DR. PETER DAWSON’S
PHILOSOPHY OF
FUNCTIONAL OCCLUSION
Functional Occlusion
From TMJ to Smile Design

Peter E. Dawson
WHO IS PETER DAWSON?
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Peter Dawson is a dentist that specializes in the treatment of the exposed exterior surfaces of the teeth.

He is an Occlusal Doctor who treats Occlusal Disease.
“Occlusal Disease is deformation or disturbance of function of any structures within the masticatory system that are in disequilibrium with a harmonious interrelationship between the TMJs, the masticatory musculature, and the occluding surfaces of the teeth”
The goal of treatment of Occlusal Disease is the restoration of the harmony between the muscles, joints, and teeth.
BASIS FOR DAWSON'S PHILOSOPHY

**FIGURE 4-5** Formula for a perfected occlusion: dots in back, lines in front.
BASIS FOR DAWSON'S PHILOSOPHY

- Centric Relation (healthy joints and muscles)
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- Even Centric Relation Contacts on all teeth
BASIS FOR DAWSON'S PHILOSOPHY

- Centric Relation (healthy joints and muscles)
- Even Centric Relation Contacts on all teeth
- Immediate disclusion of the posterior teeth by the anterior teeth when moving out of Centric Relation (with smooth surfaces)
BASIS FOR DAWSON'S PHILOSOPHY
WHERE DID IT COME FROM OR HOW WAS IT DERIVED?
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Dr. Dawson

• Observed nature
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- Observed nature – the Masticatory System
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• Observed nature – the Masticatory System
• Deduced how it worked
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- Observed nature – the Masticatory System
- Deduced how it worked
- Recorded the rules
BASIS FOR DAWSON'S PHILOSOPHY
WHERE DID IT COME FROM OR HOW WAS IT DERIVED?

Dr. Dawson

- Observed nature – the Masticatory System
- Deduced how it worked
- Recorded the rules – put them in a book
When we look at Dawson’s “Perfect Occlusion” we see this in action.

He observed young adults and found that the majority of them had this occlusion. Therefore this must be the Perfect Occlusion.
SO WHAT HAPPENS IF WE DO NOT HAVE THE PERFECT OCCLUSION?
SO WHAT HAPPENS IF WE DO NOT HAVE THE PERFECT OCCLUSION?

We get clenching and grinding
SO WHAT HAPPENS IF WE DO NOT HAVE THE PERFECT OCCLUSION?

We get clenching and grinding

Occlusal Disease
SO WHAT HAPPENS IF WE DO NOT HAVE THE PERFECT OCCLUSION?

We get clenching and grinding

Occlusal Disease

or

Bruxism
SO WHAT HAPPENS IF WE DO NOT HAVE THE PERFECT OCCLUSION?

We get clenching and grinding

Occlusal Disease

or

Bruxism

or

Parafuntion
WHAT ARE THE CAUSES OF BRUXISM AND/OR PARAFUNCTION?

Occlusal Disease and Psychological stress
“Strong clenching of the teeth can be a normal manifestation of increased muscle tonus associated with emotional stress.”
“Even though influence from the central nervous system is a factor in habitual clenching that cannot be eliminated in many patients, it should not be a deterrent for occlusal correction.”
“The reduction of pain levels in heavy bruxers is dramatic and consistent when deflective tooth inclines are completely eliminated. Nocturnal EMG studies on my patients who were severe bruxers or clinchers sometimes showed no significant change in nighttime muscle activity after occlusal correction.”
“The cause of eccentric bruxism is not completely clear. Although considerable light has been shed on the problem, there are enough unexplained observations to indicate there is still much to learn.”
“There is no single factor that is responsible for all bruxing. It is also rather evident that there is no single treatment that is effective for eliminating or even reducing all bruxing.”
“It appears that regardless of the cause, the most effective treatment for the effects of bruxism is perfection of the occlusion. This can be accomplished in two ways:

- Directly: By equilibration, occlusal restorations, or orthodontics
- Indirectly: By occlusal splints.”
ECCENTRIC BRUXISM OR GRINDING OF TEETH

“If the occlusion is perfected, I find that the need for occlusal splints is very limited”
“It is apparent that occlusal treatment will not stop every patient from clenching or bruxing. But perfected occlusal treatment will almost always reduce the damage done to a maintainable level.”
WHAT ARE THE EFFECTS OF OCCLUSAL DISEASE ON THE MASTICATORY SYSTEM
“Teeth...can exert a unique influence on the entire interbalance of the system because if the intercuspation of the teeth is not in harmony with the joint-ligament-muscle balance, a stressful and tiresome protective role is forced onto the muscles.”
Muscle Incoordination is a causative factor in disk derangements.
PRINCIPLE

“Neuromuscular harmony depends on structural harmony between the occlusion and the temporomandibular joints”
Any part of the tooth that interferes with the structural harmony between the occlusion and the temporomandibular joints.
“It is also obvious that occlusal interferences can trigger parafunctional jaw movements that were not present before the interference was introduced”
“Correction of a restricted anterior guidance almost always eliminates the wear problem”

Thus a restricted anterior guidance is an occlusal interference.
“It is always advantageous to work out the disclusion of the posterior teeth without steepening the anterior guidance if it is possible to accomplish it, because steepening the anterior guidance restricts the existing envelop of function and triggers further parafunctional bruxing.”
“In a healthy patient with a perfect dentition, note the variety of responses that can occur if a single high restoration with deflective incline interference is placed on a second molar. There are many different ways that patients might respond to the same, specific causative factor”
1. The tooth may become sensitive to hot or cold, or it may ache
2. The tooth may become tender to biting on it
3. The tooth may become loose
4. The tooth may wear excessively
5. The mandible may be deflected around the interference into other teeth that become loosened
6. Other teeth can be abraded as the mandible is deflected forward
7. Other teeth can become sore as they are traumatized at the end of the slide
8. Forced deviation of the mandible can cause masticatory muscles to become painfully hyperactive, or even become spastic
9. Trismus may result from the spastic musculature
10. Muscle tension headaches may develop
11. The combination of sore teeth, sore muscles, and headaches may cause stress and tension
12. Constant tension and stress may lead to depression
13. The combination of the uncoordinated musculature and the deflected mandible may contribute to a condyle/disk derangement
14. Eventual displacement of the disk by uncoordinated masticatory muscle hyperactivity may initiate painful compression of retrodiskal tissues
15. Degenerative arthritic changes in the TMJ may follow disk displacement and subsequent perforation of the retrodiskal tissues
16. All of the above
17. None of the above
“It is apparent that occlusal treatment will not stop every patient from clenching or bruxing. But perfected occlusal treatment will almost always reduce the damage done to a maintainable level.”
Occlusal treatment is basically flattening the occlusion but keeping anterior guidance.