

CHAPTER

# 3

# The Head, Face, and Neck

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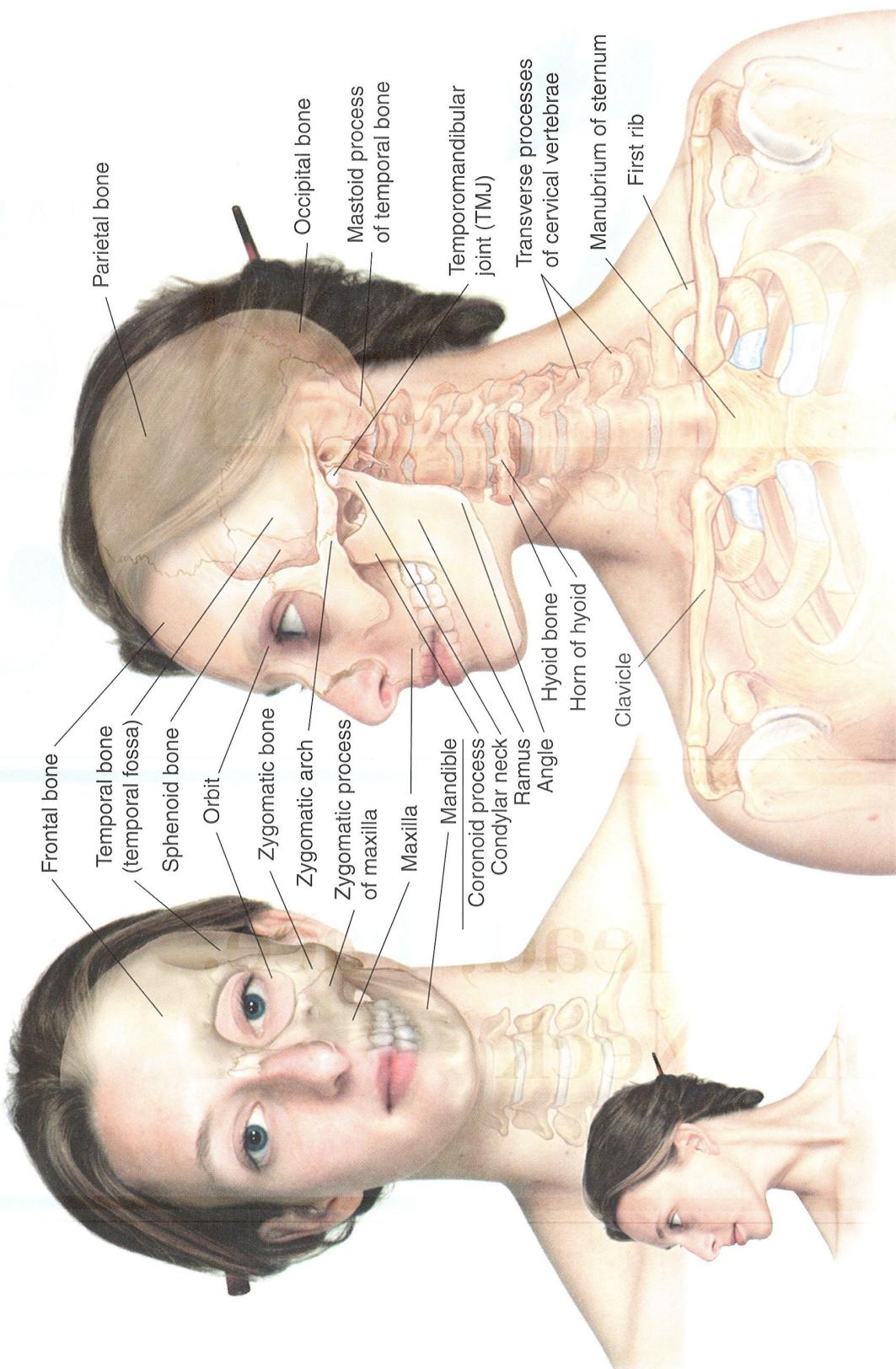


Plate 3-1 Skeletal features of the anterior and lateral head and neck

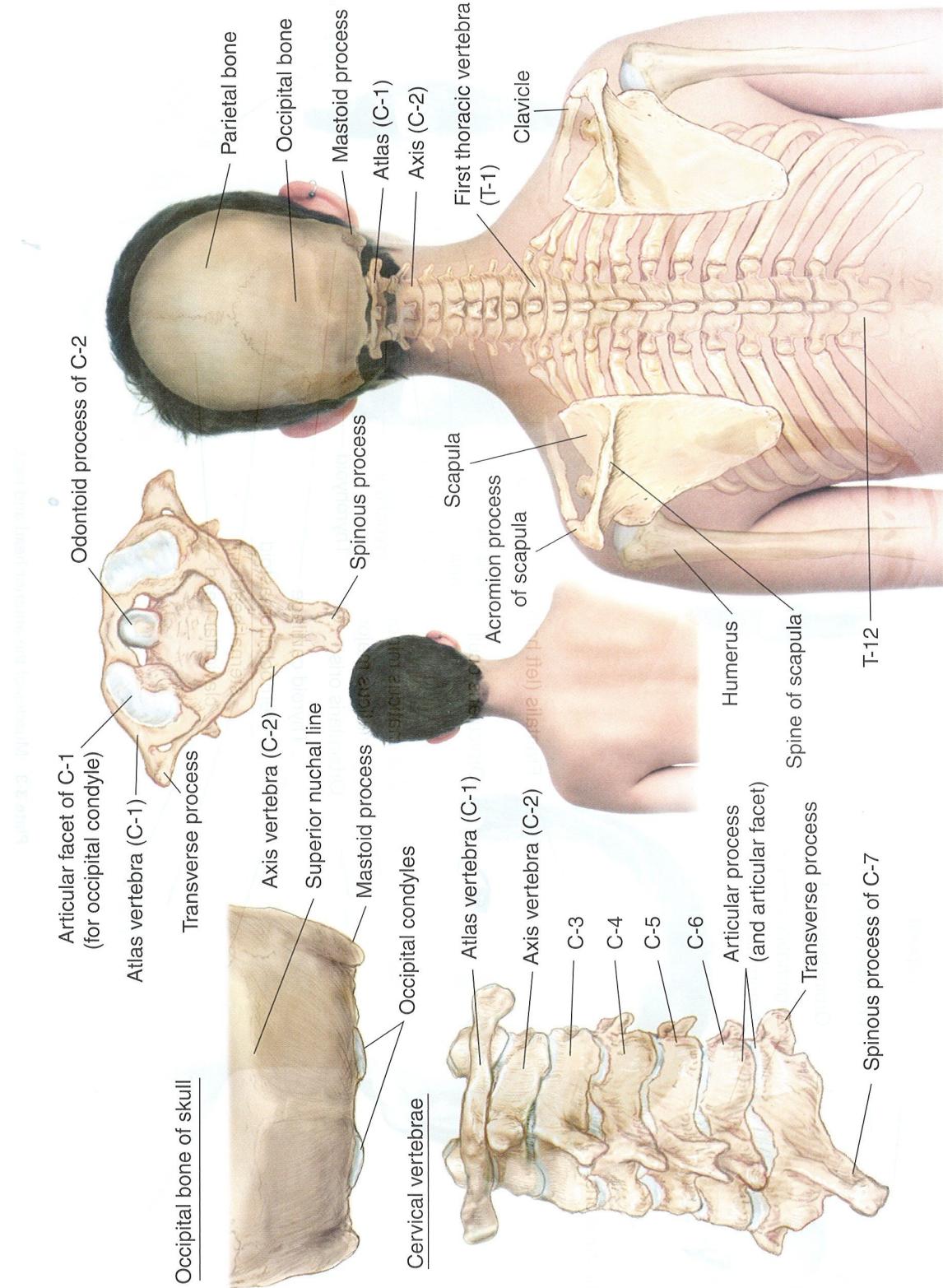


Plate 3-2 Skeletal features of the posterior head and neck

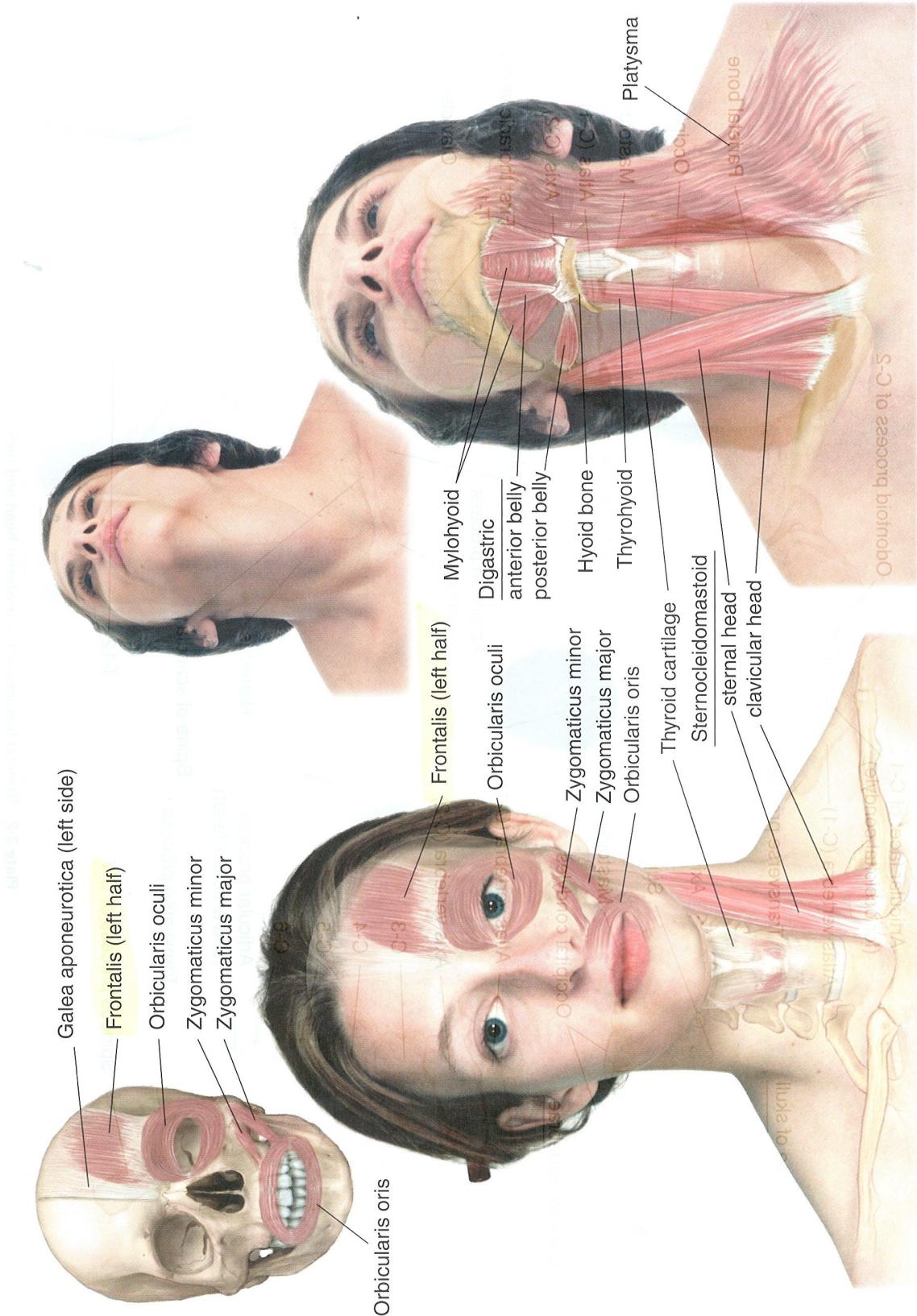


Plate 3-3 Muscles of the anterior head and neck

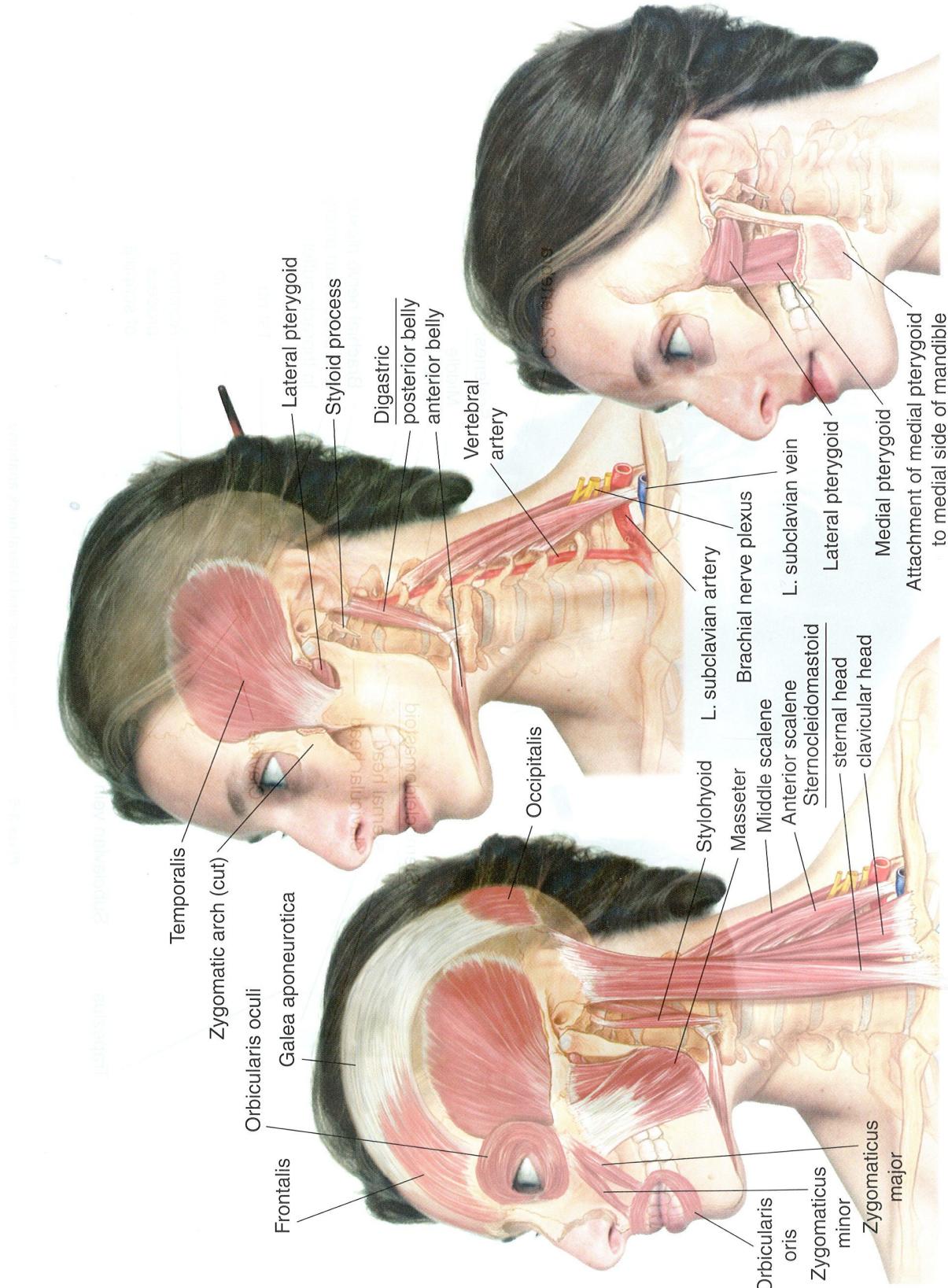


Plate 3-4 Muscles of the lateral head and neck

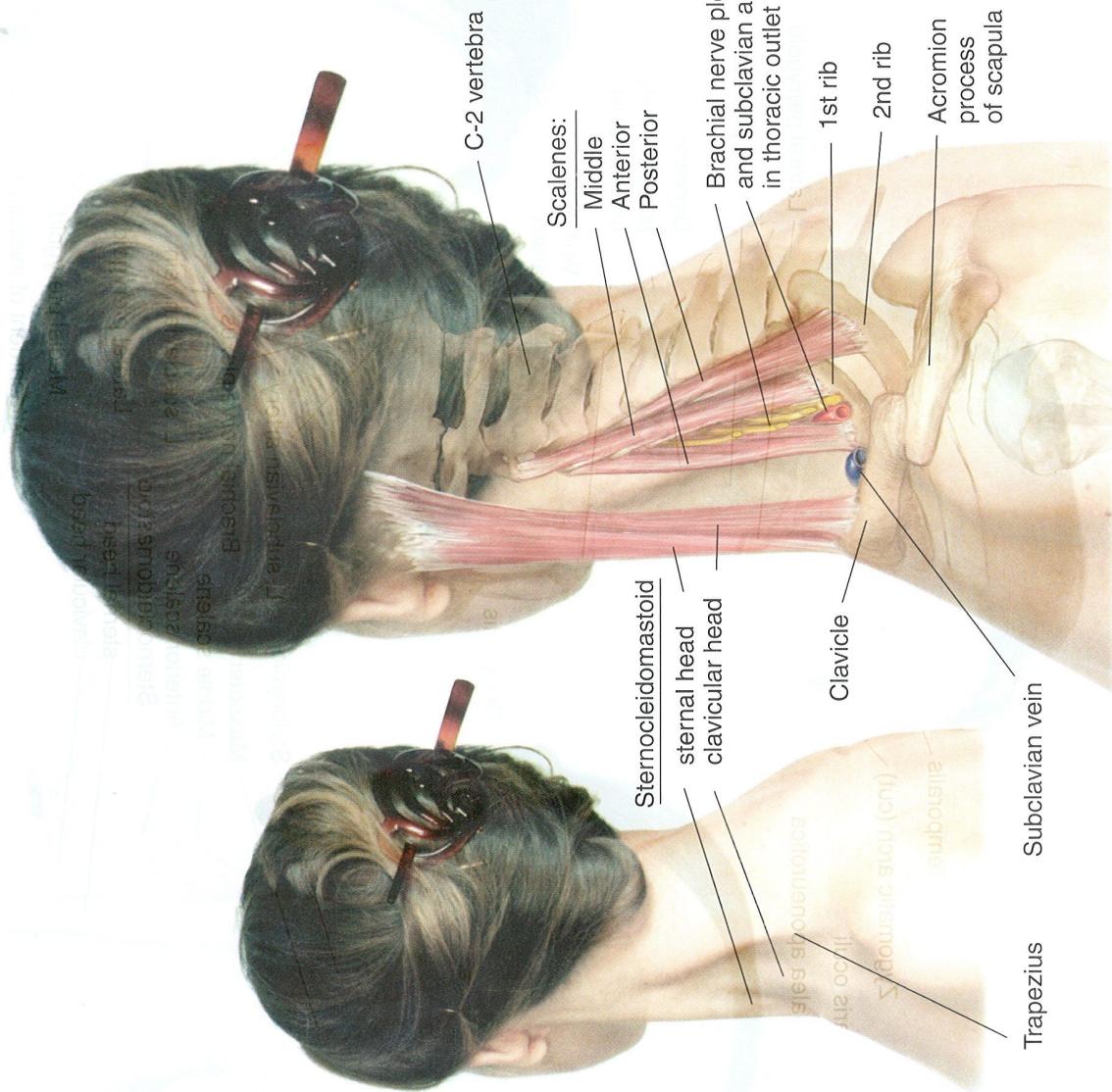


Plate 3-5 The scalene muscles and lateral neck anatomy

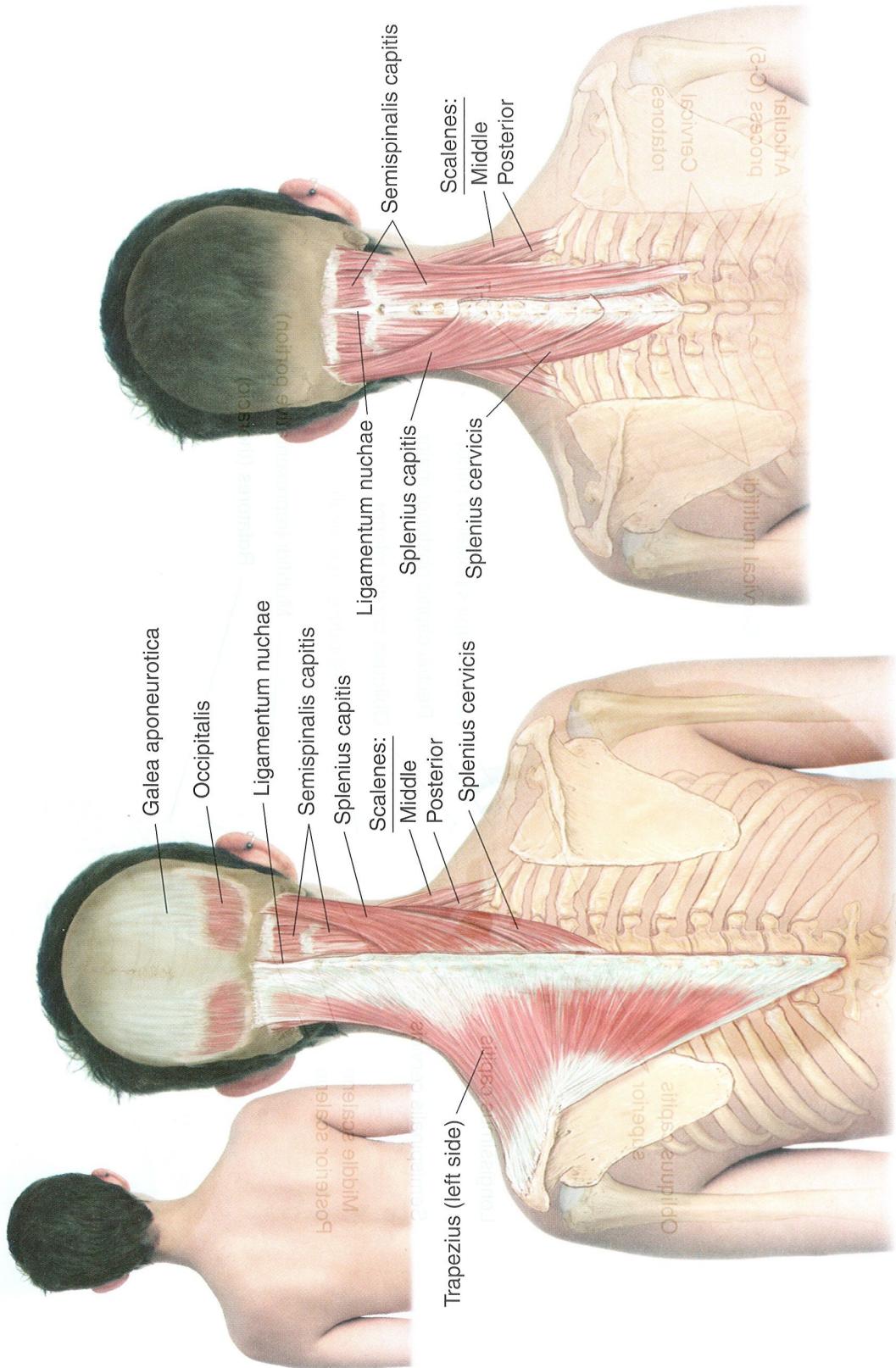


Plate 3-6 Superficial muscles of the posterior head and neck

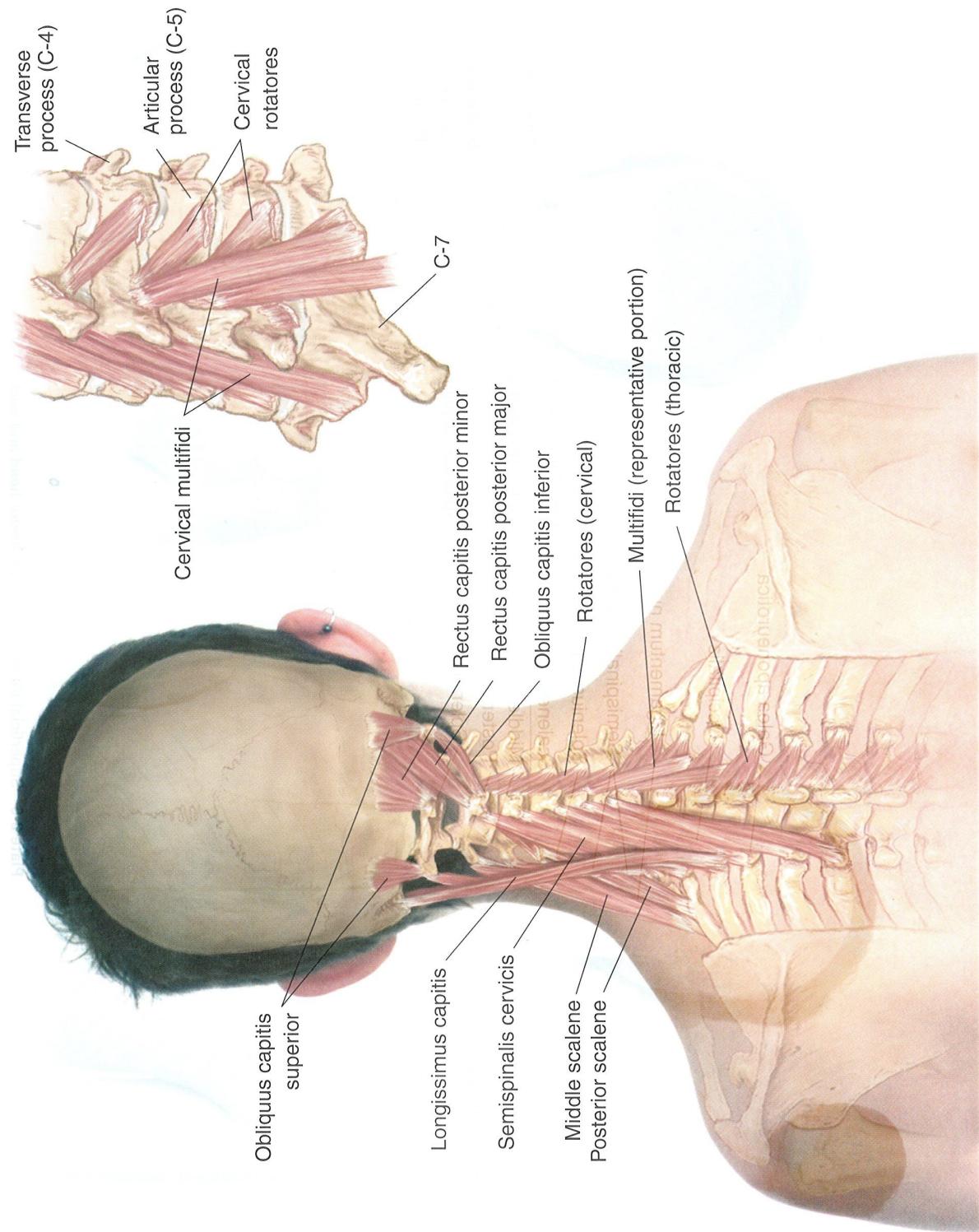


Plate 3-7 Deep muscles of the neck

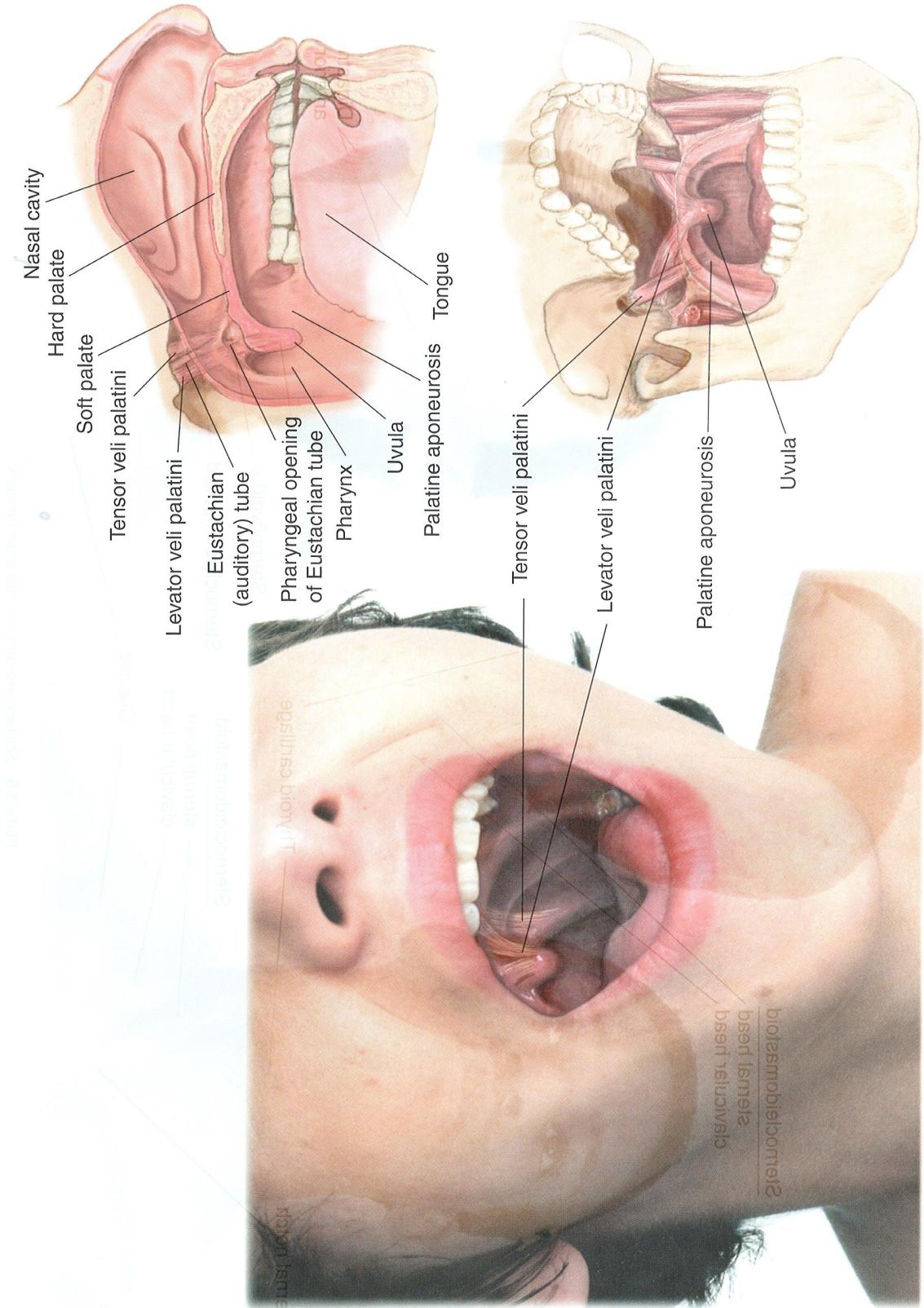


Plate 3-8 Intra-oral anatomy

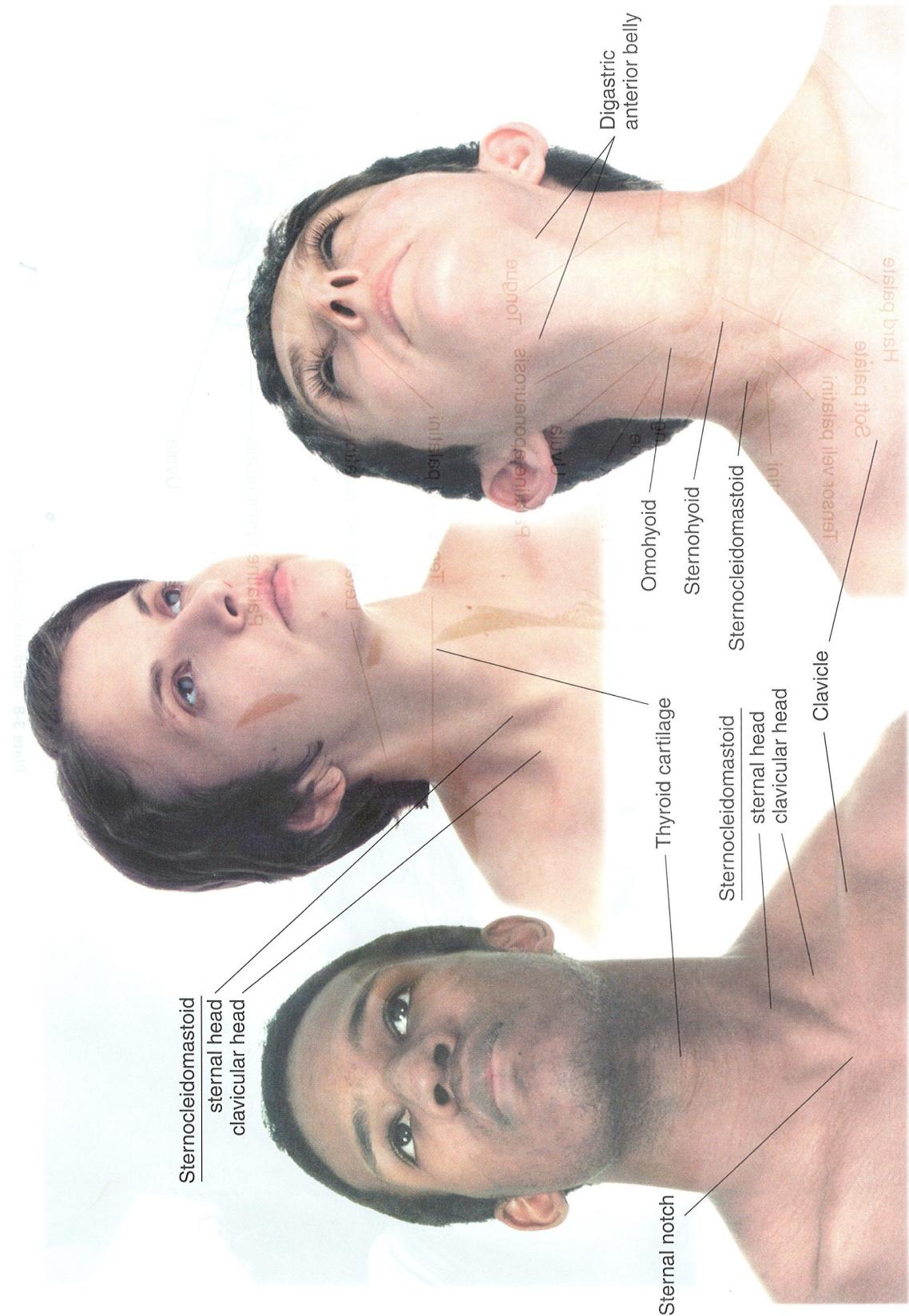


Plate 3-9 Surface anatomy of the anterior neck

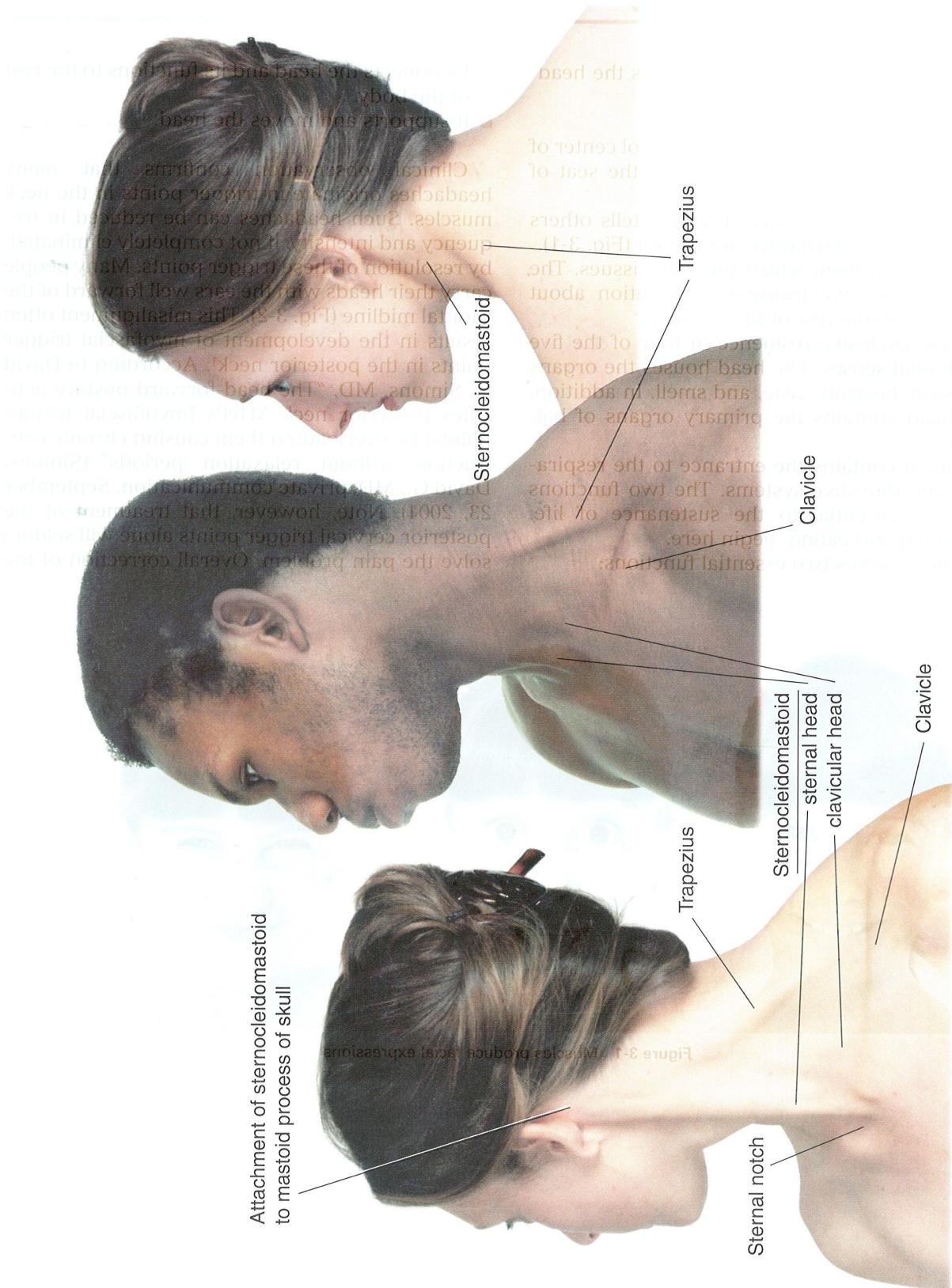


Plate 3-10 Surface anatomy of the lateral and posterior neck

## OVERVIEW OF THE REGION

The head is the capital of the body. It's the head-quarters. It's worth noting that:

- The head houses the brain, the control center of the body and, according to some, the seat of consciousness.
- It's the home of the face. The face tells others who we are and what we are feeling (Fig. 3-1).
- It's the point from which the voice issues. The voice is how we transmit information about ourselves to the rest of the world.
- It is the exclusive residence of four of the five traditional senses. The head houses the organs of vision, hearing, taste, and smell. In addition, the head contains the primary organs of balance.
- Finally, it contains the entrance to the respiratory and digestive systems. The two functions that are essential to the sustenance of life, breathing and eating, begin here.

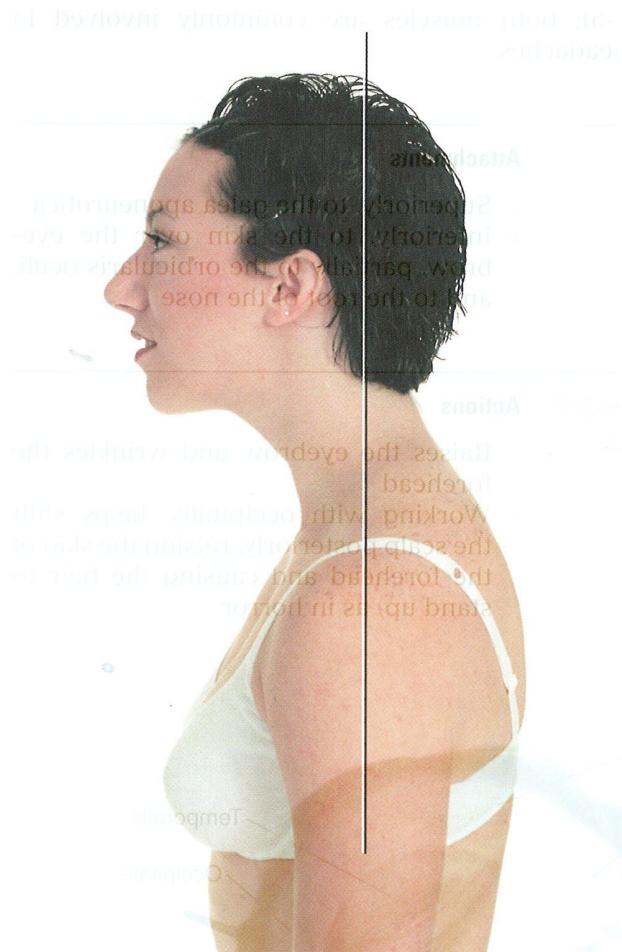
The neck serves two essential functions:

- It connects the head and its functions to the rest of the body.
- It supports and moves the head.

Clinical observation confirms that many headaches originate in trigger points in the neck muscles. Such headaches can be reduced in frequency and intensity, if not completely eliminated, by resolution of these trigger points. Many people carry their heads with the ears well forward of the sagittal midline (Fig. 3-2). This misalignment often results in the development of myofascial trigger points in the posterior neck<sup>1</sup>. According to David G. Simons, MD, "The head-forward posture activates posterior neck MTrPs [myofascial trigger points] by overloading them causing chronic contraction without relaxation periods" (Simons, David G., MD, private communication, September 23, 2001). Note, however, that treatment of the posterior cervical trigger points alone will seldom solve the pain problem. Overall correction of the



Figure 3-1 Muscles produce facial expressions



**Figure 3-2** Posture with ear forward of sagittal midline

causes of postural misalignment is required to achieve long-term relief (see Chapter 4, Pectoralis Major).

The skull consists of 22 cranial bones, only one of which, the **mandible**, is generally considered movable. The cranial bones are joined by sutures and are regarded by most anatomists as being fused. Craniosacral therapists believe that the cranial bones are capable of small but significant movement, and their treatment approach attempts to influence the movement and positioning

of these bones. The arguments for and against craniosacral theory are beyond the scope of this book.

The skull itself rests on the first cervical vertebra or **atlas**; the **occipital condyles** of the skull rest on two kidney-shaped facets on the superior surface of the atlas. The atlas is a bony ring with essentially no body or spine. In turn, the atlas rests on the second cervical vertebra, or **axis**, which has a toothlike projection, the **odontoid process**, projecting up into the ring of the atlas (see Plate 3-2). Turning the head consists of rotation around the odontoid process.

The head is quite heavy. For this reason, and because of the importance of the mobility of the head for using the senses (particularly vision), the neck muscles are numerous, and many are thick and strong. They are all susceptible to pain and dysfunction.

The muscles of the head, face, and neck can be classified as follows:

- Scalp muscles, primarily occipitalis and frontalis (or occipitofrontalis, if viewed as one muscle), and the more dorsal aspects of temporalis. These muscles move the scalp and forehead.
- Face muscles, involved primarily in controlling facial expressions.
- Jaw muscles, which open and close the jaw by moving the mandible.
- Neck muscles, which support and balance the head on the spinal column and move it in all directions.

NOTE: Some of the treatment techniques described in this chapter require work inside the mouth. Two principles should be observed:

- Working inside any body orifice may have emotional implications for the client. Always obtain permission first and discuss any hesitations the client may have.
- Examination gloves should always be worn when working inside any body orifice.

## Frontalis

### fron-TAL-is

**Etymology** Latin, pertaining to the front

## Overview

**Frontalis** (Fig. 3-3) is sometimes regarded as one belly of the muscle occipitofrontalis, since it is connected directly to the occipitalis by the galea aponeurotica, a tendinous sheet of connective tissue that lies over the skull from front to back. Tightness in either the frontalis or occipitalis muscles, or bellies, therefore produces an overall sense of tightness in the scalp. Note that frontalis connects partially to orbicularis oculi (see Plate 3-5); both muscles are commonly involved in headaches.

ed in a skin fold, and the

the forehead, and the

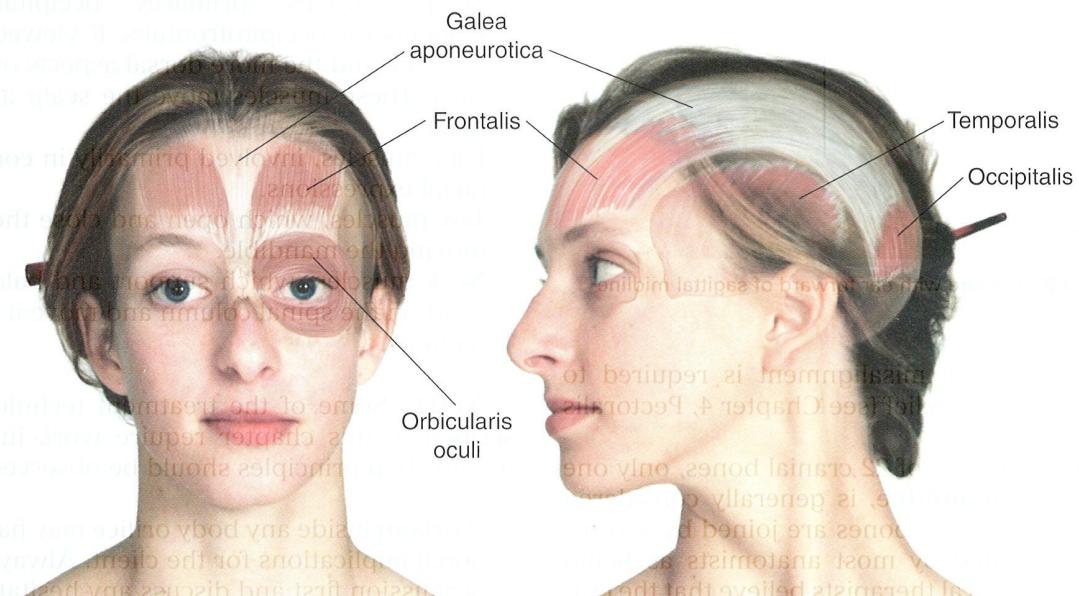


Figure 3-3 Anatomy of frontalis (occipitofrontalis), and galea aponeurotica

3-5); both muscles are commonly involved in headaches.

## Attachments

- Superiorly, to the galea aponeurotica
- Inferiorly, to the skin over the eyebrow, partially to the orbicularis oculi, and to the root of the nose

## Actions

- Raises the eyebrow and wrinkles the forehead
- Working with occipitalis, helps shift the scalp posteriorly, raising the skin of the forehead and causing the hair to stand up, as in horror



### Referral Area

Local, with pain radiating over the forehead

*Causes of forehead pain include tension headaches, sinusitis, and temporomandibular joint syndrome.*



### Other Muscles to Examine

- Occipitalis
- Orbicularis oculi
- Temporalis
- Sternocleidomastoid
- Zygomaticus major
- Scalenes
- Posterior neck muscles



### Manual Therapy

#### CROSS-FIBER STROKING

- The client lies supine.
- With the fingers spread over the sides of the client's head, place the thumbs at the center of the forehead just over the eyebrows.
- Pressing firmly into the tissue, slowly spread the thumbs apart (Fig. 3-4) until they have covered the forehead to the lateral ridges of the frontal bone.
- Shifting your hands superiorly, repeat this process as far as the hairline.

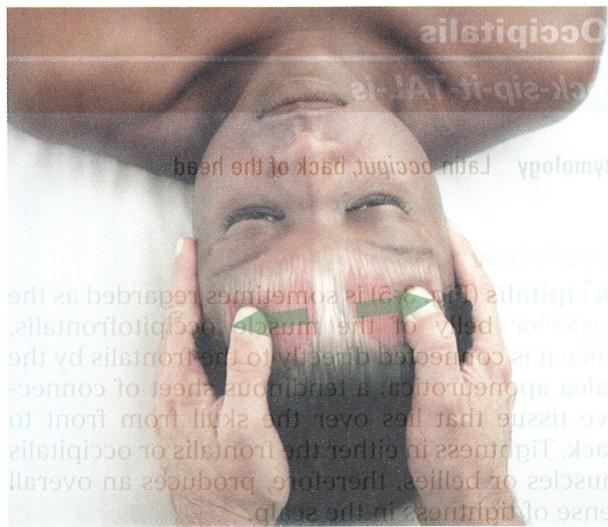


Figure 3-4 Cross-fiber stroking of frontalis

### STRIPPING

- The client lies supine.
- Place the tip or flat of the thumb on the forehead at the hairline just next to the center line of the forehead.
- Pressing firmly into the tissue, slide the thumb inferiorly to the medial end of the eyebrow.
- Shifting your hand laterally, repeat this process as far as the lateral end of the eyebrow.

## Occipitalis

**ock-sip-it-TAL-is**

**Etymology** Latin *occiput*, back of the head

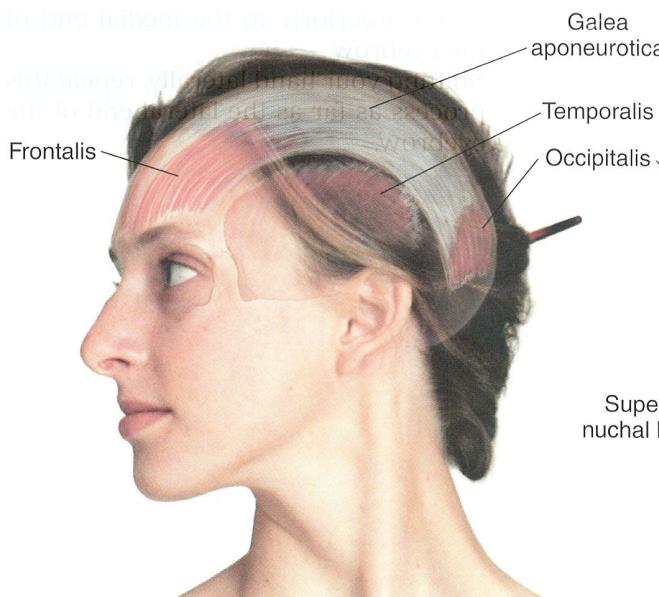
### Overview

**Occipitalis** (Fig. 3-5) is sometimes regarded as the posterior belly of the muscle occipitofrontalis, since it is connected directly to the frontalis by the galea aponeurotica, a tendinous sheet of connective tissue that lies over the skull from front to back. Tightness in either the frontalis or occipitalis muscles or bellies, therefore, produces an overall sense of tightness in the scalp.



### Attachments

- Superiorly, to the galea aponeurotica
- Inferiorly, to the superior nuchal line of the occipital bone



### Actions

- Anchors and retracts the galea aponeurotica, thus pulling the scalp posteriorly. See frontalis for further discussion (page 66).



### Referral Area

Radiates pain locally to the back and top of the head and can refer pain to the ipsilateral eye.



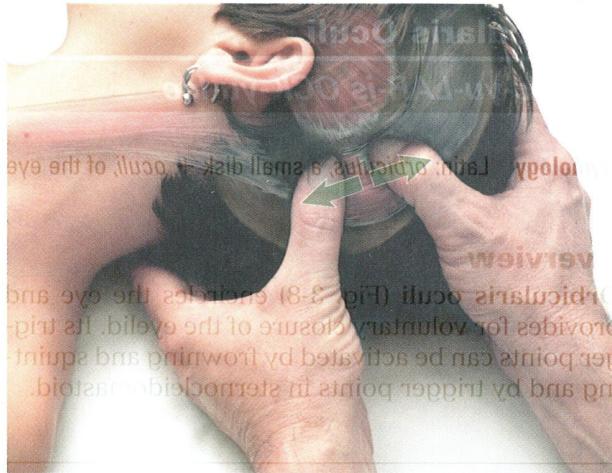
### Other Muscles to Examine

- Frontalis
- Temporalis
- Orbicularis oculi
- All lateral and posterior neck muscles

**Figure 3-5** Anatomy of occipitalis



**Figure 3-6** Stripping occipitalis with the fingertips



**Figure 3-7** Stripping of occipitalis with thumbs



## Manual Therapy

### STRIPPING (1)

- The client lies supine.
- Place the hands under the head, the fingers curled upward so that the fingertips touch the base of the skull.
- Pressing superiorly and using the weight of the client's head to generate pressure, draw the hands very slowly toward yourself, so that the fingertips treat the entire occipitalis belly (Fig. 3-6).
- Pause where the client reports tender points.

### STRIPPING (2)

- The client lies either supine or prone with the head turned away from the therapist.

- Holding the head with one hand, place the other thumb at the center line of the occiput, on a line with the upper part of occipitalis.
- Pressing firmly into the tissue, draw the thumb laterally across occipitalis.
- Placing the thumb in a position closer to the neck, repeat the procedure until you have covered the entire muscle belly.

### STRIPPING (3)

- The client lies either supine or prone with the head turned away from the therapist.
- Hold the client's head in both your hands, so that the thumbs rest on the upper part of occipitalis at its center.
- Pressing firmly into the tissue, spread the thumbs apart as far as the outer aspects of the muscle belly (Fig. 3-7).
- Shifting the thumbs to a position nearer the neck, repeat the procedure until the whole muscle belly has been treated.

## Orbicularis Oculi

**or-bic-yu-LAR-is OCK-yu-lee**

**Etymology** Latin: *orbiculus*, a small disk + *oculi*, of the eye

### Overview

**Orbicularis oculi** (Fig. 3-8) encircles the eye and provides for voluntary closure of the eyelid. Its trigger points can be activated by frowning and squinting and by trigger points in sternocleidomastoid.



#### Attachments

- Medially, to the medial palpebral ligament, frontal, and maxillary bones, and to the tissue of the eyelid
- Superiorly and medially, to the orbit

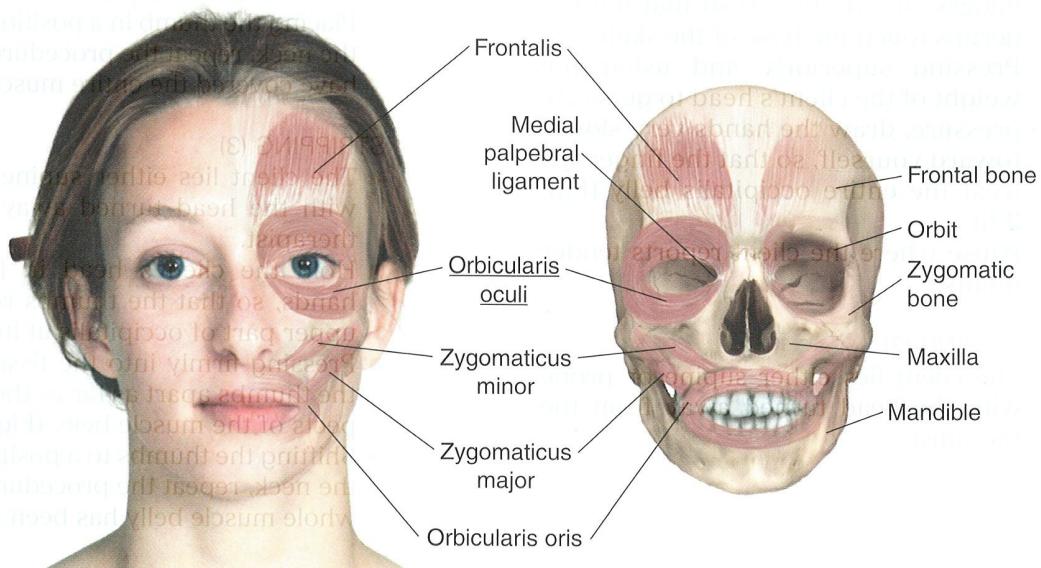


Figure 3-8 Anatomy of orbicularis oculi



#### Actions

- Intentional blinking and strong closure of the eyelid.
- Squinting



#### Referral Area

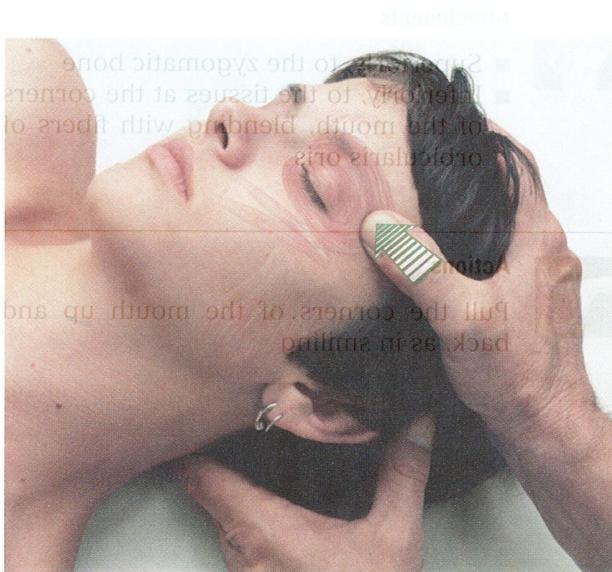
Superior to the eye and down the side of the nose



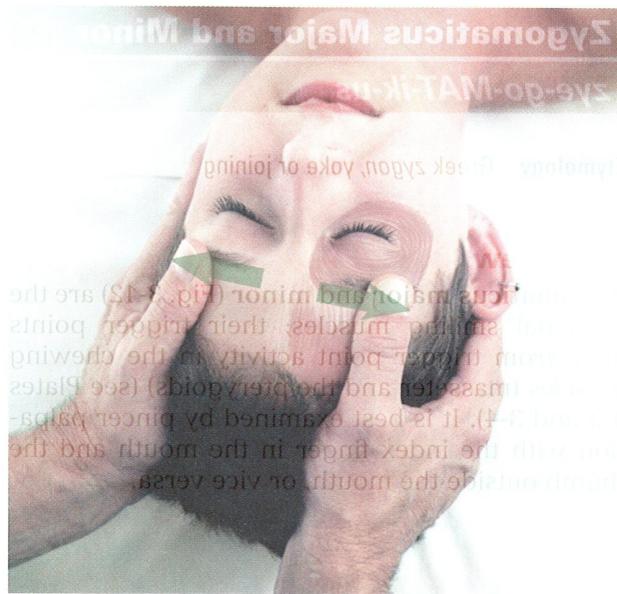
#### Manual Therapy

##### COMPRESSION

- Using the thumb, seek a common tender or trigger point near the lateral end of the eyebrow.
- Compress and hold for release (Fig. 3-9).



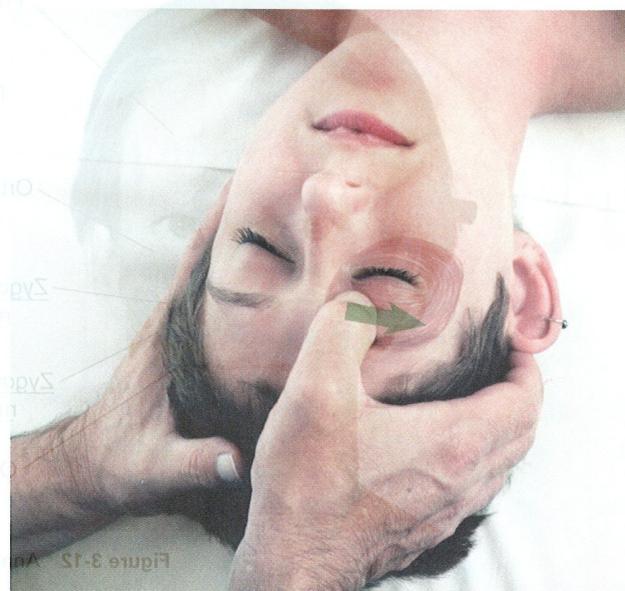
**Figure 3-9** Trigger point compression of orbicularis oculi



**Figure 3-10** Stripping orbicularis oculi superior to the orbit

#### STRIPPING

- Place the tip of a thumb or finger on the medial end of the eyebrow.
- Pressing firmly into the tissue, slide the thumb or finger outward to the lateral end of the eyebrow (Fig. 3-10).
- Repeat once just superior to the eyebrow, and again just inferior to it, pressing superiorly against the orbit (Fig. 3-11).



**Figure 3-11** Stripping orbicularis oculi pressing upward against the orbit

## Zygomaticus Major and Minor

**zye-go-MAT-ik-us**

**Etymology** Greek *zygon*, yoke or joining

### Overview

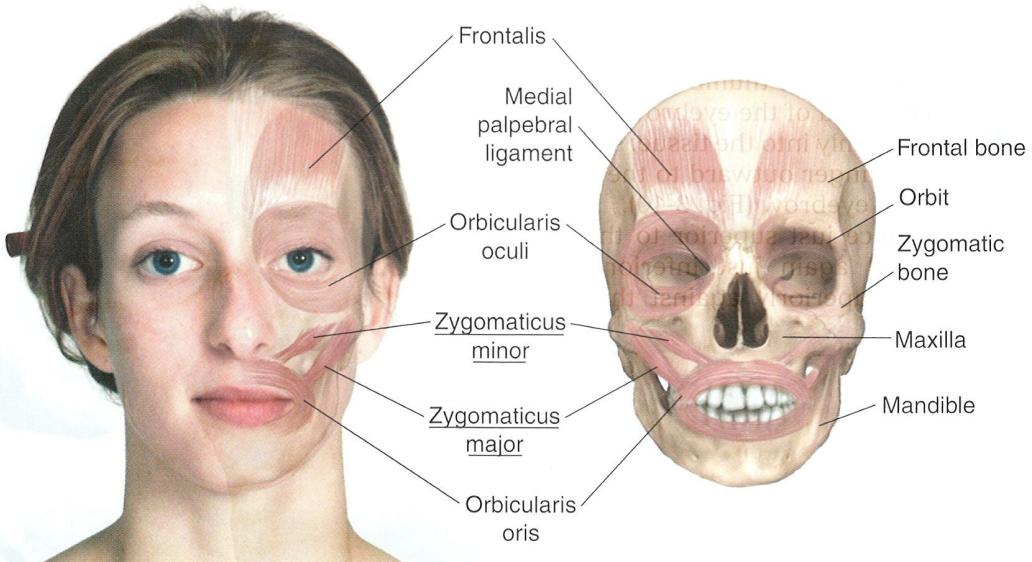
**Zygomaticus major** and **minor** (Fig. 3-12) are the principal smiling muscles; their trigger points arise from trigger point activity in the chewing muscles (masseter and the pterygoids) (see Plates 3-3 and 3-4). It is best examined by pincer palpation with the index finger in the mouth and the thumb outside the mouth, or vice versa.

### Attachments

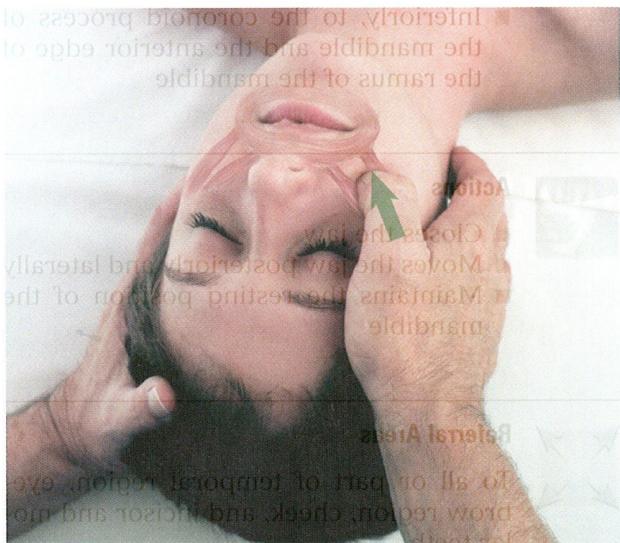
- Superiorly, to the zygomatic bone
- Inferiorly, to the tissues at the corners of the mouth, blending with fibers of orbicularis oris

### Actions

Pull the corners of the mouth up and back, as in smiling



**Figure 3-12** Anatomy of zygomaticus



**Figure 3-13** Stripping of zygomaticus



### Referral Area

Up the cheek and along the side of the nose, past the medial corner of the eye and the eyebrow, and over the medial aspect of the forehead



### Other Muscles to Examine

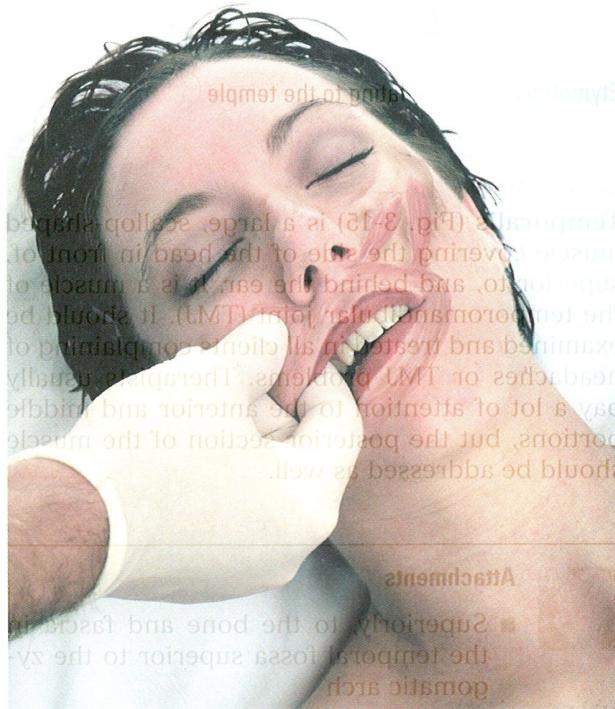
- Masseter
- Pterygoids
- Orbicularis oculi



### Manual Therapy

#### STRIPPING

- The client lies supine.
- Place the edge of the thumb against the zygomatic bone (cheekbone).



**Figure 3-14** Intraoral pincer compression of zygomaticus

- Pressing firmly into the tissue, slide the thumb slowly inferiorly to the corner of the mouth (Fig. 3-13).

#### COMPRESSION

- The client lies supine.
- Place the index finger inside the mouth in the pouch of the cheek.
- Place the tip of the thumb on the outside of the cheek.
- Using pincer palpation, explore the length of the muscle for trigger points or tender points. Compress and hold each point until it releases (Fig. 3-14).