How to make a comfortable 6-tooth upper anterior splint.

by Dr Mark Spencer

**Background:** A conventional full-coverage Michigan-type splint is often prescribed for the treatment of bruxism and temporomandibular (TMD) disorders. However, some patients find this type of splint to be bulky and uncomfortable and ask what the alternatives may be.

**A solution:**
The author has found a simple, easy-to-construct, 6-tooth upper anterior splint has high patient acceptance for comfort and ease of use. It can be extremely helpful for the situations outlined below.

**Indications:**
The splint has many indications for use, in common with other small anterior splints such as the NTI-tss device. These include:

- Acute pain or dysfunction associated with the jaw muscles.
- One or more posterior teeth suffering occlusal trauma with associated pulpal hyperaemia or reversible pulpitis often with accompanying traumatic periodontitis.
- Tongue or cheek trauma as a result of parafunctional biting activity.

**Technique:**

*Preparatory stage.*

1. Take an alginate impression of the upper anterior teeth using a full maxillary tray or a half-maxillary tray. (It is not necessary to take an impression of the lower teeth).

2. Pour up a stone model of the impression.

3. Draw the desired splint outline on the model. The splint should cover approximately half the labial surface of each anterior tooth and extend over the incisal edge to the palatal surface and onto the palate for a short distance (see diagram opposite).

4. Use a vacuum- or pressure-forming machine to adapt a 2 mm thick thermoplastic sheet (example product Erkodur-bz - Erkodent) to the model.*

*(Erkodur-bz has a thin film of polyethylene on the side facing the model which acts as a spacer. The film stays in place whilst the sheet is heated and adapted to the model. Once this process is finished the film is removed giving a splint that fits snugly, but not too tightly, in the mouth).

5. Remove the model and splint from the forming machine and trim to shape. A heated wax knife can be used for this purpose. >>

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Technique (cont):
6. Remove the spacer film from inside the splint.
7. Using a fine, soft, elastic polishing disc (example product Lisko Polishing Discs - Erkodent) smooth the edges then polish the splint lightly with a fine abrasive on a polishing mop.

Fitting stage.
1. Try the splint in the mouth and check for a comfortable and accurate fit. It should fit snugly but not be too difficult to remove.
If need be the splint can be made easier to remove by shortening the length of the facial coverage on the anterior teeth.
2. Check the bite. At least 4 of the lower anterior teeth should occlude evenly with the splint surface.
3. Look at the degree of steepness of the palatal-surface section of the splint. It should allow the patient’s lower teeth to slide easily into a protrusive position. Rely on the patient’s feedback to assist in making adjustments in this area.
(Th e operator can also feel the joints to check that the condyles are sliding down the surface of the glenoid fossa quite smoothly).
4. Provide a small plastic denture or mouth-guard box to prevent loss of the small splint.

Patient instructions:
Instruct the patient to wear the splint at night during sleep and also (if needed) in those periods during the day when the patient is aware he or she is bruxing or experiencing temporal headaches. Although quite aesthetic, the splint is not designed to be worn continuously throughout the day and night.

Example case:
Left: The 6-tooth upper anterior splint in place. There is even contact of the lower anterior teeth with the splint. In all cases the lower teeth should be able to move easily into a protrusive position without discomfort.

Source: www.dentaloutlook.com.au
Summary:
The advantages of the 6-tooth anterior splint over a full-coverage ‘stabilisation’ splint are:
• The relative ease and simplicity of fabrication, and adjustment of the splint in the mouth.
• The small, compact nature of the splint makes it comfortable to wear and assures greater patient compliance.
• With a full-coverage splint, if a patient sleeps on his or her side or front, the jaw may be distorted slightly and cause the posterior teeth to touch the splint in an uneven fashion. This may trigger untoward activity in the muscles of mastication and negate the benefit of wearing the splint.

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