



COMPREHENSIVE PHYSIOTHERAPY APPROACH TO IMPROVE MOUTH OPENING

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Introduction:

Oral submucous fibrosis (OSMF) is a chronic, insidious scarring disease of the oral cavity, characterized by a progressive inability to open the mouth due to loss of elasticity and the development of fibrous bands in the labial, buccal mucosa, soft palate, lip mucosa, and anterior pillars of the fauces.

Recent data suggest that the prevalence of OSMF in Gujarat, India, has increased from 0.03% to 6.42%. The most important risk factor is chewing tobacco.

Need for Developing this Protocol:

Oral submucous fibrosis is a disorder that restricts mouth opening, and no perfect treatment has been found yet. Both surgical and conservative physiotherapy treatments have been tried. Surgical treatment is reported to be very expensive and can lead to scarring and a further decrease in mouth opening after 1–2 years. Therefore, a conservative physiotherapy treatment protocol is needed that can increase mouth opening in individuals who chew tobacco without any side effects.

Scope:

- Designed to improve restricted mouth opening.
- Can be used by physiotherapists in clinical and home settings.
- Aims to enhance jaw mobility, reduce pain, and improve function.

Indications of the Mouth Opening Physiotherapy Protocol:

- Oral Submucous Fibrosis (OSMF)
- Trismus (limited jaw movement due to trauma, infection, or radiation)
- Jaw Muscle Tightness
- Temporomandibular Joint Dysfunction
- Post-surgical or Trauma-related Mouth Opening Restriction

Contraindications of the Mouth Opening Physiotherapy Protocol:

- Acute TMJ Inflammation or Infection
- Jaw Fractures or Unstable Injuries
- Severe Osteoarthritis of the TMJ
- Uncontrolled Pain or Severe Discomfort
- Recent Maxillofacial Surgery Without Medical Clearance
- Active Oral or Facial Infections

Assessment Criteria:

Pre-Therapy Evaluation: Detailed evaluation procedures for patients, including:

- Mouth Opening Measurement
- Pain levels (VAS scale)

- Functional assessments

Exercise Therapy for Mouth Opening Protocol:

A. Jaw Stretching Exercises:

- 1. Massage:** Massage the jaw muscles (masseter and temporalis) using gentle circular motions to relax tightness. Perform for 1 to 2 minutes.
- 2. Passive Stretching:** Perform mouth opening exercises with a jaw opener. (10 repetitions with a 5-second hold in the center of the teeth, and on the left and right sides of the teeth).
- 3. Massage:** Repeat the jaw muscle massage as described in point 1.
- 4. Stick Exercise:** Use wooden ice cream sticks held together with rubber bands to maintain jaw opening. Gradually increase the number of sticks as per mouth opening capacity. (10 repetitions with a 5-second hold in the center of the teeth, and on the left and right sides of the teeth).
- 5. Side Tongue Stretch:** Stretch the tongue to the left and right sides of the buccal mucosa, holding for 10 seconds with 10 repetitions on each side, then move the tongue in and out.
- 6. Cheek Puff:** Inhale deeply and puff your cheeks out. Hold the air inside the buccal mucosa by tightly closing your lips. Hold for 5 seconds and repeat 10 times. Then, take another deep breath and hold the air in your left cheek, switch to your right cheek, and hold.

B. Resisted Mouth Opening:

Place a hand under the chin and gently resist while trying to open the mouth. Hold for 5 seconds and relax. Repeat 5–10 times.

C. Jaw Mobilization Exercises:

Maitland Mobilization for TM joint: Medial glide and inferior glide of TM Joint. Perform 5 times for each glide with 3 repetitions on each side.

Electrotherapy in Mouth Opening Protocol:

A. Ultrasound Therapy: Externally applied over the cheek

Intensity: 1.4 to 1.5 W/cm²

Mode: Continuous

Frequency: 1 MHz

Duration: 7 to 8 minutes

B. TENS (Transcutaneous Electrical Nerve Stimulation):

Use TENS to alleviate pain and muscle spasms. Apply electrodes around the TMJ region for 15–20 minutes at a comfortable intensity.

C. Heat Therapy:

Use moist heat packs for 10–15 minutes before exercises to relax muscles and improve flexibility in the jaw.

These therapies should be applied based on individual tolerance and progression to ensure effective recovery and improved mouth opening.