



Centric Relation is Enigmatic

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Abstract

Centric relation is a posterior superior position of the condyles to the joint processes. Centric occlusion is where the teeth meet in occlusion. Centric relation is an open spatial position whereas centric occlusion is a forward closed position. The teeth meet in centric occlusion.

Keywords: Centric occlusion, Centric relation, Occlusion, Articulation.

Centric relation is a repeatable starting point for restoring dentitions [1]. Cusps and fossae of teeth are designed to fit into one another (**Figure 1**) [2]. Centric relation records of

condylar positions take much time and expertise to develop [3]. Three dimensional articulators accept centric relation records.

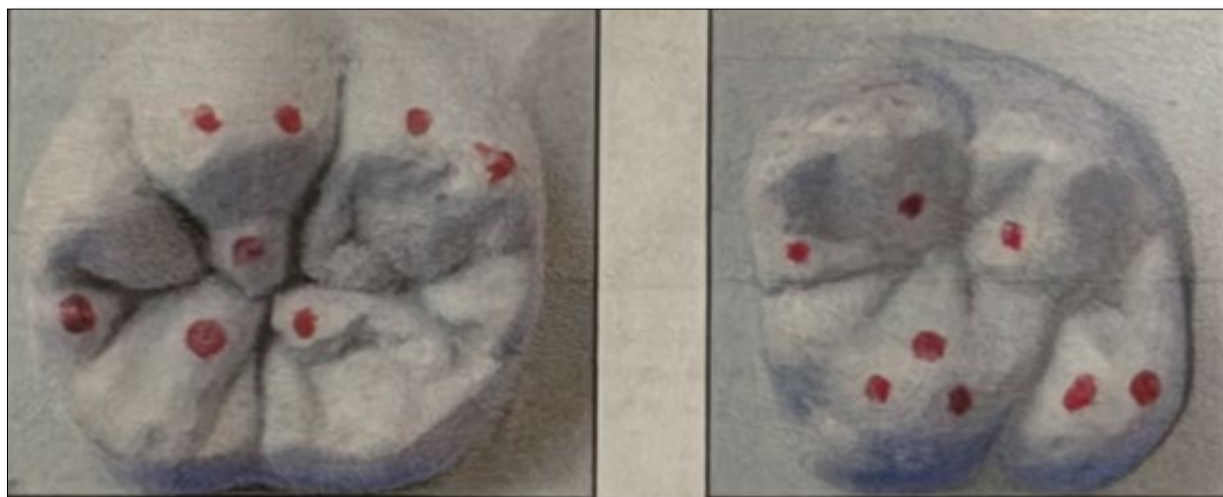


Figure 1. Where do these near perfect teeth fit? We advocate for ideal cusp and fossa positions which rarely fit in clinical situations? Ceramic restorations do not adjust to such intimate pairing.

In the far past restorative dentistry was performed using low speed hand pieces. Drilling was laborious. Restorative cases were done one at a time. The dentist often did the laboratory work. Carving waxes were developed for specific waxing procedures [4]. Occlusal oriented waxed crowns were invested and cast into gold [5]. The occlusion was built on the cusp fossa principle. The cusp fit into the fossa in the centric relation position. Today we use porcelain which cannot replicate the fine points of wax [6]. Cusp to fossa fit is not as specific as with cast gold. Stamp cusps are often used to make occlusal contact. When a completed full mouth restoration does not fit or almost fits into a patient's occlusal scheme then what is the outcome? Everything looks good on the articulator but the questions arise as to whether the centric relation records were accurate and the transfer to the articulator was precise? There are no occlusal records. Successful restorations are measured by

clinical longevity. In all of the commercially driven classes on occlusion students are taught how to find and “capture” centric relation [7]. Attendees pay to play. Commercial courses cost time and money. Participants buy everything and anything to “capture” centric relation [8]. However capturing centric relation may not work the same way in clinical practice. Ceramics don't break and implants can become loose.

Received: September 27, 2026; **Revised:** September 30, 2026; **Accepted:** October 01, 2026

Citation: Millstein PL. (2026) Centric Relation is Enigmatic. J Oral Health Dent Res, 5(3): 1-2.

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Teeth can move, jaws can hurt and a general malaise can develop. Without any occlusal records the proof of recording a proper centric relation becomes a conversational topic. Dentists should rethink of how they

record jaw positions before sending the records to the dental laboratory. No laboratory can afford repairs and remakes. Dentists do not keep occlusal records. They wait for things to break (**Figure 2**).



Figure 2. This pattern of worn occlusion is broken. All white areas represent occlusal or near occlusal contact. How does a clinician restore the occlusion? What does the surface of a new restoration look like? Is it made in occlusion or just slightly under occluded? Lack of a stable occlusal contact will create further instability.

Does TMJ pain ensue or does facial pain develop? To make a centric relation record in fifteen minutes time is not possible because the joint is worn and the cartilage damaged. Often times we cannot take a precise bite. An alternative procedure may be used to restore the vertical dimension and then take a bite followed by a functionally generated path procedure [9]. Most rules for occlusal restoration were written many years ago for the edentulous patient. Today there are dentulous patients but we still apply the same rules. Basically there is little clinical research on occlusal function. The effects of trauma from the occlusion are mentioned but not explored. There are no occlusal records to compare past to present. Force and pressure recordings do not record occlusal contact [10]. Comparisons of occlusal records over time are essential for a better understanding of the occlusal dynamic. Without new information we will continue to follow in the footsteps of yesteryear.

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