

## Tongue Piercing Mania - Danger Ahead

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**Received:** August 16, 2016; **Published:** August 25, 2016

### Abstract

Body piercing is one of the oldest forms of adornment and body modification [1]. Mayans pierced their tongues for spiritual purposes and in North America; body piercing was a tradition of the Native Americans [2]. Body piercing and other body modifications have increased tremendously in popularity in recent years and have started to be practiced across many social and age groups [3]. Ears, nose, tongue, navel, eyebrows, cheeks, lips and any other body site you can think of are the sites where the piercing is done. According to most, body piercing is trendy, fashionable and a sign of maturity and individuality. This form of art is popular form of self-expression among the college students, models, rock stars and stage artists.

**Keywords:** *Tongue Piercing; Mayans; Americans; Body piercing; lingual frenum*

### Introduction

The most commonly pierced intraoral sites are the lips and tongue. Less frequently pierced intraoral locations are the cheek, uvula and lingual frenum [4]. As many as 10.5 percent of 446 undergraduate university students surveyed admitted to have their tongue pierced [5].

In a 1999 survey of 391 United States college students with body piercings, the 2 most common reasons given for piercing was self-expression (48%) and "just wanted one" (38%). Sixty-three percent of these students obtained their piercing between the ages of 18 to 22, although ages as early as 11 and as late as 42 were reported [15].

Tongue piercing was first reported in the medical literature by Sully and Chen [1] in 1992. Since then there have been numerous case reports documenting a variety of complications associated with the procedure. The complications range from potentially life threatening conditions, such as airway obstruction [6], prolonged bleeding [7], thrombophlebitis [8] and infective endocarditis [9-12], to traumatic injuries to teeth and periodontal tissues from intra-oral jewellery.

Tongue is usually pierced in the centre in the midline vertically or horizontally usually anterior to the lingual frenum. The tongue may also be pierced at the tip, or the dorso-lateral area or the median sulcus depending on the individual choice. The piercing may be through the body of the tongue i.e. through and through piercing or just the surface of the tongue.

There is paucity of laws to regulate oral piercing centers. Local authorities in London have powers to regulate the practice of body piercing [the London Local Authorities Act 1991 and the Greater London Council (General Powers) Act 1981]. Local authorities outside London have the provision to regulate ear piercing [Local Government (Miscellaneous Provisions) Act 1982], but not body piercing per se [13]. Mostly tongue piercing is done at salons, malls, jewelry shops or home, which are not regulated and are unauthorized for body piercing. It is done by teenagers themselves or friends, untrained people or jewelers who have received little or no training about body

piercing and haven't got the slightest idea about sterilization. The procedure is usually performed without anesthesia. The protruded tongue is clamped, supported by a piece of cork and pierced by a needle of equal gauge to that of the barbell stem [14]. Due to the common occurrence of swelling, it is recommended that a longer barbell shank initially be placed in the tongue, followed by the insertion of a shorter barbell shank after healing [16].

The most common jewellery worn on tongue piercing is dumbbell shaped, also known as the barbells. Barbells usually consist of a metal/ non metal bar with balls attached at each end. Apart from barbells, rings and labrets have also gained popularity. Surgical stainless steel should be used for the tongue piercing to produce infection free and reaction free piercing. Allergy to it is rare. Other commonly used materials are Acrylic studs, Teflon and nylon, Silver, Titanium, 18 karat Gold, etc. Silver should not be used for the new piercing in the tongue as it gets tarnished and corroded in the oral cavity. This can discolor the jewellery and may cause allergic reactions at the wound site. Also white gold should not be used as it contains nickel to which many people are allergic.

### Aftercare and complications

After the piercing, the tongue usually swells to enormous size within a few hours and takes nearly a week to return to its normal size as the healing proceeds. During this time, eating and speaking becomes difficult and there is always a tendency to bite ones tongue. This should be avoided. Aftercare plays a very important role in smooth and uneventful healing. Soft liquid diet should be taken for the first few days. Alcohol and smoking should also be avoided.

Piercing should be kept clean and mouth should be rinsed several times a day especially after the meals to prevent food accumulation. Don't rotate the jewellery before the healing is complete as this can become a portal for the bacteria present on the surface of the jewellery to enter the wound. Excessive talking, kissing or oral sex and playing with the jewellery should be avoided as this causes trauma to the tissues more so during the healing period. After the healing is complete the jewellery should be removed for cleaning.

Since 1992, several case reports have documented dental/oral and systemic complications from tongue piercing.

These complications can be categorized as acute (or early) and late (or chronic). Some of the acute complications are common, such as tongue swelling and pain [21], and difficulties in mastication, swallowing, and speech [14], while others are rarer, such as increased salivary flow [12,15], generation of galvanic current between the stainless-steel barbell and metallic restorations, severe infection, scar tissue formation and prolonged hemorrhage [7].

Bleeding is the most common early or immediate complication of tongue piercing. As tongue is richly supplied by blood vessels any damage to these causes enormous bleeding. Injury to nerves during piercing at the hands of untrained people can lead to the formation of traumatic neuromas which are very painful and affect the taste sensation.

Late or chronic complications include chipping or fracture of teeth [19], trauma to the gingiva [14,19], localized tissue overgrowth [19,20], persistent difficulties in oral functions [1,21], and swallowing of the device or device parts [4,14,22].

### Dental complications

**Tooth fracture:** Most often people with tongue piercing bite the barbell while chewing leading to cracking or chipping of the tooth or restorations if present. In most cases the anterior teeth are involved, fracture of these can result in pulpal insult often requiring endodontic treatment followed by costly crowns. Trauma to posterior dentition ensues from tongue piercing and an associated barbell biting habit [18]. Croll [24] proposed a useful analogy which may explain the occurrence of fractures in clinically sound teeth. He compares the lingual barbell to a 'wrecking ball' which consists of a heavy ball suspended in the air by a cable mounted on a crane that swings and strikes the edifice with force. This principle is applied on a smaller scale, when the lingual barbell strikes a tooth. This would suggest that all teeth, regardless of their restorative status, are vulnerable to this type of fracture.

Gum recession and periodontal diseases: The tongue piercing usually comes in constant contact with the gums of the lower teeth and irritates them while eating or speaking. Recession in one or more sites in the area directly opposite the labret (jewellery) was noted in 68% of the test subjects as compared to 4% in the same gingival area of the controls [17]. The prevalence of lingual recession was significantly greater in subjects with a long stem barbell. The distribution of lingual recession by tooth shows that mandibular central incisors were the teeth most frequently affected (88% of affected teeth), while maxillary anterior teeth were not affected. The mandibular left central incisor (#24) alone accounted for 53% of the affected teeth [18].



Tongue piercing may be a significant factor for the development of lingual recession in the mandibular anterior teeth and chipping in the posterior dentition. Increased time of wear is associated with increased prevalence of these complications, while barbell stem length differentially affects the prevalence of gingival recession and tooth chipping. Given the technical difficulties (access, tissue thinness, and mobility) and outcomes associated with plastic/regenerative surgery on the lingual aspect of mandibular anterior teeth, prevention appears to be the best option [18].

The longer a piercing has been in place, the more pronounced is the shift from bacteria with a moderate periodontopathogenic potential to bacteria with a high periodontopathogenic potential. Tongue piercing provides a potential reservoir for periodontopathogenic bacteria [23]. Food and debris gets collected over and around the tongue jewellery if oral care is not adequate. The debris becomes a nidus for bacteria leading to altered taste sensation and bad odour.

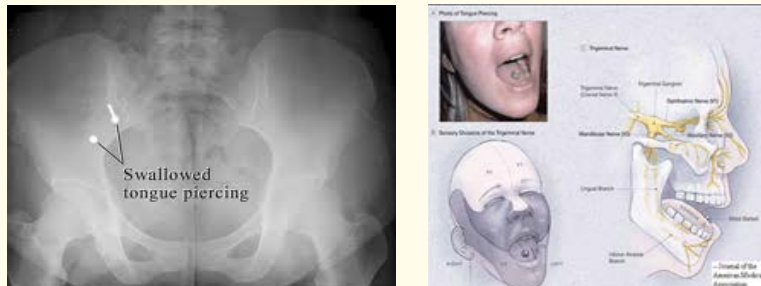
Oral jewellery can stimulate excessive salivary production and impede the ability to pronounce words clearly.

### Other complications

Presence of jewellery in the mouth interferes with oral health evaluation and also blocks the transmission of X-rays so abnormalities like cysts, abscesses or tumors may not be revealed. Also it interferes in the emergency procedures such as tongue retraction during surgical procedure, oropharyngeal tube placement for artificial respiration or placement of Ryle's tube for nutritional supplementation.

A case has been reported in which the tongue swelled to enormous size post piercing resulting in edema and obstruction of the airway which ultimately led to asphyxiation and death of the patient. Airway obstruction is well documented complication of tongue piercing [6]. If the jewelry becomes loose, chances of its aspiration are there. This may result in choking or severe damage to the respiratory or digestive tract.

Risk of transmission of life threatening disease like Hepatitis B,C,D, HIV/AIDS, syphilis and tetanus are there due to lack of aseptic techniques used for tongue piercing. Recently a correlation has been found between tongue piercing and staphylococcal and Haemophilus aphrophilus endocarditis [9-12]. Usually the mitral valve is involved and valvectomy and valve replacement is required.



Tongue piercing may cause Ludwig's Angina in rare cases which can lead to death due to respiratory arrest.

### Complications and possible sequelae of oral piercing

- Pain
- Swelling
- Infection (bacterial, viral, fungal)
- Airway obstruction
- Bleeding
- Trauma to teeth and mucosa
- Speech impediment and swallowing problems
- Hyper salivation
- Lingual nerve damage
- Swallowed or inhaled jewellery
- Foreign body incorporation into site of piercing
- Radiographic artifact
- Calculus formation on metal surfaces
- Galvanic and hypersensitivity to metal

### Conclusion

With the growing popularity of tongue piercing, people need to be more informed of potential risks and complications associated with this procedure. Also they should be aware of the materials and techniques available and their advantages and disadvantages. Also the general practitioners need to be aware of the potential complications associated with it and they need to become more involved in raising public awareness about the risks associated with oral piercing. They need to make concerted efforts to prevent medical and dental sequel. Periodontists play a vital role in detecting and treating dental defects associated with perioral and intraoral piercing.

Body piercing including oral sites is increasing in popularity in the Western world. Piercing of oral sites may lead to a number of complications some of which are life-threatening. Dentists should be aware of the increasing number of patients with pierced intra-oral and peri-oral sites and should be prepared to offer advice and guidance to patients.

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**Volume 5 Issue 1 August 2016**

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