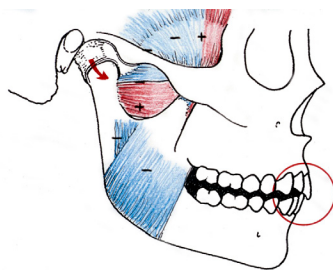


# How the Occlusal Plane Relates to the Anterior Teeth

By Peter E. Dawson, DDS

One of the most common mistakes I see in occlusal restorations is also the easiest mistake to observe. It is interference of the posterior teeth with the anterior guidance. A perfected occlusion allows the anterior teeth to contact in centric relation simultaneously, and with equal intensity with the posterior teeth. This harmony of contacts occurs with complete seating of the condyles at their most superior position, which is bone braced. This means that there is an ideal distribution of compressive contact starting at the TMJs, and continuing all the way through front tooth contact. This is the contact distribution that we want for centric relation.



**Figure 1.**

Remember that a major function of the anterior guidance is immediate disclusion of the posterior teeth.

When the jaw moves from centric relation, in a perfected occlusion only the anterior teeth contact. All posterior teeth distal to the cuspids should immediately separate (figure 1). This is called “posterior disclusion”. Separation of the posterior teeth should occur, whether the jaw moves forward or left or right from centric relation.

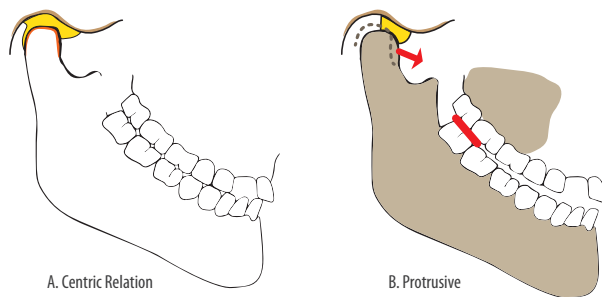
The reason that posterior disclusion is such a desired effect is because the moment the posterior teeth separate, almost all of the elevator muscles shut off.

This reduces the horizontal forces against the anterior teeth which are carrying all the forces in protrusive or lateral movements of the mandible. It also reduces the loading forces on the TMJ's. But even more importantly, it is impossible to wear or overload the posterior teeth if they cannot rub.

Posterior disclusion is an example of genius design. It is one of the reasons why we must be so careful to accomplish two goals when restoring an occlusion, moving teeth, or equilibrating an occlusion.

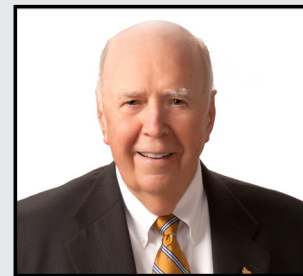
**Goal 1.** We must establish a perfected anterior guidance that is in perfect harmony with the envelope of function. (We have discussed that in other white papers). It is my experience with hundreds of patients over many years that if we get the anterior guidance correct, the anterior teeth do not wear out, get loose, or migrate out of position. It is one of the essential goals needed for long-term stability of the entire dentition.

**Goal 2.** We must make sure that the occlusal plane is designed so that posterior teeth do not interfere with the anterior guidance (figure 2). The most common mistake we see is that the occlusal plane is too high in the back. The definition of an acceptable occlusal plane is “one that permits the anterior guidance to do its job.”



**Figure 2.**

If the occlusal plane at the posterior segment is steeper than the condylar path and the anterior guidance, it is an interference to the protrusive path that is a potent cause of wear on the posterior teeth including wear on the upper lingual cusps.



**Peter E. Dawson, D.D.S.** is considered to be one of the most influential clinicians and teachers in the history of dentistry. He authored the best selling dental text, *Evaluation, Diagnosis and Treatment of Occlusal Problems*, which is published in 13 languages. His latest book is entitled *Functional Occlusion: From TMJ to Smile Design*. He is the founder of the “Concept of Complete Dentistry Seminar Series®” as well as The Dawson Academy. In addition to numerous awards and special recognitions, Dr. Dawson is the past president and life member of the American Equilibration Society, a past president of the American Academy of Restorative Dentistry and the American Academy of Esthetic Dentistry.

It is an easy observation to verify that an occlusal plane is acceptable... But the dentist must be trained to look for the posterior disclusion that a proper occlusal plane permits. Any posterior tooth contact in any jaw movement to or from CR is unacceptable (figure 3). It should be noted that there are exceptions to this rule when anterior contact cannot be achieved but that is another story.

In a perfected occlusion, placement of marking ribbon between all the teeth produces a desired pattern. If the patient is allowed to close, chop their teeth together, and then grind left, right and forward, the marks on the teeth would produce the following pattern: LINES IN FRONT..DOTS IN BACK (figure 4).

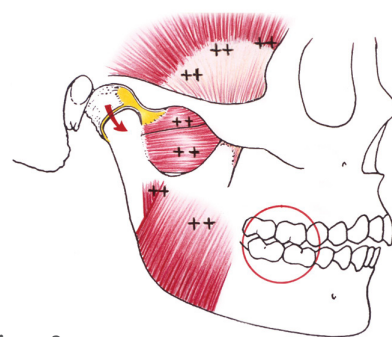
**Remember...**  
**The patient cannot wear or overload teeth that cannot rub.**

3. What a proper occlusal plane is supposed to do... can predictably produce comfortable, functional, and stable dentitions.

That formula is what we strive for whether we are equilibrating, restoring, or orthodontically repositioning the teeth in the arches.

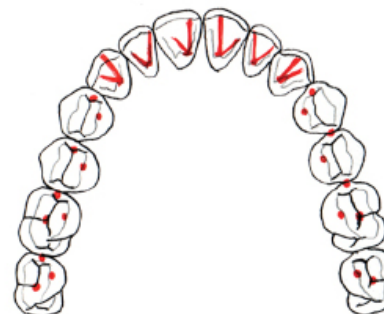
Dentists who understand the three major goals of 1. Centric relation,

2. A correct anterior guidance, and



**Figure 3.**

Posterior interferences can lead to any or all of the following conditions: overload on posterior teeth, hyperactive incoordinated muscles, a mandibular slide forward into anterior overload, excessive wear, tooth migration, and hypermobility.



**Figure 4.** The formula for a perfected occlusion