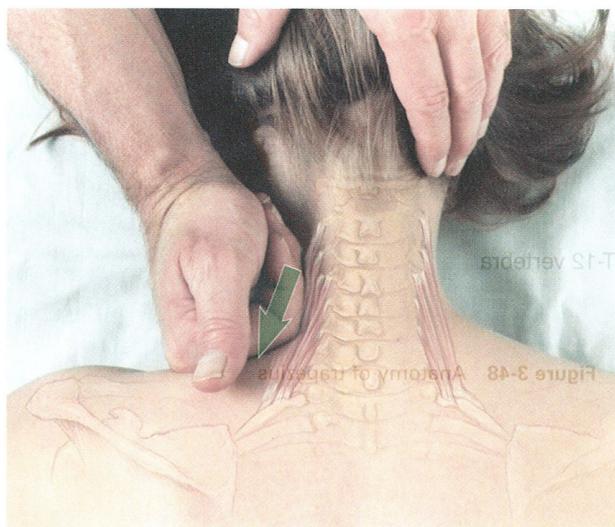


**Figure 3-45** Stripping of scalenes with client prone: thumb is on the scalenes. Inset shows thumb under the edge of trapezius.

find a tender point by pressing deeply a little inferior to the skull, for example, is the tender point located in trapezius, splenius capitis, or semispinalis capitis? Often you can only make an educated guess, usually based on the referral area.

Fortunately, for the purposes of this book, it is not necessary to isolate the location of a trigger point in a particular muscle of the posterior neck

with absolute precision. Because all of these muscles are frequently in a state of strain due of reading, desk work, or poor posture, and because they are all commonly responsible for headaches, they should be treated together. It is important, however, to become familiar with their individual attachments and actions, since more advanced approaches require precise isolation.



**Figure 3-46** Stripping of the scalenes with the knuckles



**Figure 3-47** Stripping of scalenes with client seated

## Trapezius

*tra-PEEZ-ee-us*

**Etymology** Greek, *trapezium*, a table, from *tetra*, four + *pous*, foot

### Overview

**Trapezius** (Fig. 3-48) covers a vast territory and performs a wide variety of functions. Although it is an important posterior neck muscle, it is also a shoulder and back muscle. Problems in trapezius may cause a great deal of pain and discomfort. It is the muscle most commonly addressed in informal backrubs between friends, because it is so ac-

cessible and because manual therapy of trapezius gives tremendous relief. For most people, it is the chief repository of day-to-day tension.

Trapezius lies superficial to all other muscles of the posterior neck, shoulders, and upper back; therefore, examination and treatment of the other muscles of this region inherently involve examination and treatment of trapezius. It is important to be aware of its attachments, actions, and referral patterns because of the major role it plays in upper body pain and dysfunction.

In general, examination and treatment of the cervical portion of trapezius is accomplished through examination and treatment of the other muscles of the posterior neck. The same is true for the portions of middle trapezius over and around the scapula.

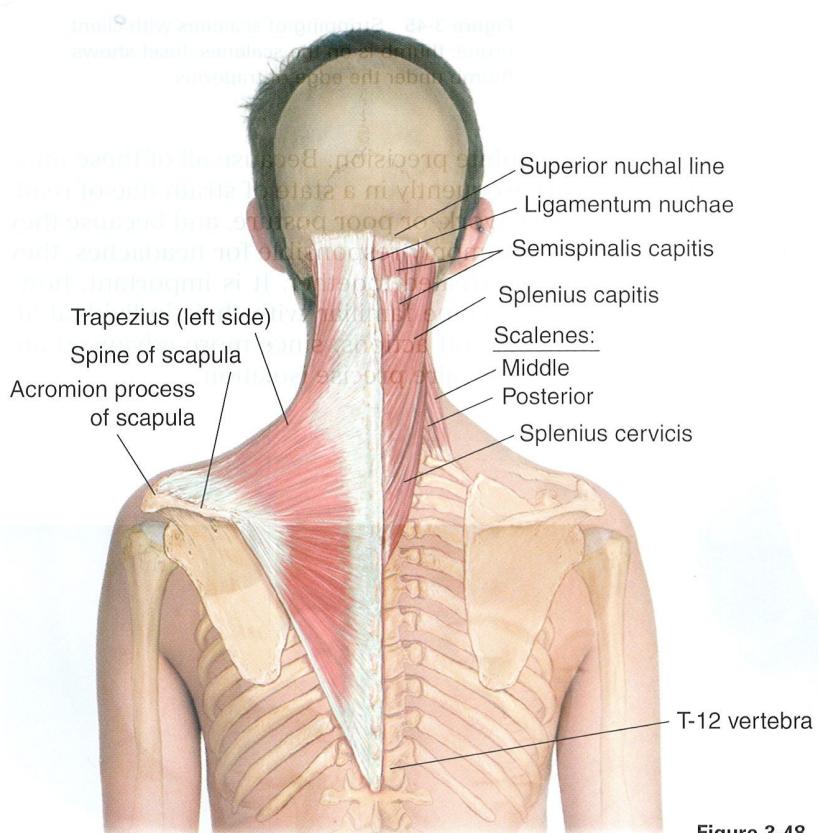


Figure 3-48 Anatomy of trapezius



### Attachments

Upper trapezius:

- Superiorly and medially, to the superior nuchal line, the ligamentum nuchae, and the spinous processes of C1 through C5
- Inferiorly and laterally, to the outer third of the clavicle

Middle trapezius:

- Medially, to the spinous processes and ligaments of C6 through T3
- Laterally, to the acromion and upper aspect of the spine of the scapula

Lower trapezius:

- Medially, to the spinous processes and ligaments of T4 through T12
- Laterally, to the medial end of the spine of the scapula, next to the lower attachment of levator scapulae

### Actions

- Elevates the scapula (with levator scapulae)
- Rotates the scapula upward (moves the glenoid fossa upward)

- Retracts the scapula (pulling toward the spinal column)
- Depresses the scapula
- Extends the head and neck (bilateral action)
- Turns the head and neck (unilateral action)

### Referral Area



- Trigger points in the part of upper trapezius overlying the shoulder refer pain up the neck to the mastoid process and over the ear to the temporal region; also to the angle of the mandible.
- Trigger points in middle and lower trapezius refer pain into the posterior neck at the base of the skull, across the posterior shoulders, and between the shoulder blades.
- Trigger points in middle trapezius, particularly toward the lateral end near the acromion, refer pain to the outer surface of the arm proximal to the elbow.

### Other Muscles to Examine

All muscles of the posterior and lateral neck, the upper back, and around the scapula.



### Manual Therapy

#### STRIPPING

- The client lies prone.
- Stand at the client's head and place one hand flat on the client's shoulder at the base of the neck, the fingers pointing inferiorly.
- Using your body weight and pressing firmly into the tissue, slide the hand inferiorly between the vertebral column and the scapula all the way to the end of the thoracic spine, transmitting your weight primarily to the client through the heel of your hand (Fig. 3-49).

- Place the same or opposite hand—whichever is most comfortable for you—at the same starting point.
- Using the same weight and motion, and shifting the position of your feet so that your weight is behind the movement of your hand, slide your hand diagonally along the back just inside the medial edge of the scapula, past the inferior angle of the scapula.
- Place the heel of your opposite hand just lateral to the lower cervical vertebrae.
- Pressing firmly, slide your hand over the upper aspect of the scapula continuing to the acromion (Fig. 3-50).
- Repeat this procedure on the other side.



Figure 3-49 Deep stripping of trapezius



**Figure 3-50** Deep stripping of superolateral trapezius



**Figure 3-51** Pincer compression of trapezius

#### PETRISSAGE

- Stand at the side of the prone client at the elbow, facing the client's head.
- Place both hands on the client's near shoulder on the upper trapezius.
- Squeeze and pull the tissue, first with one hand, then with the other, beginning gently and allowing your grasp to become firmer as the tissue relaxes.
- To finish, grasp the muscle with one hand and shake it several times.
- Move to the other side of the client and repeat the procedure.

#### PINCER COMPRESSION

- Stand at the side of the prone client at the elbow, facing the client's head.
- Place the hand that is closest to the client's head on the client's upper trapezius.
- Grasp it firmly between your fingers and thumb, and hold it. Begin with a gentle grasp, assessing the tissue, and allow your grasp to become firmer as the tissue releases (Fig. 3-51).
- Alternate holding the tissue with a back and forth movement of your thumb and fingers.

## Semispinalis Capitis and Cervicis, Longissimus Capitis

**SEM-ee-spin-AL-iss CAP-it-iss,  
SERV-iss-iss, long-GISSL-im-us**

**Etymology** Latin *semi*, half + *spinalis*, of the spine + *capitis*, of the head  
*semi*, half + *spinalis*, of the spine + *cervicis*, of the neck  
*longissimus*, longest + *capitis*, of the head

### Overview

Semispinalis capitis and cervicis and longissimus capitis (Fig. 3-52) are involved in support of the head when carried or tilted forward. As a result, they are commonly overused and in a state

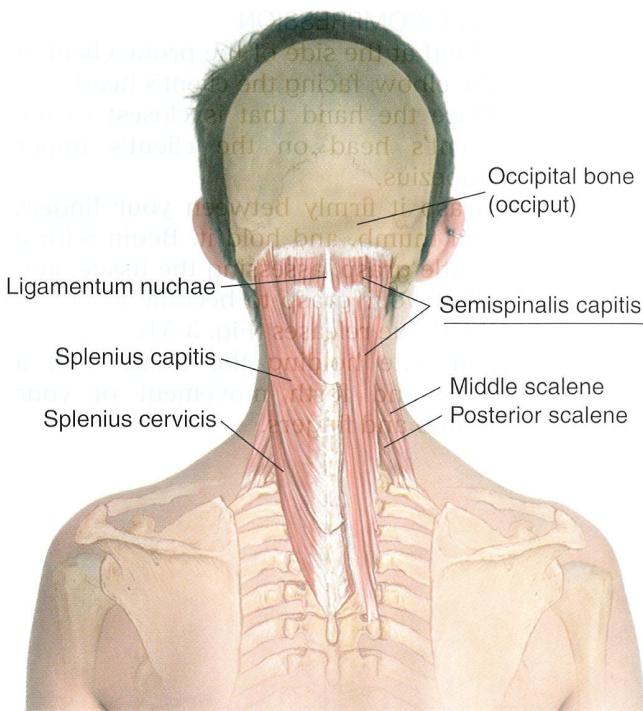


Figure 3-52 Anatomy of posterior neck muscles

of strain and are among the chief culprits in headache pain.

### Attachments

- Inferiorly, to the transverse processes of T1 through T6 (semispinalis capitis also to C3 through C6)
- Superiorly, semispinalis cervicis to the spinous processes of C2 through C5; semispinalis capitis to the base of the occiput; longissimus capitis just lateral to semispinalis capitis.

### Actions

Semispinalis capitis and longissimus capitis:

- Extends head, flexes the neck laterally to the same side (side bending)
- Supports the head when tilted forward

Semispinalis cervicis:

- Extends the neck
- Flexes the neck laterally
- Rotates the head to opposite side.

### Referral Area

- Semispinalis and longissimus capitis: a band across the side of the head, especially in the anterior part of the temporal region
- Semispinalis cervicis: back of the head (the classic tension headache)

### Other Muscles to Examine

- All other posterior, lateral, and anterior neck and head muscles
- Levator scapulae

## Splenius Capitis, Splenius Cervicis

**SPLEN-ee-us CAP-it-iss, SER-viss-is**

**Etymology** Latin *splenius*, bandage (from Greek, *splenion*, bandage) + *capitis*, of the head  
*splenius*, bandage (from Greek, *splenion*, bandage) + *cervicis*, of the neck

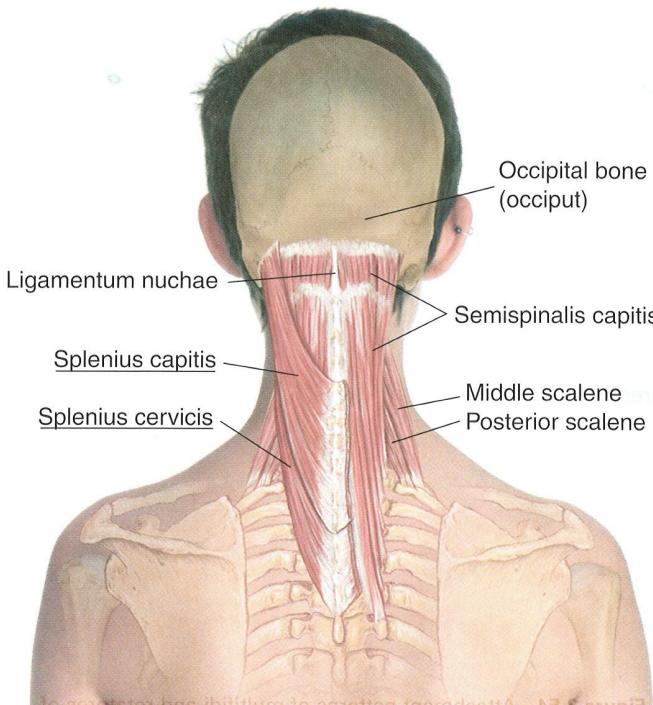


Figure 3-53 Anatomy of splenius capitis and splenius cervicis

## Overview

Splenius capitis and splenius cervicis (Fig. 3-53) are head-turners and neck extenders, and are involved in much headache pain.



### Attachments

Inferiorly, to the spinous processes of C3 through T6  
 Superiorly:

- Splenius cervicis attaches to the back of the transverse processes of the first two or three cervical vertebrae.
- Splenius capitis attaches to the mastoid process and a small part of the occipital bone next to it.



### Actions

These muscles extend the neck and turn the head to the same side.



### Referral Area

Splenius capitis: to the top of the head  
 Splenius cervicis:

- To the eye
- Over the temporal region and the ear to the occipital region
- To the angle of the neck



### Other Muscles to Examine

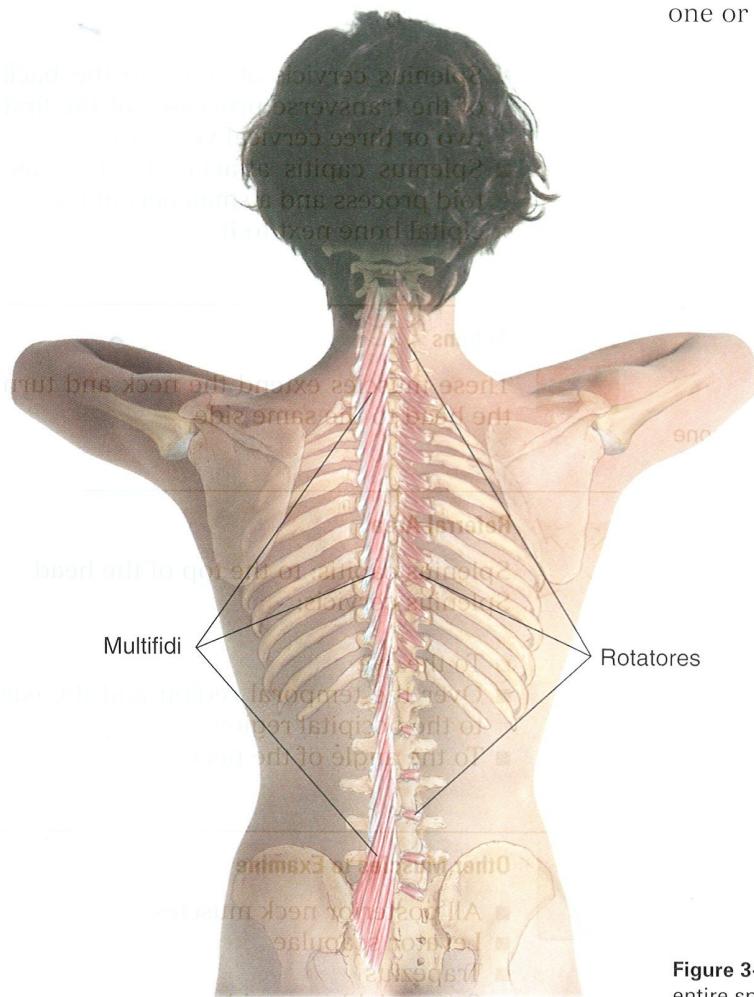
- All posterior neck muscles
- Levator scapulae
- Trapezius
- Sternocleidomastoid

## Multifidi and Rotatores

*mul-TIFF-id-ee, ro-ta-TORE-ace*

**Etymology** Latin, *multus*, much + *findus*, divided  
Latin, *rotatores*, rotators

View full figure in a new window



## Overview

**Multifidi and rotatores** (Fig. 3-54) are small, deep intervertebral muscles that occur over the entire length of the spine. They function less as movers than as restrainers; they keep the individual vertebrae from bending or rotating too far out of position when the spine is bent by larger muscles.

The rotatores in the cervical region are poorly defined and not present in everyone. Multifidi cross two to four vertebral joints, rotatores only one or two (Fig. 3-55).

**Figure 3-54** Attachment patterns of multifidi and rotatores of entire spine

**Attachments**

- Superiorly, C2 through C5
- Inferiorly, C4 through C7

**Actions**

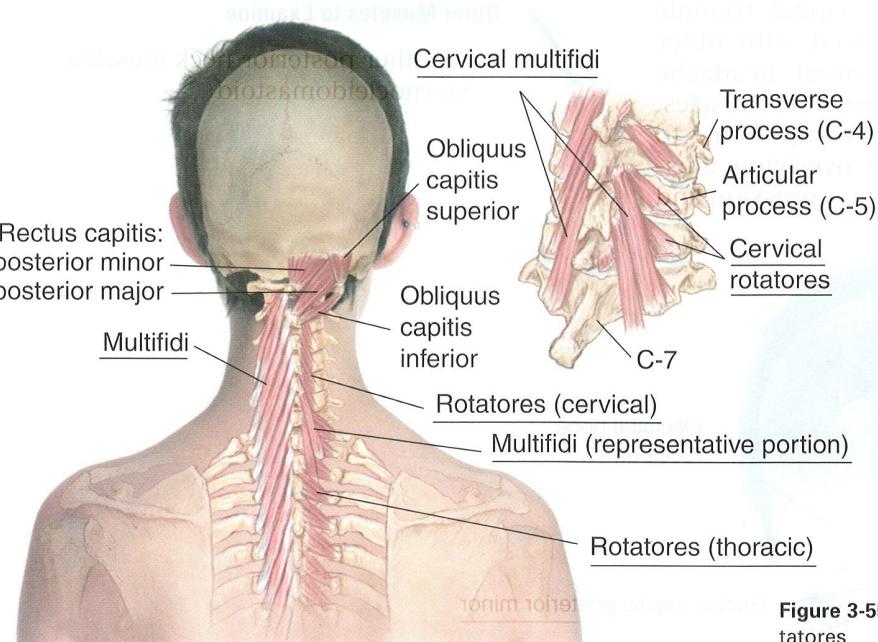
Although technically considered extensors, lateral flexors, and rotators of the spine, these functions are actually carried out primarily by larger muscles. These small muscles seem to be chiefly involved in small positional adjustments of individual vertebrae.

**Referral Area**

- To an area just inferior to the base of the skull and another just medial to the root of the spine of the scapula
- To a band between those areas extending slightly over the shoulder

**Other Muscles to Examine**

- Other posterior neck muscles
- Levator scapulae
- Serratus posterior superior



**Figure 3-55** Anatomy of cervical multifidi and rotatores

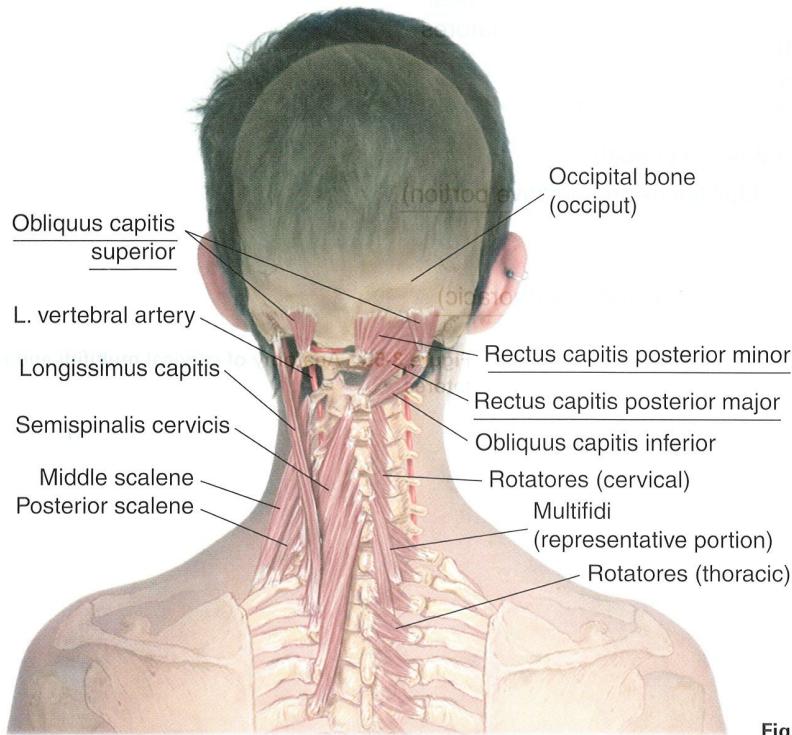
## Suboccipital Muscles

Obliquus capitis superior, obliquus capitis inferior, rectus capitis posterior major, rectus capitis posterior minor

**Etymology** Latin *sub*, under + *occiput*, back of head  
 Latin *obliquus*, oblique + *capitis*, of the head + *superior*, higher  
 Latin *obliquus*, oblique + *capitis*, of the head + *inferior*, lower  
 Latin *rectus*, straight + *capitis*, of the head + *posterior*, toward the back + *major*, larger  
 Latin *rectus*, straight + *capitis*, of the head + *posterior*, toward the back + *minor*, smaller

### Overview

The triangle formed by the suboccipital muscles (Fig. 3-56) (except rectus capitis posterior minor) is called the **suboccipital triangle**; it surrounds the vertebral artery. The suboccipital triangle muscles, which are often involved with other posterior neck muscles in general headache pain, are treated along with these other muscles. Their trigger points are virtually impossible to differentiate from those of the overlying muscles. They are best treated with compression and stretching.



### Attachments

Obliquus capitis inferior connects the first two cervical vertebrae; the remaining muscles connect the first two cervical vertebrae with the occipital bone.

### Actions

- Extends and rotates the head
- Tilts the head to the same side

### Referral Area

- Over the back of the head
- In a band over the side of the head to the eye

### Other Muscles to Examine

- All other posterior neck muscles
- Sternocleidomastoid

Figure 3-56 Anatomy of suboccipital muscles



**Figure 3-57** Stripping of posterior neck muscles with thumb



### Manual Therapy for All Posterior Neck Muscles

#### STRIPPING AND COMPRESSION

- The client lies supine.
- Seated beside the client's head and using the hand nearest the client's head to support it from underneath, place the other hand under the client's neck with the fingers on the far side and the thumb on the near side.
- Press the thumb into the posterior muscles of the neck at the base of the skull just lateral to the spinous processes of the upper cervical vertebrae.
- Pressing firmly into the tissue, glide the thumb toward the torso, pausing at tight or tender spots and waiting for them to release (Fig. 3-57). Take the thumb as far as it will comfortably go along the base of the neck.
- Slide the thumb back along the same path to the base of the skull, again stopping at tender or tight spots to release them (Fig. 3-58).

**Figure 3-58** Bi-directional stripping of posterior neck muscles with thumb

- Shift the thumb laterally toward yourself and repeat the process until you have covered the posterior neck as far as the posterior aspect of the scalenes.

- At the base of the skull, press the thumb upward and deep into the suboccipital muscles.
- Hold for release (Fig. 3-59).

#### MOVING COMPRESSION WITH FINGERTIPS

- The client lies supine.
- Seated centrally at the client's head, push both hands flat under the client's shoulders on both sides until your fingertips rest on either side of the thoracic spine.
- Curl your fingers so that their tips press into the muscles on either side of the spine.
- Slowly draw your hands toward yourself, gliding your curled fingertips along the muscles on either side of the spine until your fingers reach the base of the skull (Fig. 3-60).



**Figure 3-59** Compression of suboccipital muscles

#### CROSS-FIBER STROKING

- The client lies supine.
- Standing at the client's head and facing the client, place one hand under the client's neck at the base of the occiput and curl the fingertips into the lateral aspect of the posterior neck muscles (Fig. 3-61).
- Pressing firmly up into the tissue, continue to curl the fingers, drawing the tips toward yourself until they reach the spine.
- Move the hand downward toward the base of the neck and repeat.
- Repeat on the other side.

#### CROSS-FIBER STROKING WITH THE THUMB

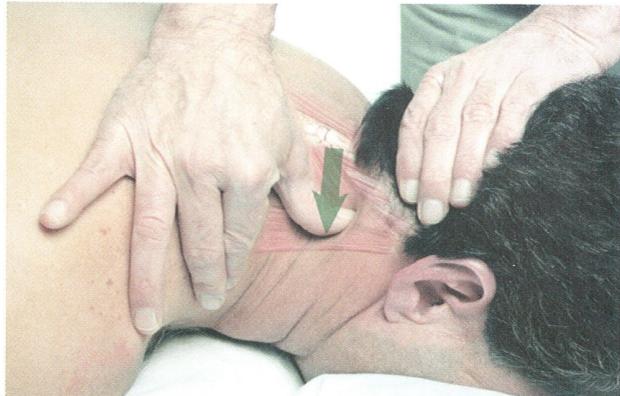
- The client lies prone.



**Figure 3-60** Stripping of posterior neck muscles with fingertips



**Figure 3-61** Cross-fiber stroking of posterior neck muscles with fingertips



**Figure 3-62** Cross-fiber stroking on posterior neck muscles with the thumb

- Standing at the client's head and facing the neck, hold the head steady with the far hand.
- Place your fingertips on the far side of the client's neck and the tip of your thumb on the cervical spine at the base of the skull.
- Pressing firmly into the tissue, slide your thumb across the neck muscles toward your fingers (Fig. 3-62). (Note: At the base of the skull, direct your pressure partially against the occipital bone.)

- Shift your hand down the neck an inch or two and repeat the process; repeat until you reach the base of the neck.
- Move to the opposite side of the client and repeat the procedure on the other side.

## REFERENCE

1. Simons DG, Travell JG, Simons LS: *Travell & Simons' Myofascial Pain and Dysfunction: The Trigger Point Manual*, Vol.1, Ed. 2. Baltimore: Lippincott Williams & Wilkins, 1999, pages 261-263, 354, 436, 809-812.