

## LETTERS TO THE EDITOR

Comments regarding: Kim KA, Oh WS, Lee JJ. Recording an accurate maxillomandibular relationship by adding vertical stops to the occlusal rims. *J Prosthet Dent* 2019;121:242-245.

### Dear Editor:



We read the article entitled “Recording an accurate maxillomandibular relationship by adding vertical stops to the occlusal rims” by Kim et al<sup>1</sup> with great interest. Different methods of registering centric relation have been described<sup>2-4</sup>; the most common method being the wax record procedure.<sup>2</sup> However, there have been contradictory reports on recording centric relation by this technique.<sup>5-7</sup> Uneven contact in the occlusal rims can result in uneven pressure on the denture-supporting tissues and subsequent errors in centric relation recording as stated by Gysi.<sup>6</sup> Therefore, equalization of contacts on the denture-supporting areas or, more precisely, equalization of vertical contacts has been considered as a basic requirement for recording centric relation.<sup>8</sup>

In the technique proposed by Kim et al,<sup>1</sup> a nonuniform contact between the wax occlusal rims was corrected by placing dome-shaped baseplate wax as vertical stops on the occlusal surface of the mandibular occlusal rims. However, we feel that closing on 4 isolated wax vertical stops will create a nonuniform distribution of pressure on the underlying denture bearing mucosa, thereby defeating the concept of obtaining equalized and uniform contact. Moreover, the length of time to complete this action and relative difference in softness of wax on both sides may also affect the accuracy and reliability in recording centric relation.<sup>2</sup>

In our opinion, centric relation records should be made with accurately fitted and stable trial denture bases<sup>8</sup> having uniform contact of wax occlusal rim throughout the occlusal table under minimal pressure.<sup>2</sup> Attempts to make uniform occlusal contact by introducing noncontinuous wax interferences in the form of 4 dome-shaped elevations that contact only in the posterior region of the rims further complicates the basic concept of recording centric relation. We suggest that the authors objectively validate their technique in terms of precision achieved in recording

centric relation by this method before it can be advocated.

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### Reply:



The occlusal rim should ideally demonstrate a uniform contact for the registration of maxillomandibular record. Even contact should be applied during the recording procedure to avoid displacement (or distortion) of the record base.<sup>1</sup> However, attainment of the ideal pattern of uniform contact is a challenge.

One common clinical procedure includes creation of space in the posterior segment between the maxillary and mandibular occlusal rims.<sup>2</sup> The vertical stop is established in the anterior segment of occlusal rims to maintain the occlusal vertical dimension. However, the record base can be displaced unless the stability of the record base is ensured during the closure of the

mandible.<sup>1</sup> For the registration of occlusal record, wax is placed to fill the gap created in the posterior segment of occlusal rims. This procedure is practical and convenient.

The method of creating dome-shaped vertical stops requires establishment of occlusal vertical dimension by means of wax occlusal rims. The height of the occlusal rim is slightly reduced to create a relatively even space (approximately 1 mm) between the maxillary and mandibular occlusal rims. The vertical dimension is reestablished by using wax by building dome-shaped vertical stops on the first premolar (or canine) and molar areas across the arch.

This technique embraces the principle of keeping the record base stable by means of quadrilateral contacts established in the anterior and posterior segments of occlusal rim. The anterior stop can be established near

the curvature of the arch (canine first or premolar sites) to avoid pressure in the anterior segment of the ridge. This method can be particularly advantageous when involving excessive movable tissue in the anterior segment and using a silicone occlusal registration material with minimal viscosity. However, care is needed to avoid pressure buildup while building the vertical stops and making the occlusal record.

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