

OCCLUSION

Principle of occlusion

Temporomandibular disorders

Occlusal disease

Osteoarthritis of TMJ

Disease of lateral pterygoid muscle (provisional name)

Disease of retrodiscal tissue (provisional name)

Centric relation

Determining of centric relation

Malocclusion

Occlusal analysis

Occlusal equilibrations

Examinations and diagnosis of occlusal equilibrations

Method of occlusal equilibrations

Case of occlusal equilibrations

Occlusal plane

Vertical dimension

Smile design

Anterior guidance

Long centric

Bruxism

Noise of TMJ

Occlusal splint

Ideal occlusion



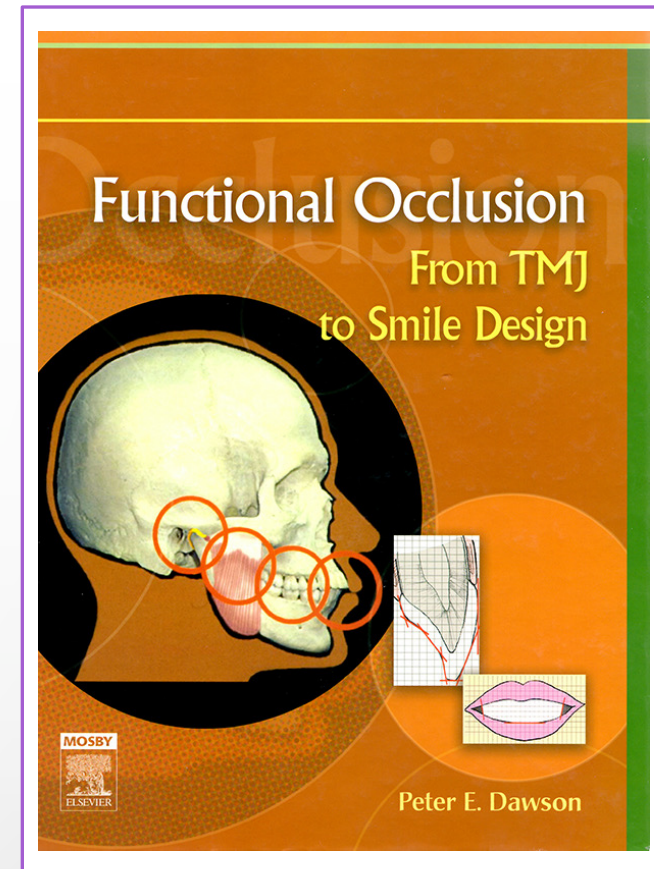
(OCCLUSION)

Centric relation

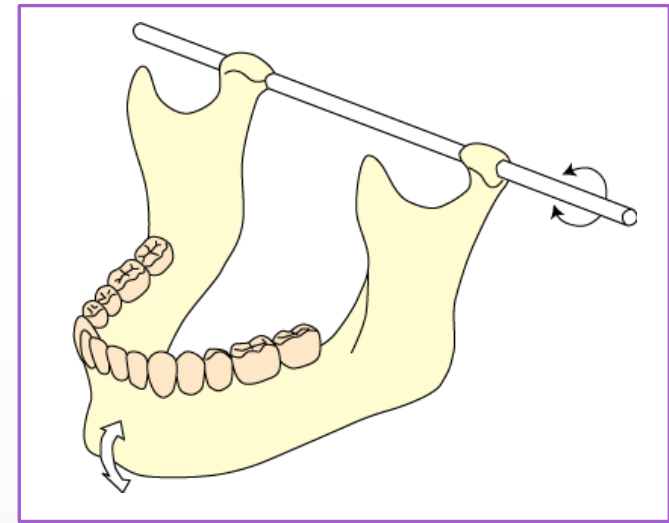
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(Centric relation)



1. What is the centric relation

Dawson discusses centric relation as the most important topic in chapters 7 through 11 of Functional Occlusion.

The centric relation is the position of the upper and lower jaws in the most stable state of the temporomandibular joint, not the position in which the mandible is fixed, but the position of the lower jaw in relation to the upper jaw in which the left and right mandibular condyles are in the most stable position in their respective mandibular fossa and the mandible can rotate stably around the left and right temporomandibular joints, as shown in the upper right illustration.

It is not easy to master all of the discussion on centric relation, as Dawson goes into great detail in numerous pages on centric relation. However, it is not difficult to diagnose a patient suffering from an improper bite and correct the patient's bite to a healthy state. Patients who have achieved a bite suitable for the centric relation state that their bite is easier the moment they achieve it. We invite you to learn the centric relation and help patients suffering from malocclusion.

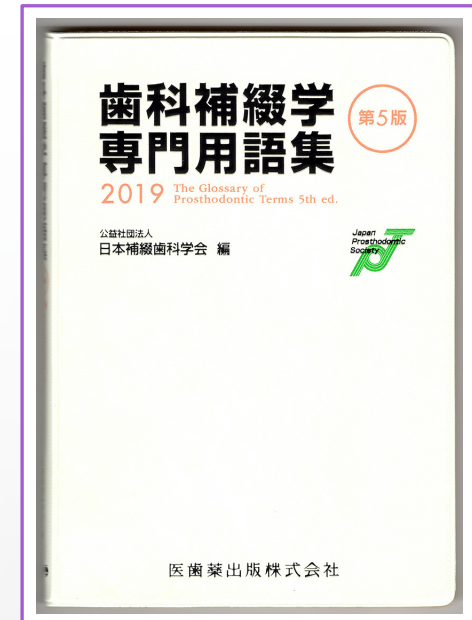


(Centric relation)

2. Views of the Japanese society of prosthetic dentistry

The Japanese Society of Prosthodontics only introduces the description of the GPT-9 (THE GLOSSARY OF PROSTHODONTIC TERMS Ninth Edition) regarding the centric relation and avoids presenting its view on the centric relation as an academic society. It also makes the mistake of equating seven different definitions from different eras. Furthermore, he even states to the CMS that “the use of a term with diverse nuances is inappropriate as a technical term and should be discouraged.” This attitude ignores the theoretical progress and development of the centric relation, without understanding the discussion on the centric relation that has been cultivated by our predecessors.

For these reasons, the Japanese Society of Prosthodontics has failed to demonstrate how it recognizes the centric relation and how it is applied in clinical practice. It must be said that the Japan Prosthetic Dental Association’s view of the centric relation is far from the international standard.

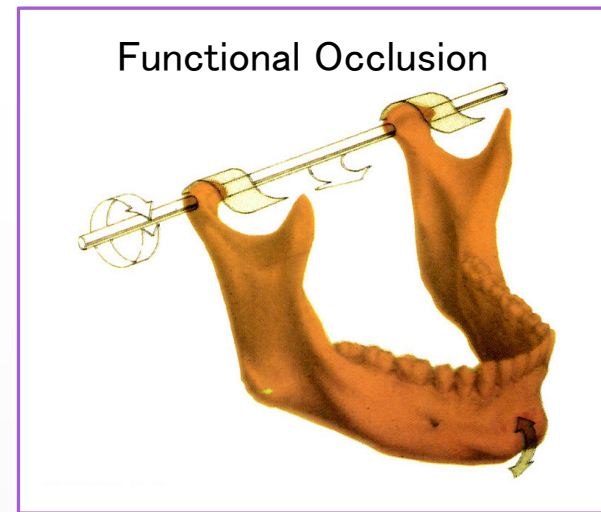


(Centric relation)

3. Understanding of centric relation

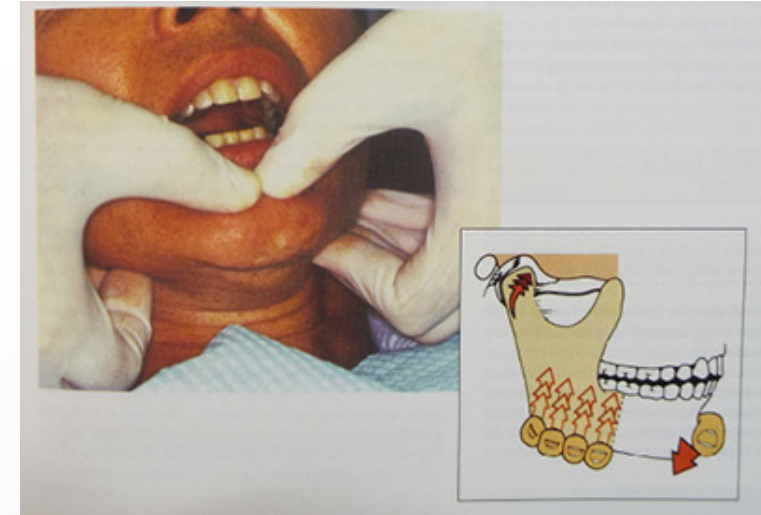
Since its introduction by Schuyler in 1935, the centric relation has been discussed by many researchers, and various definitions and methods of obtaining the centric relation have been proposed. However, the basic concept that the centric relation is the most appropriate mandibular position controlled by the temporomandibular joint and not influenced by the occlusion of the teeth has not changed since Schuyler's introduction of the centric relation. It is most important to understand this basic concept.

In his book, Dawson describes the centric relation as follows: "The centric relation is the most important factor in occlusion. The centric relation is the most important factor in occlusion. Determination of centric relation is the most important skill required for predictable occlusal treatment. Verification of centric relation is an essential procedure in differential diagnosis of TMJ disorders. Recording of an accurate centric relation is critical for the most cost-effective, time-effective, trouble-free restorative or prosthetic dentistry."



(Centric relation)

4. Method of obtaining the centric relation



Functional Occlusion

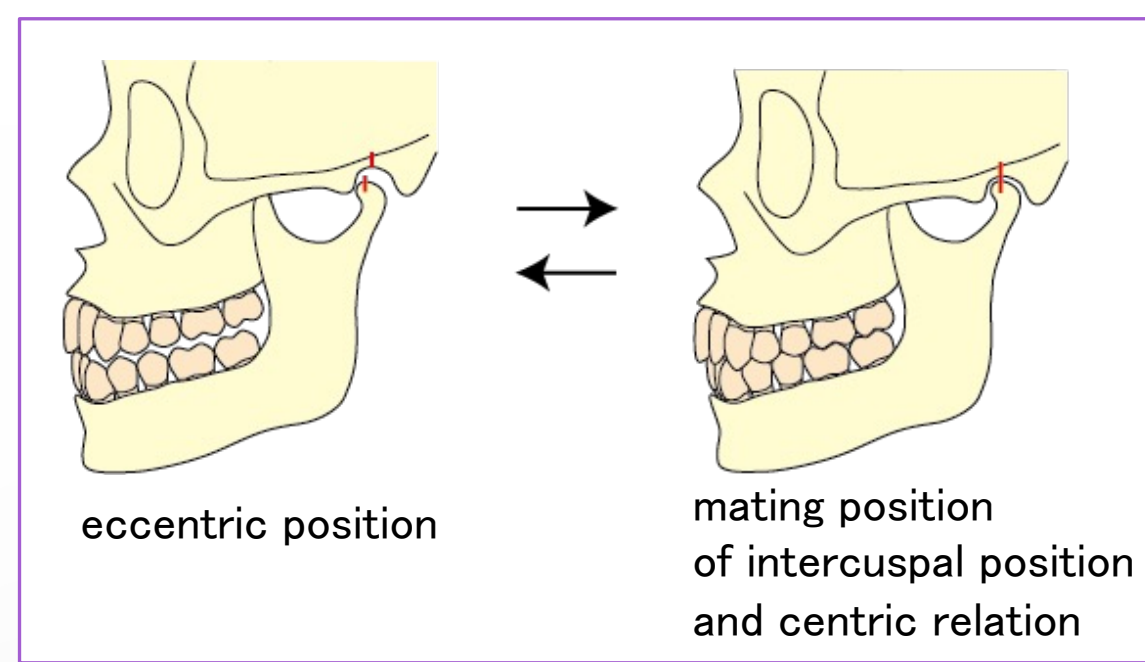
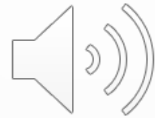
Many methods have been developed for obtaining the centric relation. However, Dawson's method, or bilateral manipulation, is currently the most highly regarded internationally. Bilateral manipulation will be discussed at another time.

On the other hand, if the patient understands the centric relation, he or she will be able to guide the mandible into the centric relation by himself or herself. As a result, diagnosis and treatment can proceed easily and accurately. Therefore, when obtaining the centric relation, it is necessary to explain to the patient that this position of the lower jaw is the most convenient for the temporomandibular joint, so that the patient understands the centric relation.



(Centric relation)

5. Intercuspal position and centric relation



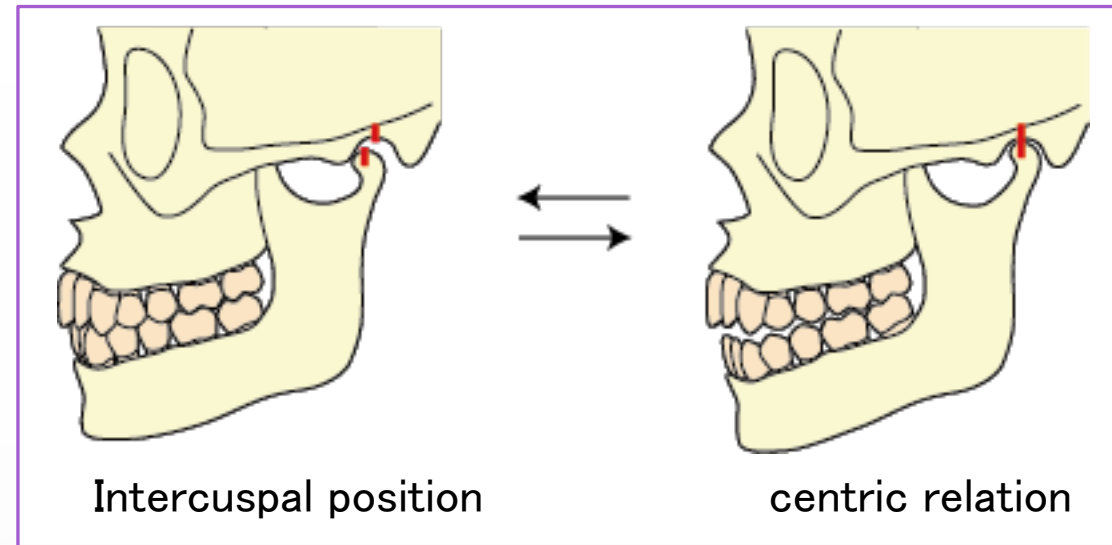
The Intercuspal position is the mandibular position in which the upper and lower jaw teeth are in the most stable contact in the greatest number of places. On the other hand, the centric relation is the mandibular position where the left and right mandibular condyles are most stable in the mandibular fossa. Therefore, the two mandibular positions can be obtained for one patient.

In the case of normal occlusion, as shown in the upper right illustration, when the mandible is returned from the centric relation to the intercuspal position, the intercuspal position and the centric relation coincide. In this case, the patient can bite down strongly on food while the temporomandibular joint is stable. In other words, if the intercuspal position and the centric relation coincide or there is only a slight difference between them, it is considered to be normal.

(Centric relation)



6. Intercuspal position and centric relation are misaligned



As shown in the upper right illustration, if the intercuspal position and the centric relation are misaligned, the mandibular condyle is shifted from the centric relation in the intercuspal position. If the mandibular condyle is moved to the centric relation, the upper and lower jaw teeth will be displaced from the intercuspal position and only some of the teeth will be in contact. As a result, the temporomandibular joint and teeth are subjected to various burdens and disorders. In other words, identifying the positional misalignment between the centric and intercuspal positions provides the dentist with important information on TMD.

Since the centric relation is the base point of mandibular motion, the intercuspal position is used to determine which direction and how much the left and right mandible are displaced from that base point. In other words, without being able to confirm the base point of the centric relation, it is impossible to record mandibular movement or even to understand the mandibular movement itself.

(Centric relation)



7. Summary

In Functional Occlusion, Dawson lists the following five criteria as requirements for the mandible to be in a centric relation.

- (a) The disk is properly aligned on both condyles.
- (b) The condyle-disk assemblies are at the highest point possible against the posterior slopes of the eminentiae.
- (c) The medial pole of each condyle-disk assembly is braced by bone.
- (d) The inferior lateral pterygoid muscles have released contraction and are passive.
- (e) The TMJs can accept firm compressive loading with no sign of tenderness or tension.

By understanding these five criteria, it is possible to obtain the patient's centric relation, perform occlusal analysis and diagnosis, detect and eliminate malocclusion, and completely cure TMJ disorders.

Dentists who understand the centric relation can help patients suffering from TMJ disorders and experience firsthand the joy of patients who are completely cured.

(OCCLUSION)

Centric relation

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If you have any questions or doubts, please leave them in the public comment section below.

The next topic will be “ Determining of centric relation”.