

## April 2007 Splint

### Low Load Horizontal Mouth Splint

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#### Description of splint:

A quick and simple low load prolong stretch mouth splint



Mouth splint in action

#### Materials used/needed:

- \*1 inch webbing
- \*1 inch Velcro

- \*Moderate resistive theraband
- \*Moderate drape low temperature thermoplastic

#### Fabrication instructions:

1) Using thermoplastic splinting material, i.e., Polyform anti-microbial (I prefer not to use splinting material with memory), heat and cut two pieces a maximum of 1 inch by 4 inches.

2) With the splinting material warm, form a hook from one end of the 1 x 4 inch. The hook should have only rounded edges, as it will be placed into the corners of the

mouth. The length of the hook is usually 1-1/4" with the remaining 3 inches placed along the cheek with the end slightly flared. Form the hook and while still warm, place into the mouth and form to contour the inside of the cheek.

3) Punch hole in the splinting material that lies on the cheek.

4) Cut 2-2.5 inches wide and 4 inches long of moderate resistive theraband (I usually prefer the red theraband). Thread one end of the theraband through each hole in the splinting material.

5) Cut 1 inch webbing approximately 4-5 inches in length, then divide in equal halves and cut again. Sew hook onto one end of the webbing; loop onto the other end of the webbing.

6) Punch 2 holes in the webbing, at the opposite end of the Velcro. Place the holes approximately 3/4-1" apart. Thread the end of the theraband through the holes of the webbing.

7) Place the hook of the splint into the corners of the mouth and create tension with the theraband through adjustment of the webbing with the Velcro closure.



Posterior view of splint showing strapping and how tension is applied

**Advantages:**

This is quick, individual mouth splint that many times can be removed and placed by the client. Verbal communication is maintained while wearing the splint. Splint can be used at night during sleep. This splint can be used with custom facemasks and with neck rings or neck splints and with custom pressure garments.

**Disadvantages:**

Instructing client/family to appreciate the low load tension application and the effect of scar and soft tissue elongation in using this device is often a challenge to increasing appropriate compliance and tolerance.

**Indications:**

This splint can be used with small wounds on the face, or immediately following wound closure.

**Precautions/contraindications:**

Large or multiple wounds along the lips that would potentially necessitate further wound breakdown and lip degradation.

**Clinical Reasoning:** This splint is used soon after healing of lips has occurred, however, wounds can be present on the face, cheeks and used with this device. I use this splint when the mouth edges, corners began to exhibit lack of form.

In addition, to obtaining quick results for the client, frequently they can appreciate an increase in mouth opening within 30 minutes of use; the splint can be worn and verbal communication can occur. With some clients, initially, they may exhibit some drooling, however, this forces greater lip muscle function and results in improved lip form and appearance.

This splint can easily be donned and doffed by client or family member. When a client uses the splint during nap or night time, I encourage use of moist washcloth over the mouth, lips to prevent drying to the enamel of the teeth.

**Level of Therapist Skill / Specialization Required:** Intermediate; knowledge to understand general mouth, soft tissue elongation and use of thermoplastics.

**Total Time Required to Fabricate Splint / Device:** Approximately 20-30 minutes, frequently in less time depending on the level of skill of the therapist.

**Primary reference:**

Denton BG, Shaw SE. Mouth conformer for prevention and correction of burn scar contracture. Phys Ther 1976;56:683-6

Fisher S. and Helm P., Comprehensive Rehabilitation of Burns, Williams & Wilkins, 1984, pp. 64-176.

Richard R., Staley M., Burn Care and Rehabilitation Principles and Practice, F.A. Davis Company, 1994. Pp. 254.

Christiansen, C H., Matuska K. M., Ways of Living, AOTA Press, 2004. Pp. 285-315.

**Supporting references:**

Dougherty ME, Warden GD. A thirty-year review of oral appliances used to manage microstomia, 1972-2002. J Burn Care Rehabil 2003;24:418-31.

Malick M., Carr J.A., Manual on Management of the Burn Patient, Harmonville Rehabilitation Center, 1982.

*If you have any questions about the design of the splint or comments about the fabrication, please email Sandy at: [sandy@capabilities4living.com](mailto:sandy@capabilities4living.com)*

This month's splint submission provides the burn therapist with another mouth splinting option to add to their arsenal of splints that can be utilized to manage probably one of the more challenging splinting problems – microstomia. From a clinical perspective, helping the burn survivor effectively deal with the devastating impact of not only scar hypertrophy but potentially impacting speech, communication and nutrition, the effect of microstomia has multiple pitfalls and we, as therapists, need a full range of splinting interventions to counteract the effects of the scar but also accommodate the self-worth and self-image of the patient with a combination of static, static progressive and dynamic splinting options that will allow for motion and speech while still inhibiting the scar.

We are honored to have Sandy bring this submission to the web site and share some of her extensive burn knowledge and clinical gems with all of us. Sandy had this to say about this device and this courageous burn survivor:

*"I received this little guy within 2 days of discharge from his admitting hospital out of state. Neither family nor therapist could get a spoon into his mouth as the opening was too small. So, I whip out the splint and less than 2 weeks, the spoon was going into the mouth with relative ease. Of course, now he does pretty much feeds everything feeding and drinking himself - including climbing trees. This is another reason I use this splint so frequently, I can 'whip' it out quickly and obtain results quickly, which motivates the client to using the device and increases consistency and compliance."*