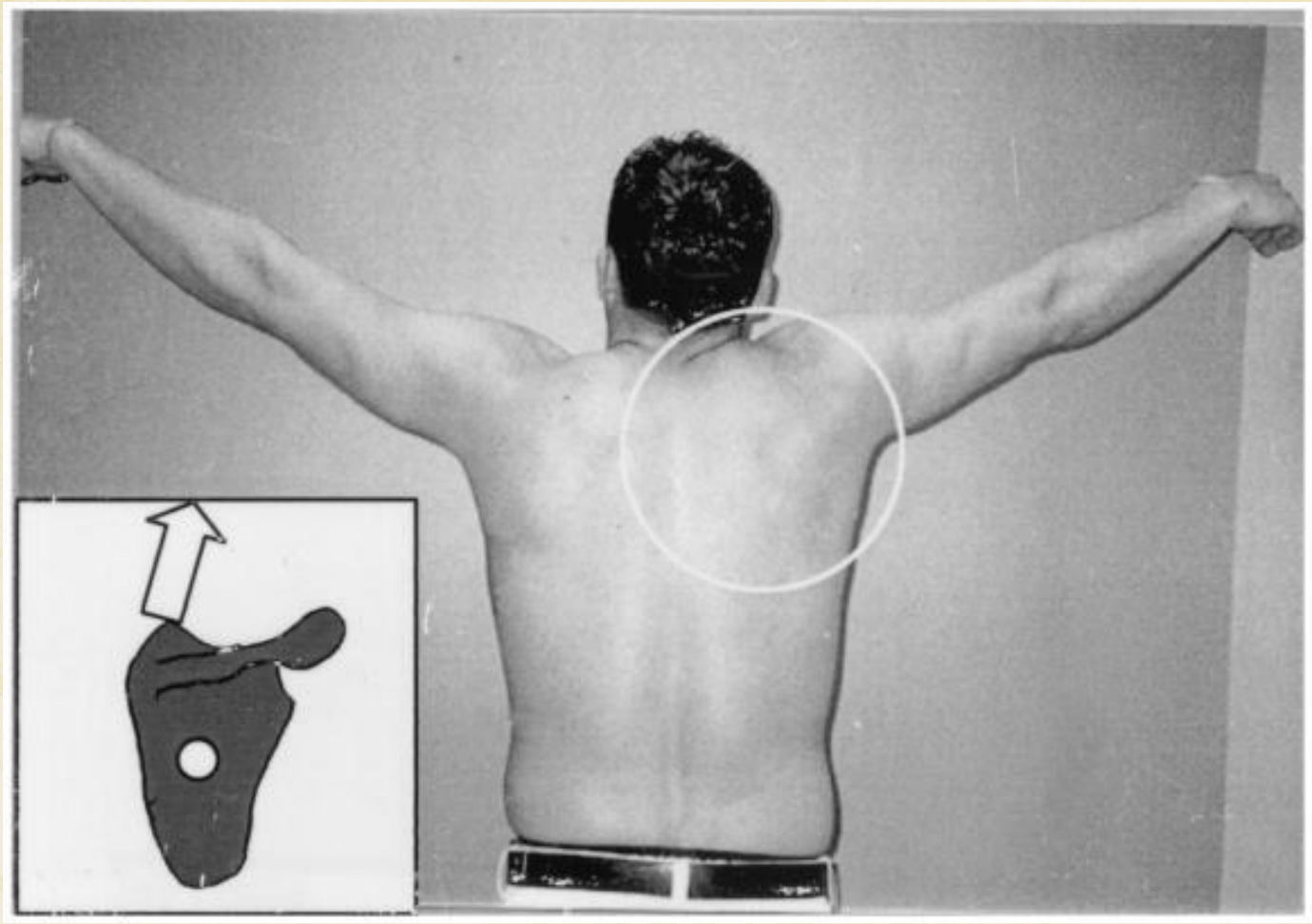
- Kibler type II.

Therefore, to strengthen the muscles and stretch training subscapularis to relax, can effectively alleviate the SD.

PNF

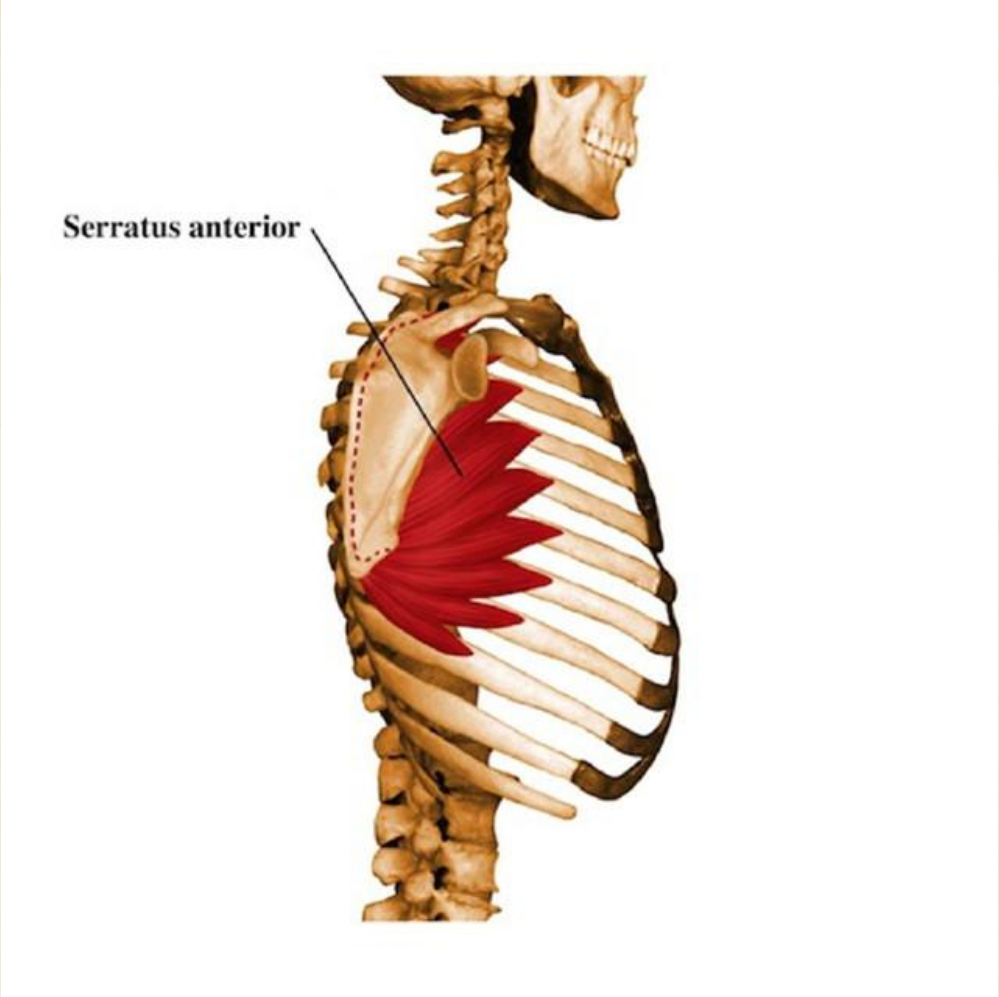
Superior border

At rest, the superior border of the scapula may be elevated and the scapula can also be anteriorly displaced. During arm motion, a shoulder shrug initiates movement without significant winging of the scapular occurring. The axis of this motion occurs in the sagittal plane.



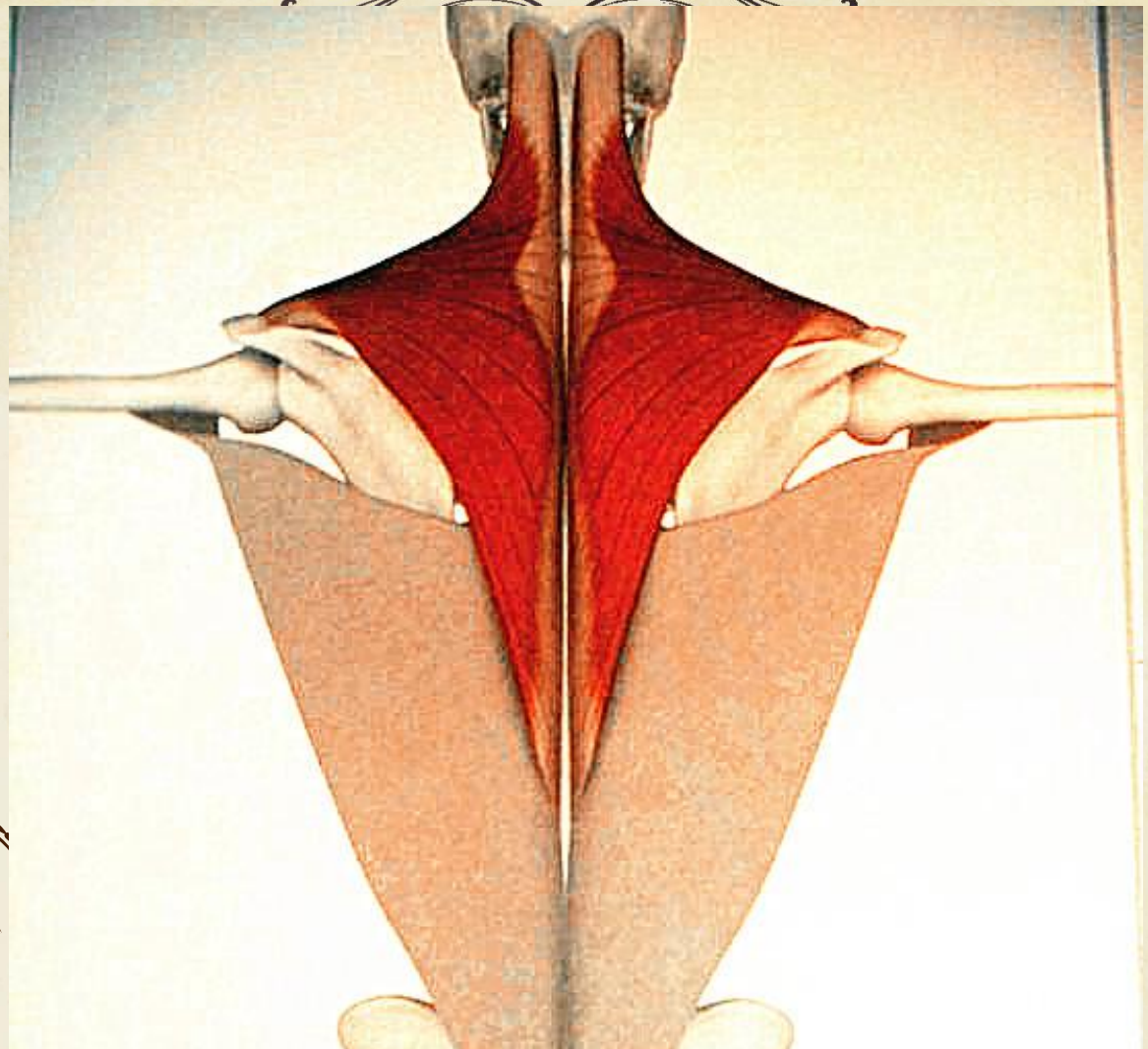
Photograph illustrating a type III dyskinetic scapular pattern with excessive elevation of the superior border of the scapula.

serratus anterior

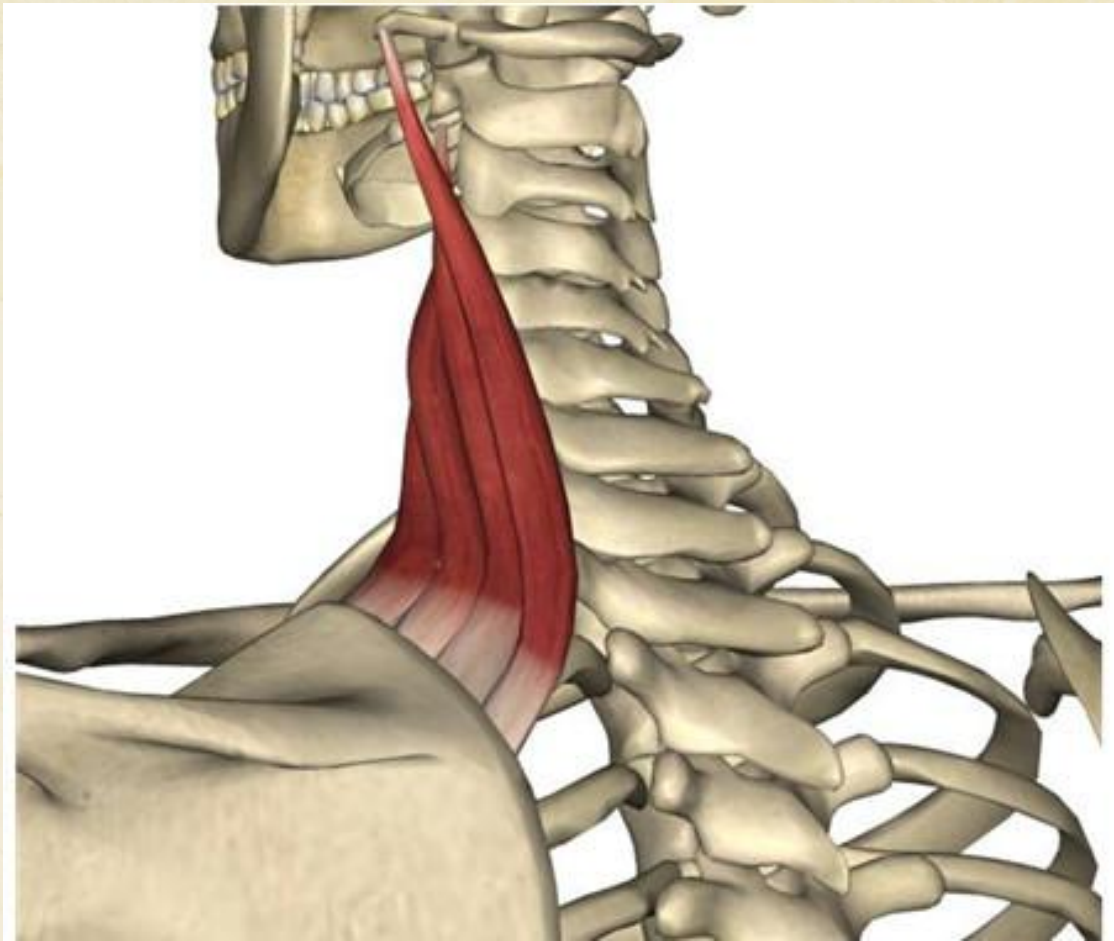


pectoralis minor

Upper trapezius



levator scapulae



the superior border of the scapula may be elevated

Upper trapezius and levator scapulae can work together to make the shoulder blade up,and the pectoralis minor and serratus make the shoulder blade down.

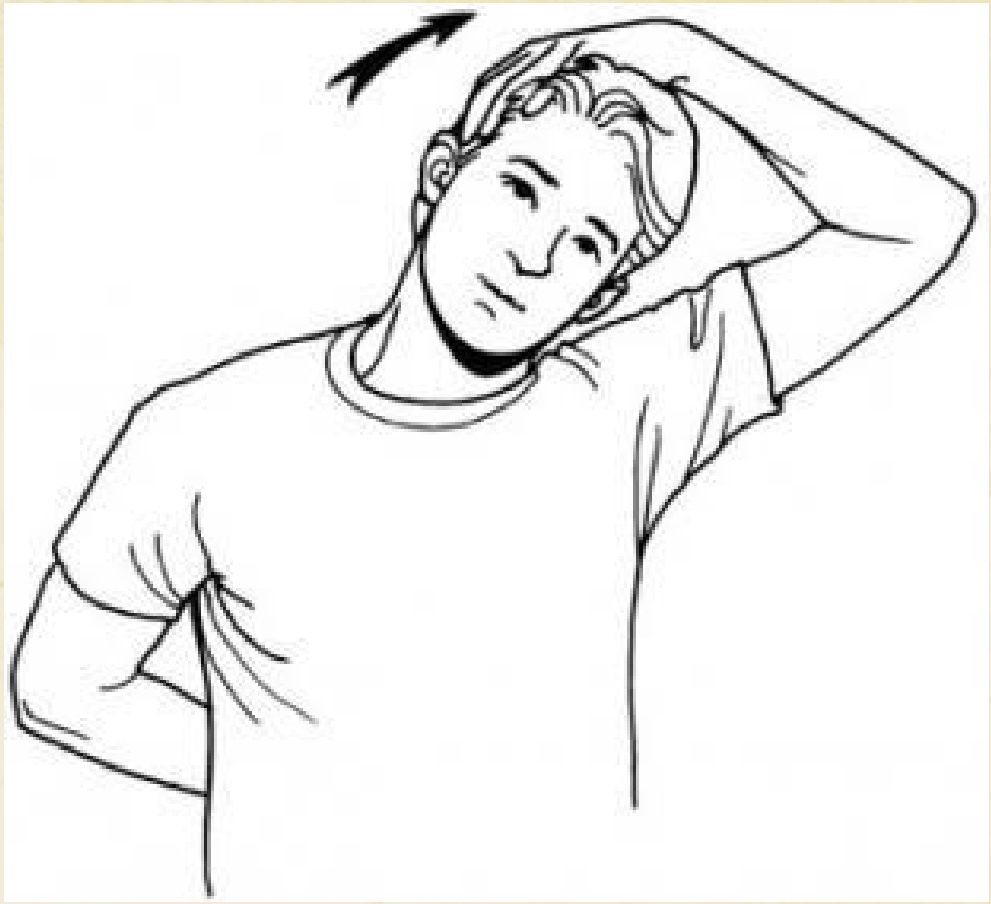
Training

Stretching of the upper trapezius and levator scapulae

Strengthening of the pectoralis minor and serratus anterior

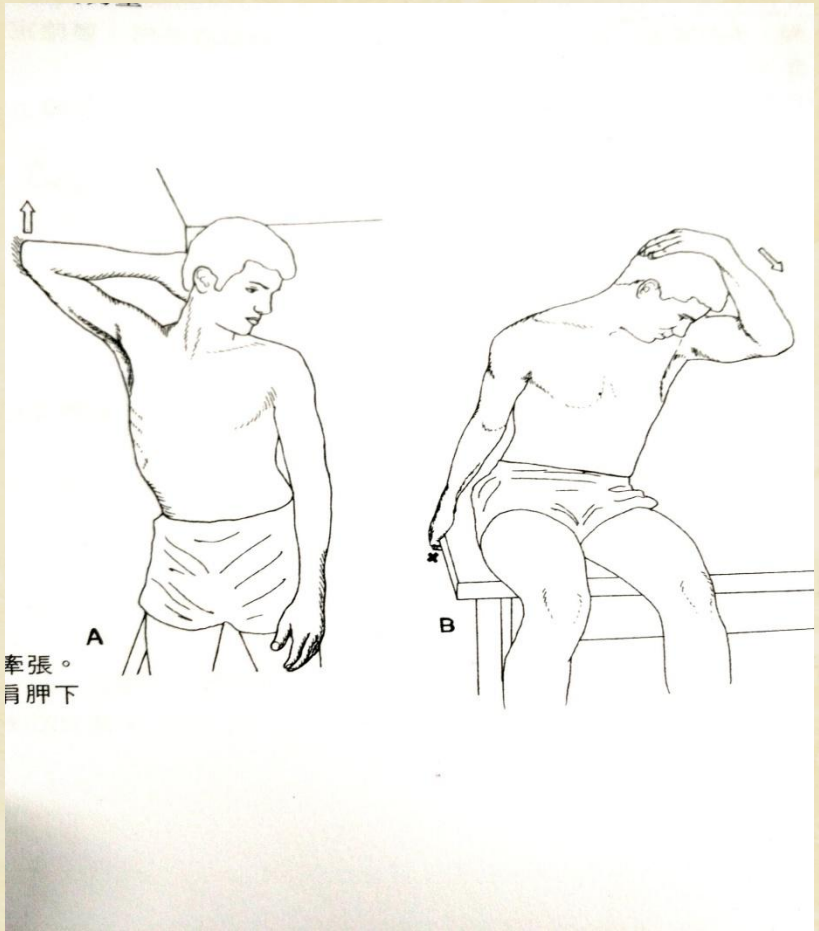
Stretching

Upper trapezius



Stretching

levator scapulae



the scapula can be anteriorly displaced

The pectoralis minor muscle can pull the scapula blade forward movement, and serratus anterior can pull the scapula and close to the thoracic.

Training

Stretching of the pectoralis minor and serratus anterior

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Thanks