



# A Clinical Technique for Uninterrupted Eruption of Mandibular Premolar During Twin Block Appliance Therapy

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## Abstract

Functional appliance therapy is frequently indicated in the mixed dentition to restore normal function and to correct skeletal discrepancies. Twin block is the most widely used functional appliance, with excellent clinical results and very good clinical compliance.

It consists of a maxillary and mandibular bite blocks at an incline and is designed for full time wear. We have devised a simple procedure to overcome this problem. By adding modeling wax or dental stone over the occlusal surface of an erupting tooth before acrylisation of the twin block will solve the problem..

**Keywords:** Mandibular Premolar, Twin Block, Clinical innovation

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## INTRODUCTION

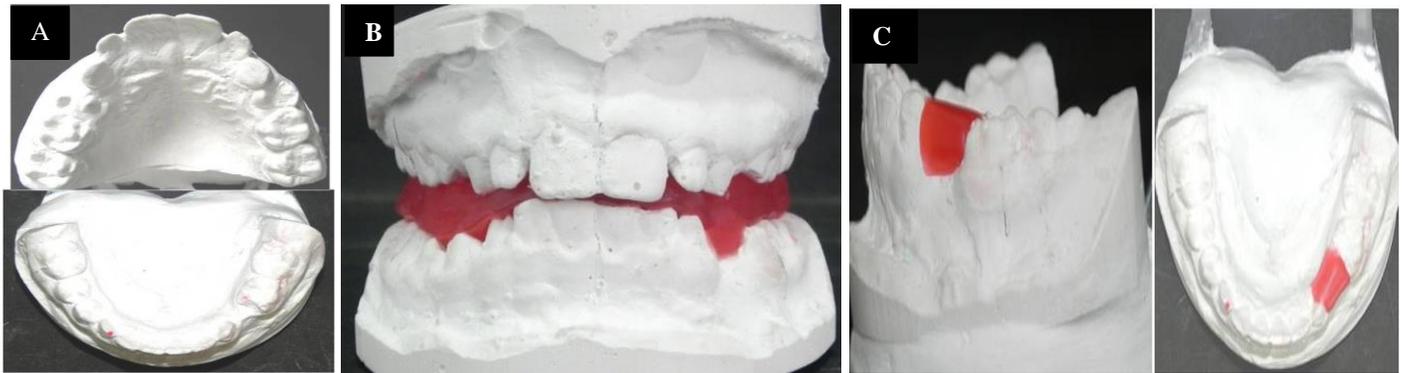
Functional appliance therapy is frequently indicated in the mixed dentition to restore normal function and to correct skeletal discrepancies. Twin block is the most widely used functional appliance, with excellent clinical results and very good patient compliance.

It consists of a maxillary and mandibular bite blocks at an incline and is designed for full time wear.<sup>1</sup>The upper inclined plane is angled from the mesial surface of the upper second premolar to the mesial surface of the upper first molar. The flat occlusal portion then passes distally over the remaining upper posterior teeth in a wedge shape. The inclined plane on the lower bite block is angled from the mesial surface of the second premolar or deciduous molar at 70° to the occlusal plane. Buccolingually the lower block covers the occlusal surfaces of the lower premolars or deciduous molars to occlude with the inclined plane on the upper bite block. This extension of the lower bite block may cause hindrance in the eruption of premolars in cases where deciduous molars are about to exfoliate or already have been exfoliated. Covering the occlusal surface of an erupting premolar for fabrication of lower bite block prevents the eruption of tooth until twin block appliance wear is discontinued. We have devised a simple procedure to overcome this problem. By adding modelling wax or dental stone over the occlusal surface of an erupting tooth before acrylization of the twin block will solve the problem.

This clinical innovation can be used efficiently, in maxillary anterior cross bite cases where posterior bite plane is advised to disocclude the anterior teeth but some of the posterior teeth are still in eruption phase due to mixed dentition.

## INNOVATION REPORT

Maxillary and Mandibular working model was prepared. Mandibular model showing exfoliated left deciduous first molar Figure 1(A). Bite registration was done for the fabrication of Twin block appliance (Figure 1(B)). After articulation of the casts, wax bite was removed and a block of modelling wax (for cold cure appliance) was adapted over the exfoliated deciduous first molar area up to the occlusal level of adjacent teeth Figure 1(C).



**Figure 1.** (A): Maxillary and Mandibular working model. Mandibular model showing exfoliated left deciduous first molar. (B): Bite registration was done for the fabrication of Twin block appliance. (C): After articulation of the models wax bite was removed and a block of modeling wax was adapted over the exfoliated deciduous first molar area up to the occlusal level of adjacent teeth.

Acrylization of appliance was done. Wax present in the mandibular first premolar tooth region will not allow the acrylic to fill the area of erupting tooth Figure 2 (A). Thus creating sufficient space in the region of first premolar tooth that will provide uninterrupted eruption of tooth without disturbing the inclines of the lower bite block during the period of appliance wear Figure 2 (B & C).



**Figure 2.** (A): Frontal and left lateral view of the Acrylized appliance after removing the wax block. (B): Space present in the region of mandibular first premolar tooth will provide uninterrupted eruption of tooth during the period of appliance wear. (C): Occlusal and lateral view of the mandibular bite block.

## DISCUSSION

Growth modification by twin block has several advantages like it is well-tolerated by patients, robust, easy to repair and is suitable to use in the permanent and mixed dentition, does not interfere with speech or daily routine activities<sup>2</sup>. Depending on individual patient's requirement various modifications have been proposed to achieve desirable skeletal and dentoalveolar changes.

This clinical innovation highlights the modifications of twin block during appliance fabrication, so that acrylic in the area of exfoliated deciduous teeth does not hinder with insertion of twin block appliance or with eruption of corresponding permanent tooth. Conventional Twin block appliance covers the occlusal surfaces of all the posterior teeth. At each appointment acrylic has to be trimmed progressively to allow eruption of permanent tooth, this unnecessarily increases the chair side time during follow up visits. Modification done during appliance fabrication saves chair side time during appliance adjustment.

## REFERENCES

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