

Facial Anatomy

Daniel J. Pearce, MD; William W. Huang, MD, MPH

Dr. Pearce is Assistant Professor of Dermatologic Surgery and Dr. Huang is Assistant Professor of Dermatology, Wake Forest University School of Medicine, Winston-Salem, North Carolina.
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Table 1.

Muscles of Facial Expression

Muscle	Primary Innervation	Effect
Upper Face		
Auricularis (anterior, superior, posterior)	Temporal	Wiggle ears
Frontalis	Temporal	Elevation of brow (horizontal forehead lines)
Corrugator supercilii	Temporal	Medial depression of brow (vertical glabellar lines)
Orbicularis oculi (orbital and palpebral parts)	Temporal/zygomatic	Closes eyelids/squint
Midface		
Procerus	Buccal/zygomatic	Vertical compression/shortening of the nose (bunny lines)
Nasalis (transverse and ali parts)	Buccal (transverse part)/zygomatic (ali part)	Compression of cartilage and flaring of ala
Levator labii superioris alaeque nasi	Zygomatic	Dilate nostril (intense inspiration) and raise upper lip (snarl)
Levator anguli oris	Buccal	Elevation of angle of mouth
Levator labii superioris	Buccal	Elevation of upper lip
Zygomaticus minor	Buccal	Elevation of angles of mouth
Zygomaticus major	Buccal	Elevation of angles of mouth
Buccinator	Buccal	Compression of cheeks against teeth
Depressor septi nasi	Buccal	Depression of septum (widens nares during forceful inspiration)

continued on next page

Table 1. (continued)

Muscle	Primary Innervation	Effect
Lower Face		
Risorius	Buccal/marginal mandibular	Superolateral drawing of the angles of the mouth (grinning)
Depressor anguli oris	Marginal mandibular	Depression of angles of mouth
Depressor labii inferioris	Marginal mandibular	Depression of lower lip
Orbicularis oris	Buccal (superior portion)/marginal mandibular (inferior portion)	Closes mouth/purses lips
Mentalis	Marginal mandibular	Depression/retraction of the lower lip
Platysma	Marginal mandibular (superior portion)/cervical (inferior portion)	Depression of jaw, lower lip, and angles of mouth

Table 2.

Key Concepts for Muscles of Facial Expression

Motor innervation is via CN VII

CN VII branches: temporal, zygomatic, buccal, marginal mandibular, and cervical

The frontalis is connected to the occipitalis via the galea aponeurotica

SMAS is essentially a contiguous facial layer that envelopes the muscles of the face/neck and serves to coordinate expression

Surgical planes of dissection: face, superficial to SMAS; nose, deep to SMAS; scalp, subgaleal area

Muscle innervation typically is from the deep portion of the muscle belly with the exception of the buccinator muscle, which can be more readily damaged during surgery

Danger Zones for Damage to Motor Nerves

Temporal branch (CN VII): area between lines drawn from earlobe to lateral brow and from tragus to upper lateral forehead, most accessible over bony prominence of zygoma; damage leads to inability to raise the eyebrow (ie, brow ptosis)

Marginal mandibular branch (CN VII): bony edge of mandible inferior and lateral to the oral commissure (the nerve may sag 1–2 cm lower in elderly patients); damage leads to loss of the lower lip depressors and an asymmetric smile, and some cases may have loss of orbicularis oris function with protrusion of the lower lip at rest as well as speech impairment (letters *g*, *p*, and *q*)

Spinal accessory nerve (CN XI): Erb's point at posterior edge of sternocleidomastoid approximately one-third to one-half the way down the muscle; damage leads to an asymmetric neckline, winged scapula, drooping of the shoulder, and weakness of forward elevation

Abbreviations: CN, cranial nerve; SMAS, superficial musculoaponeurotic system.

Table 3.

Select Arterial Supply^{a,b}

Artery	Supplied Sites	Origin
Upper Face		
Supratrochlear	Nasal root/mid and lower forehead	IC→ophthalmic→orbital
Supraorbital	Forehead and scalp	IC→ophthalmic→orbital
Superficial temporal	Forehead, scalp, and lateral face	EC
Midface		
Dorsal nasal	Nasal root/sidewall	IC→ophthalmic→orbital
External nasal	Nasal dorsum/sidewall/tip	IC→ophthalmic→orbital→anterior ethmoidal
Infraorbital	Cheek, nose, and upper lip	EC→maxillary
Transverse facial	Cheek	EC→superficial temporal
Lateral nasal	Nasal tip and ala	EC→facial→angular
Lower Face		
Inferior labial	Lower lip	EC→facial
Superior labial	Upper lip	EC→facial
Mental	Chin	EC→maxillary→inferior alveolar

Abbreviations: IC, internal carotid; EC, external carotid.

^aThe facial artery becomes the angular artery after giving of its superior labial branch anastomoses with the dorsal nasal artery from the IC, which represents an anastomosis of the IC and EC systems.

^bThe occipital artery of the EC supplies the posterior scalp with vigorous anastomoses.

Practice Questions

- 1. Which of the following muscles is *not* directly involved in smiling?**
 - a. orbicularis oris
 - b. risorius
 - c. zygomaticus major
 - d. zygomaticus minor

- 2. Which represents the most robust connection between the internal carotid and external carotid arteries?**
 - a. angular→dorsal nasal
 - b. infraorbital→angular
 - c. superior labial→lateral nasal
 - d. superficial temporal→infraorbital

- 3. Which muscle is *not* used during deep inspiration to flare the nares?**
 - a. depressor septi nasi
 - b. levator labii superioris alaeque nasi
 - c. nasalis
 - d. procerus

- 4. Which muscle receives its innervations from its superficial surface?**
 - a. buccinator
 - b. depressor anguli oris
 - c. frontalis
 - d. mentalis

- 5. Blood supply to the chin is primarily from what branch of the external carotid artery?**
 - a. inferior labial
 - b. maxillary
 - c. ophthalmic
 - d. superficial temporal

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