

Letter to Editor

“3D bite”: A new appliance device for registration of construction bite

Madam,

Taking an accurate construction bite is an essential part in the fabrication of functional appliances.^[1] Up to now, a number of devices and techniques have been proposed to make bite registration easier, but none of them have been able to control the position of the mandible in three planes of space.^[2,3] The device that we have designed controls the position of the mandible in three planes (i.e., transverse, sagittal, and vertical); also, it can show the numerical amount of advancement, bite opening, and midline displacement. Using this device, the clinician will be able to determine the desired mandibular three-dimensional position and the patient will not have anything to do other than biting in a predetermined position, offered by the device. This is very comfortable for the patient and a minimal amount of patient cooperation is needed. This device is especially useful in patients with mandibular transvers or vertical deviation, such as hemifacial microsomia. Also, in growth modification clinical studies, this device is compatible for accurately measuring the amount of mandibular displacement for the registration of construction bite.

HOW DOES IT WORK?

After a thorough examination of the patient, and according to the treatment concept and patient's need, the clinician decides to advance the mandible for x mm to open the bite for y mm and to displace the midline z mm. By moving the upper part [Figure 1a-number 1] against the lower part [Figure 1a-number 2], the clinician can obtain x mm of advancement and this number is shown in the anteroposterior ruler [Figure 1a-number 3] located on the upper part. A vertical opening can be obtained by opening the screw [Figure 1a-number 4] and the amount of bite opening is shown by the vertical ruler [Figure 1a-number 5]. Midline correction can be done by locating the upper midline blade

[Figure 1a-number 6] between upper centrals moving the transverse bar [Figure 1b-number 7] through its sheath [Figure 1b-number 8]; the amount of midline shift is shown on the top of the transverse bar. Then the clinician adds a bite wax to the device [Figure 2a] and lets the patient bite by locating his or her incisors in the groove [Figure 2b]. Now the wax is ready to be sent to the laboratory. The main advantages of our device include the following:

1. It controls the position of the mandible in three planes (sagittal, transverse, and vertical)
2. The amount of anteroposterior advancement, vertical opening, and lateral shift is not limited.
3. It can hold the mandible forward during cooling of the wax.
4. There is a minimal need for patient cooperation.
5. Numerical amount of change can be determined.
6. The clinician can separate fork and wax and send it to the laboratory for the fabrication of a functional appliance.
7. Less chair time
8. It is very useful in clinical studies that address functional appliances because of its numerical documentation and high reproducibility.

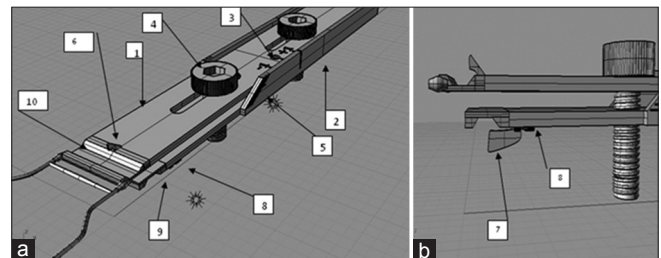


Figure 1: (a) Schematic oblique three-dimensional view of the device that explains different components. (b) Lateral schematic view of the anterior part



Figure 2: (a) Calibrated appliance is ready to come together with the fork and wax. Then it is ready to use. (b) The patient has located her front teeth in the predetermined position. Note the vertical, horizontal, and anteroposterior control of the appliance

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REFERENCES

1. Clark W. Design and management of twin blocks: Reflections after 30 years of clinical use. J Orthod 2010;37:209-16.
2. Forty MJ, Ferguson JW. Re: Modification of a bite registration device. Br J Orthod 1999;26:246.
3. George PT. A new instrument for functional appliance bite registration. J Clin Orthod 1992;26:721-3.

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