PATIENTS WITH ORAL/FACIAL PIERCINGS

2 Credits

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PATIENTS WITH ORAL/FACIAL PIERCINGS
Course Outline

1. OVERVIEW

2. ANATOMY OF THE TONGUE

3. ANATOMY OF THE LIP

4. THE PIERCING PROCEDURE
   - Complications and Risks Associated with Oral Jewelry
   - What role does tongue piercing play with tongue cancer?

5. CONCLUSION

6. BIBLIOGRAPHY

7. SELF STUDY EXAMINATION

OBJECTIVES:
   A. UNDERSTAND CURRENT TRENDS THAT AFFECT PATIENTS WITH ORAL/FACIAL PIERCING
   B. RECOGNIZE COMPLICATIONS THAT CAN OCCUR AS A RESULT OF A ORAL/FACIAL PIERCING
   C. REVIEW PATIENT EDUCATION AND TREATMENT OPTIONS
OVERVIEW

Body and oral/ facial piercing is a trend that became popular in the 1990’s. Every generation has to make a statement. Just look around and you are bound to see young people of all nationalities with pierced ears, eyebrows, noses, lips, cheeks, belly buttons, breasts and tongues. Most young people do whatever it takes to be cool and fit in. Health risks or potential problems are usually not taken seriously in their decision making process.

The purpose of this course is to educate members of the dental/medical profession as to the health risks that may occur in a patient with body piercings. The anatomy of the oral cavity, which pertains to oral piercing, will be discussed along with the potentially affected nerves, and other problems that may result from this form of expression.

It has not been a secret that members of the dental and medical community are strongly opposed to body piercing. In fact, the American Dental Association cited oral piercing as a public health hazard. At the 139th annual session held in San Francisco, the 143,000-member association passed a resolution opposing the practice. “The piercing of oral structures presents the potential for infection because of vast amounts of bacteria in the mouth and may cause airway obstruction because of swelling,” according to Gary C. Armitage, DDS, chairperson of the American Dental Association’s council on scientific affairs.

The oral region of the head has many structures within it, such as the lips, oral cavity, palate, tongue, floor of mouth, and portions of the throat. These areas are more vulnerable to infection than other parts of the body, although the belly button, eyes brows and breasts are also vulnerable to infection as is any open wound.

ANATOMY OF THE TONGUE

When studying the tongue, several anatomical structures are observed as well as underlying blood vessels and nerves that communicate for sensory functions. The tongue attaches at the pharyngeal portion of the throat that is the base of the tongue. The body of the tongue lies freely in the oral cavity and is able to move about easily. Separating the body of the tongue from the base of the tongue is a V-
shaped groove called the **sulcus terminalis**. The tip or apex of the tongue, the lateral borders and the dorsal or top of the tongue contain specialized mucosa called **lingual papillae**.

At the sulcus terminalis, a point in the V-shape structure contains a depression called the foramen cecum where **circumvallate lingual papillae** line up on the anterior side near the lingual tonsil area at the base of the tongue. The ventral or lower side of the tongue has many blood vessels and nerves. A structure called the **plica fimbriata** is a fold with fringe-like projections and is beside each lingual vein. A Parasympathetic nerve called the **chorda tympani nerve** communicates with these structures and allows for taste as well as submandibular and sublingual glandular functions. This nerve moves along the floor of the mouth with the lingual nerve to give the body of tongue taste sensation.

The lateral borders of the tongue contain **foliate lingual papillae** that are readily seen on children’s tongues, as the ridges are more prominent. The dorsal surface has **median lingual papillae** that are sensory organs associated with taste as well as other sensory functions. The tongue is divided by a depression called the **median lingual sulcus**. The **filiform lingual papillae** that give the dorsal surface
its velvety texture are slender, threadlike papillae. **Fungiform papillae** are round red mushroom shaped dots readily found on the apex of the tongue. Posterior to the dorsal surface of the tongue’s base is an irregular mass of tonsillar tissue, the **lingual tonsil**.

**ANATOMY OF THE LIPS**

The lips are distinguishable because of their color. The contrast of the vermillion color and the lighter tones of the facial skin accentuate this region. The **vermillion border** is a transition zone from the lips to facial skin. The eyes are drawn to the lips because of their shape. The lips are considered symmetrical if they are centered between the eyes and have the same fullness in upper and lower regions.

Above the upper lip is a vertical groove called the **philtrum**. It extends from the nasal septum and meets the lip at the tubercle or thick area of the upper lip. Another groove that is in the area of the nose and lips is the **labial commissure** that meets at the corners where the upper and lower lips come together. The **nasolabial sulcus** is the groove traveling from the corner of the mouth (**labial commissure**) to the ala of the nose. Under the lower lip, a groove that separates it from the chin is the **labiomental groove**.

Muscles of the facial expression are innervated by the seventh cranial nerve, VII. Branches of the trigeminal nerve, V, innervate the area of the labial and buccal mucosa. Several branches of the facial nerve also pass through this area.
THE PIERCING PROCEDURE

Almost all oral piercings are referred to by body modification artists as a straight piercing. That is, they do not require the boring needle to be bent as is required with other body piercing sites. The procedure begins with the piercer assessing the anatomy of the piercing site. The majority of sites are chosen based on the statistical absence of major vessels or nerves, such as the midline of the tongue or lip. The introduction of trans-dermal illumination devices to further rule out the presence of vessels is currently used by a minority of studios. No research exists to establish the effectiveness of this assessment technique. Still it appears to be a reasonable further precaution. Once a site is chosen, it is marked and the tissue is grasped with sponge forceps. The most common initial piercing uses a 14-gauge boring needle to pierce the tissue. Once the tissue has been pierced, an identically sized piece of jewelry is used to push the boring needle through the tissue so that only the jewelry remains. No local anesthetic is used for this procedure. Most oral piercings require between four and six weeks to heal.

After oral/facial piercing, written warnings and instructions are usually given. Ice is recommended for swelling, but ice should not be chewed. No dairy products are recommended for 4-7 days after piercing. Use of listerine is recommended after eating, drinking, and smoking. Gly-oxide/dental oxide should be applied to the pierced area 3 times a day. Drinking through a straw is to be avoided because this perpetuates swelling.

Also, individuals with tongue piercings are advised to clean the area daily to get bacteria causing food particles out. Patients must also check once a day to make sure the barbell is tight. The end of the stud can come off and be swallowed.
Patients should be advised to tell their dentist that they have an oral piercing since they can interfere with x-rays. The dentist must instruct the patient to remove any oral adornments before radiographs are taken.

**Complications and Risks Associated with Oral Jewelry**

A variety of complications may arise from oral jewelry. Fracturing of anterior teeth and the posterior cusp tips is the most commonly reported negative sequelae. There are more than a dozen case reports existing. Persistent tapping of the lingual barbell against the teeth, in addition to the accidental or intentional biting of the barbell head, is the apparent cause for this damage. A recent study found that 47% of individuals wearing a lingual barbell for four years or more exhibited this form of damage.

Another name for this type of injury is a wrecking ball fracture. Lingual barbells have also been implicated as a potential etiology for cracked-tooth syndrome. The factor most closely associated with dental fractures is the length of the barbell. A proper fitting lingual barbell should have a sheath length just greater than the thickness of the tongue. Yet many individuals choose to keep the longer initial barbell as their primary piece of jewelry. Reasons for keeping the initial barbell include the longer barbell being fun as it can be moved through the tongue a greater distance, as well as the expense of purchasing a shorter, second barbell. One body modification artist stated that, despite his studio including the downsizing piece of jewelry and follow-up appointment in the initial price of the piercing, approximately a third of his clients fail to return for this appointment. When a longer barbell is noted by dental practitioners, they should strongly encourage their patients to replace it with a shorter, less damaging barbell. To further decrease the likelihood of dental fractures, the piercing community has developed acrylic heads for the barbells, which are theorized to be less detrimental to the teeth than metal barbell heads.
Gingival recession and/or periodontal defects are another reported complication of oral jewelry. For individuals wearing long barbells for a period greater than two years, more than 50% were found to exhibit gingival stripping on the lingual aspect of their mandibular incisors. Facial gingival stripping has also been reported secondary to the wearing of lip labrets or rings. Individuals who habitually play with their piercings by rubbing them against their teeth and gingiva are most likely to experience this type of damage. Lip labrets that are placed deeper in the sulcus are believed to increase the chance for gingival recession. Questions have also been raised about the possibility that larger gauge jewelry may be less detrimental to the oral tissues as it distributes any forces present over a larger area. To date, the size of the labret stud or lingual barbell has not been evaluated. If a patient does choose to proceed with an oral piercing, a recall to evaluate gingival health is advisable within two months after the jewelry insertion, in an effort to intercept any negative effects on the periodontium.

Allergic response/sensitization to jewelry has been reported and is most frequently linked to the failure of individuals to wear biologically inert jewelry materials. Silver-coatings and other finishes on poor quality jewelry may wear off resulting in the exposure of an underlying material that can delay wound healing or create an allergic sensitivity in patients. Once again, adolescents and youth engaging in peer-piercing appear at greater risk for this potential complication in that limited financial resources in this age group may present a barrier to the purchasing of quality oral jewelry.
Tissue hyperplasia around jewelry may occur. Mild tissue hyperplasia at the piercing site may be anticipated. For most types of jewelry this will approximate the outline of the jewelry resting against the tissue. Severe tissue hyperplasia has been reported with jewelry engulfed in tissue to the point that surgical excision was the only viable option to release the jewelry. For this reason, longer lingual barbells and lip rings instead of labrets are generally placed following an initial piercing.

Warnings are given that piercing is a potential “portal of entry” for disease causing viruses, bacteria, etc., especially oral piercings. It is strongly recommended not to come in contact with body fluids for three months. Most patients who get oral/facial piercings do not think about the physiological effects. The tongue piercing
is not only dangerous, but also can lead to malnutrition, anemia or many other serious complications.

Many facilities that pierce tongues do not always maintain a sterile environment and the risk of infection is great because of the vast amounts of bacteria located in the mouth. Local infection can occur because the mouth is hard to sterilize. Redness and swelling due to local infection can cause serious complications such as airway obstruction. Systemic infection is always a possibility and includes the risk of hepatitis and AIDS. The National Institute of Health has identified oral piercings as a possible vehicle for bloodborne hepatitis transmission.

Common symptoms following piercing include pain, swelling, infection, and increased saliva flow. Additionally, oral adornments if swallowed can cause problems. Other adverse outcomes to oral piercing may include trauma to teeth, interference with chewing and speaking, hypersensitivity to metals, foreign debris in the pierced site, breathing difficulty because of adornment swallowing and gingiva (gum) injury.

Many operators are not aware that the tongue has many blood vessels in it and there may be an increased risk of bleeding problems. An immovable clot within a vessel may result. A blood clot in this region can produce a life-threatening stroke.

After the oral sites are pierced and jewelry adorned, there is a risk of chipping teeth or breaking the enamel or fillings of the teeth as one talks and eats. “This damage may also result in the death of the tooth’s inner pulp, if the trauma to the tooth is chronic”, according to Margaret J. Fehrenbach, RDH, an educational consultant.

Several cranial nerves can be affected by piercings. The twelfth cranial nerve, XII, the hypoglossal, is the motor innervation to both the extrinsic and intrinsic tongue muscles. Therefore, damage to this nerve can cause inability to perform vital tongue functions such as speaking and eating. Damage to the ninth cranial nerve, the glossopharyngeal, IX, can cause loss of taste and general sensation for the tongue. Loss of taste sensation may also occur if the chorda tympani, a branch of the facial nerve, is pierced. The lingual nerve, a branch of V3, which runs along with the chorda tympani, can also be damaged creating loss of sensation to the body of the tongue and the floor of the mouth. Also, because the lingual nerve innervates
the sublingual and submandibular salivary glands, salivary flow can be adversely affected.

The muscles of facial expression are innervated by the seventh cranial nerve, the facial nerve, VII, which can easily be damaged by piercing. The facial nerve branches are located superficially and are vulnerable to trauma. Damage to any branches of the facial nerve can result in facial paralysis in the affected muscle area, causing inability to use these facial muscles for expression, speaking and/or chewing. Because the facial nerve passes through the parotid gland damage to the nerve may affect salivary flow, resulting in permanent drooling.

There is a risk factor for bacteremia associated with oral piercings that may lead to Endocarditis (a serious inflammation of the heart valves or tissues). Bacteria may enter the bloodstream through the opening resulting from an oral piercing and cause an infection in the tissues surrounding the heart. In the case of cardiac irregularities, the infection could prove fatal.

**What role does tongue piercing play with tongue cancer?**

It is important to point out that oral cancer may have signs and symptoms that may mistakenly be associated with a complication of tongue piercing. According to Dr. Thomas Stuttaford, the incidence of cancer in the tongue is now increasing.
With 11.5% of cases of cancer affecting the tip, 6.5% affecting the center where the stud is put, 47% occur on the margins where the tongue rubs against rough teeth.

Tongue cancer is usually first noticed as a persistent ulcer, a warty growth, a firm swelling at the root of the tongue, or a constant white patch. Tongue cancers are sometimes diagnosed because of enlargement of the glands in the neck. The pain from the tongue can frequently be referred to the ear so that one of the classic presumptions of the condition is earache, coupled with an unexplained, or perhaps unmentioned, ulcer.

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<td>Excessive drooling</td>
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<td>Chipped and cracked teeth</td>
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<td>Injuries to the gums</td>
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<td>Increased salivary flow</td>
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<td>Scar tissue</td>
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<td>Risk of endocarditis, an inflammation of the heart valves</td>
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<td>A &quot;numb&quot; tongue - temporary or permanent</td>
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<td>Impaired sense of taste</td>
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<td>Touching the mouth jewelry can introduce infection</td>
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<td>Damage to teeth and gums can lead to need for dental reconstruction, which can be expensive</td>
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<td>Possible allergic response to metals used in piercing</td>
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<td>Jewelry needs constant attention and upkeep</td>
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CONCLUSION

While it is pretty clear that medicine and dentistry as a whole are adamantly opposed to body piercings, this craze has not seemed to fade within the past twenty years, it has only become more creative. Whatever new craze the future has in store for us, you can rest assured it will probably have opposition.

For now, medical and dental associations say healthcare providers should be aware of the increasing number of patients with pierced intraoral and perioral sites. Also, they should be prepared to address dental and medical issues, such as the potential damage to the teeth, gingiva and the risk of localized and/or systemic infection that may arise as a result of piercing. Physicians and dentists need to provide appropriate guidance to patients who are contemplating body piercing and warn them of potential problems with infection and disease transmission.
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BIBLIOGRAPHY

Baum, MS. A Piercing Issue. *Health State* 1996; 44 (4); 346-7


Instructions: After carefully reading the text, answer the following questions. Fill in the corresponding circle on the answer sheet provided. Good Luck!

1) The American Dental Association sited oral piercing as a public health hazard.
   a) True
   b) False

2) The oral region consists of all except:
   a) Lips
   b) Palate
   c) Tongue
   d) Nasal sulcus

3) The tip of the tongue is the:
   a) Apex of the tongue
   b) Base of the tongue
   c) Body of the tongue
   d) Lingual papillae

4) The foliate papillae give the dorsal surface of the tongue its velvety texture.
   a) True
   b) False

5) Cranial nerves that can be damaged by oral piercings include all except:
   a) Vestibulocochlear
   b) Facial
   c) Trigeminal
   d) Hypoglossal
   e) Glosspharyngeal

6) The upper and lower lips meet at the corner off the mouth which is the:
   a) Philtrum
   b) Labial commissure
   c) Nasolabial sulcus
   d) Labial groove
7) Individuals typically have anesthetic during the oral/facial piercing process.
   a) True
   b) False

8) Damage to the lingual nerve can affect salivary flow.
   a) True
   b) False

9) The National Institute of Health has identified piercing as a possible vehicle for:
   a) AIDS
   b) Tuberculosis
   c) Hepatitis
   d) None of the above

10) Common symptoms following oral piercing include:
    a) Pain and swelling
    b) Infection
    c) Increased saliva flow
    d) All of the above

11) Signs of tongue cancer include all except:
    a) A persistent ulcer
    b) A warty growth
    c) A constant black patch
    d) A firm swelling at the root of the tongue.

12) Healthcare workers should provide guidance to their patients who are contemplating oral piercing.
    a) True
    b) False
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Please rate the following from A to E (A being best)

- Ordering experience quality & processing timeliness: O 0 0 0 0
- Course objectives were met: O 0 0 0 0
- Clarity and understandability of course content: O 0 0 0 0
- Author/instructor demonstrated knowledge of subject: O 0 0 0 0
- Course information applicability to daily practice: O 0 0 0 0
- Overall, I would rate this course: O 0 0 0 0
- Course improvements:
- Suggested Future Topics:
- Other Comments (positive or negative):

If you made comments, may we use them in our advertising? Yes O No
**Survey / Questionnaire**

Please take a moment to complete an evaluation of the ordering process, course materials and educational methods provided in this course. Submit survey with your answer sheet via fax or mail. Thank you.

**Patients with Oral/Facial Piercings**

<table>
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<tr>
<th>Question</th>
<th>Options</th>
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<td>What is your profession?</td>
<td>RDA  CDA  RDH  DDS  DMD  Other</td>
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<td>What is your gender?</td>
<td>Male / Female</td>
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<td>Have you taken a course with us previously?</td>
<td>Yes / No</td>
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<td>Rate your ordering experience</td>
<td>Excellent  Good  Average  Poor</td>
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<td>Rate the overall quality of the course</td>
<td>Excellent  Good  Average  Poor</td>
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<td>Rate the ease of technology—navigation</td>
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<td>Rate the instructors overall teaching effectiveness</td>
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<td>Was the course applicable to your profession?</td>
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<td>Did you learn new viewpoints from this course?</td>
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<td>Did you increase your solving skills from this course?</td>
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<td>Do you feel the course objectives were met?</td>
<td>Yes / No</td>
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<td>Did you become more competent due to this course?</td>
<td>Yes / No</td>
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<td>Did you improve your ability to communicate more clearly about this subject?</td>
<td>Yes / No</td>
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<td>Did this course increase your interest in the subject matter?</td>
<td>Yes / No</td>
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<td>Did the course increase knowledge for skills that apply to your profession?</td>
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<td>Is self instruction easy for you?</td>
<td>Yes / No</td>
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<td>The progression of the course made the test easy to follow.</td>
<td>Yes / No</td>
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<td>Did the self-study examination increase your ability to retain course subject matter?</td>
<td>Yes / No</td>
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<td>Please suggest future topics that would be of interest to you.</td>
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<td>Feel free to comment on improvements that you would like to suggest.</td>
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<td>Any additional comments or suggestions on improving your learning experience with Home Study Solutions.com, Inc.</td>
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