



# Trismus/ (difficulty in mouth opening) in dentistry- a practice oriented review

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## ABSTRACT

Trismus is a common presentation by the patient in routine dental practice. This condition causes difficulty in opening mouth which in turn impairs eating, interferes with oral hygiene, restricts access for dental procedures, and may adversely affect speech and facial appearance. Trismus has number of potential causes and is important to recognize the underlying cause for effective management of this condition. This article is mainly for those dentists who feel trismus as one of the most difficult problem during day to day practice.

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## Introduction

### Definition

Trismus in greek (grating) is Tonic contraction of the muscles of mastication<sup>[1]</sup>

### What Is Normal Mouth Opening?

Range- 40-60 mm (avg-35mm)

Males display greater mouth opening

Lateral movement is 8-12 mm (figure 1)

### Causes of Trismus, Etiology, Differential Diagnosis and Treatment

Several conditions may cause or predispose an individual to develop TRISMUS.<sup>[2]</sup>

#### 1. Intra-Articular Causes

- Ankylosis
- Arthritis synovitis
- Meniscus pathology

#### Ankylosis

True bony ankylosis can result from trauma to chin, infections and from prolonged immobilization following condylar fracture

Rx- several surgical procedures are used to treat bony ankylosis, Eg: Gap arthroplasty using interpositional materials between the cut segments.<sup>[3]</sup>

Fibrous ankylosis usually results due to trauma and infection

Rx- trismus appliances in conjunction with physical therapy<sup>[4]</sup>

### Trismus Appliances

#### Indications:

- Intracapsular (TMJ) pathosis
- Bony interferences from styloid or coronoid process
- The presence of foreign body
- Muscle fibrosis or immature scar tissue

#### Types of Trismus Appliances

##### Externally activated appliances

1. Dynamic bite opener
2. Threaded, tapered screw
3. Screw type mouth gag
4. Fingers
5. Tongue blades

6. Continuous-dynamic jaw extension apparatus.

##### Internally activated appliances

1. Tongue blades

2. Plastic tapered cylinder

#### 2. Extra-Articular Causes

- Infection
- Trauma
- Dental treatment
- TMD
- Tumors and oral care
- Drugs
- Radiotherapy and chemotherapy
- Congenital problems
- Miscellaneous disorders

#### Infection

Odontogenic- Pulpal

- Periodontal

- Pericoronal

Non-Odontogenic- Peritonsillar abscess

- Tetanus

- Meningitis

- Brain abscess

- Parotid abscess

#### a. Infection

The hallmark of a masticatory space infection is trismus. Or infection in anterior compartment of lateral pharyngeal space results in trismus. If these infections are unchecked, can spread to various facial spaces of the head & neck and lead to serious complications such as cervical cellulitis/ mediastinitis.

Rx- Elimination of etiologic agent along with antibiotic coverage

Trismus or lock jaw due to masseter muscle spasm, can be a primary presenting symptom in tetanus, Caused by clostridium tetani, where tetanospasmin (toxin) is responsible for muscle spasms.<sup>[5]</sup>

Prevention- primary immunization (DPT)

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### b. Trismus Related To Dental Procedures

- Oral surgical procedures- extraction of lower molar teeth may cause trismus as a result either of inflammation involving muscles of mastication or direct trauma to the TMJ
- Inaccurate positioning of the needle when giving inferior alveolar nerve block before extraction<sup>[6]</sup>
- Barbing of needles at the time of injection followed by tissue damage on withdrawal of the barbed needle causes post-injection persistent paresthesia, trismus and paresis<sup>[7]</sup>

Rx- in acute phase

- Heat therapy
- Analgesics
- A soft diet
- Muscle relaxants (if necessary)
- When acute phase is over the patient should be advised to initiate physiotherapy for opening and closing mouth.

### c. Trauma

Fractures, particularly those of the mandible and Fractures of zygomatic arch and zygomatic arch complex, Accidental incorporation of foreign bodies due to external traumatic injury<sup>[8]</sup>

Rx- fracture reduction, removal of foreign bodies with antibiotic coverage

### d. Temporomandibular Joint Disorders

- Extra capsular disorders - myofascial pain
- Intra capsular problems - disc displacement, arthritis, fibrosis etc
- Acute closed locked conditions – displaced meniscus

### e. Tumours and Oral Malignancies

Rarely, trismus is a symptom of nasopharyngeal or infra temporal tumors/ fibrosis of temporalis tendon, when patient has limited mouth opening, always pre malignant conditions like oral sub mucous fibrosis (OSMF) should also be considered in differential diagnosis

### f. Drug Therapy

Succinyl choline, phenothiazines and tricyclic antidepressants causes trismus as a secondary effect. Trismus can be seen as an extra-pyramidal side-effect of metaclopromide, phenothiazines and other medications.

### g. Radiotherapy / Chemotherapy

Complications of radiotherapy-

1. Osteoradionecrosis may result in pain, trismus, suppuration and occasionally a foul smelling wound.
2. When muscles of mastication are within the field of radiation, it leads to fibrosis and result in decreased mouth opening.

**Chemotherapy**- oral mucosal cells have high growth rate and are susceptible to the toxic effects of chemotherapy, which lead to stomatitis.

### h. Congenital / Developmental Causes

Hypertrophy of coronoid process causes interference of coronoid against the anteromedial margin of the zygomatic arch.<sup>[9]</sup>

Rx-coronoidectomy

**Trismus-pseudo-camptodactyly syndrome** is a rare combination of hand, foot and mouth abnormalities and trismus.

### i. Miscellaneous Causes

Hysterical patients- through the mechanisms of conversion, the emotional conflict are converted into a physical symptom. Eg: trismus

Scleroderma a condition marked by edema and induration of the skin involving facial region can cause trismus.

### Conclusion

Trismus, one of the most commonly encountered complaints in the dental office is not a diagnosis by itself but an important clinical sign that acts as a key to diagnosis of various underlying pathologies. It serves as an important life saving clinical sign especially in case of tetanus that should be recognized by the dentist at the earliest and treated to avoid further complications.

Since it is a condition which the patient would definitely seek the consultation about, it is equally important from the clinician's aspect not to sideline this as a meager sign and overlook it casually, but to view it with a caution so as to detect the reason underlying this condition.

Thus, it is important for every dental practitioner to have a thorough knowledge about trismus and the various pathologies associated with it so that he can do justice both to his patients and to his profession.

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