

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)

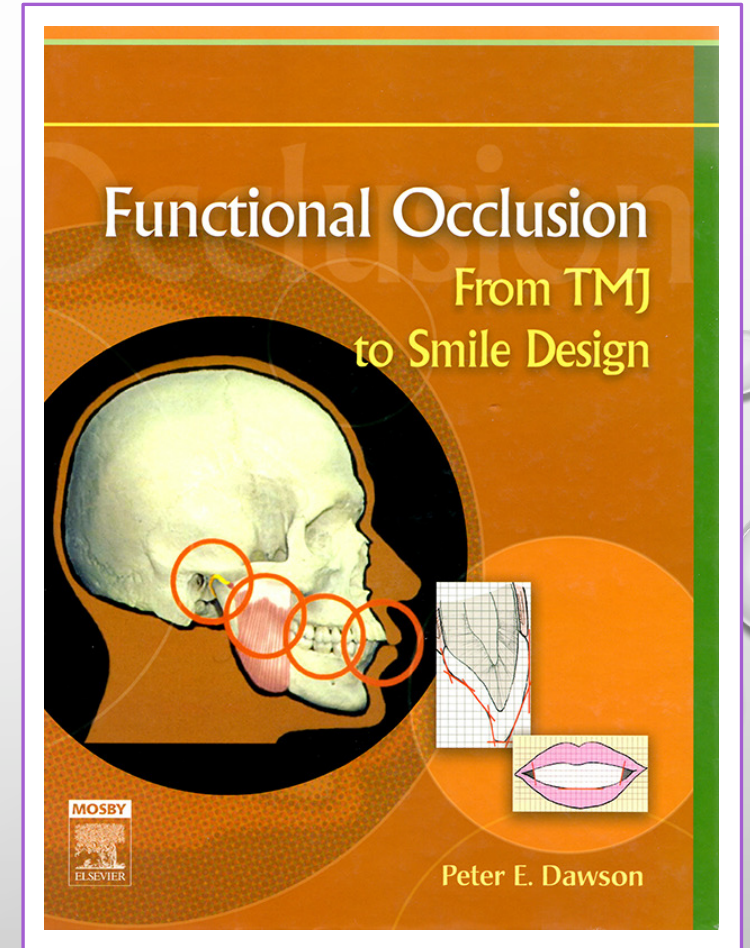
Principle of occlusion

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Summary

References



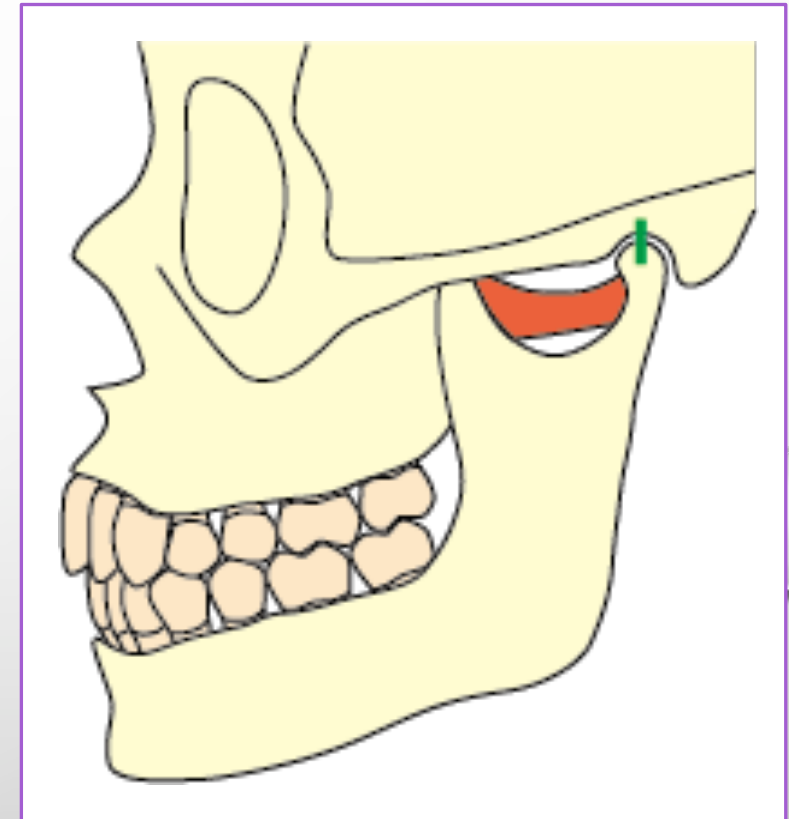
(Principle of occlusion)



1. What is principle of occlusion

Principle of occlusion is based on the understanding of the structure and function of the human masticatory system and the unraveling of the human bite mechanism. In other words, it is the functional anatomy of the human bite.

On the other hand, malocclusions can interfere with various masticatory system. Principle of occlusion provides important information for constructing treatment methods for diseases caused by these malocclusions. Dentists who understand the relationship between the occlusal surfaces and the masticatory system can diagnose malocclusions and develop treatment methods for them.



(Principle of occlusion)



2. History of principle of occlusion

Principle of occlusion was born in the late nineteenth century in the debate about the occlusion given to the artificial teeth of complete dentures. In the late 19th century, Bonwill and Spee proposed “Bonwill’s triangle” “Tripodism” and “Curve of Spee“. Around 1890, the dental community began advocating balanced occlusion as the ideal occlusion. In 1926, McCollum, Stallard, Stuart, and others founded the California Gnathological Society. As a result, Gnasology began a full-fledged mandibular movement study. Subsequently, Mutually Protected Occlusion was recognized as the ideal occlusion for natural teeth, and Organic Occlusion was recognized as the ideal prosthodontic occlusion. Furthermore, group functional occlusion was proposed as a treatment goal for crown prosthodontics.

As described above, principle of occlusion has developed to the present day as a fundamental study of dentistry. Dentists need to learn the current international standard principle of occlusion that has been developed by many dentists and researchers.

(Principle of occlusion)

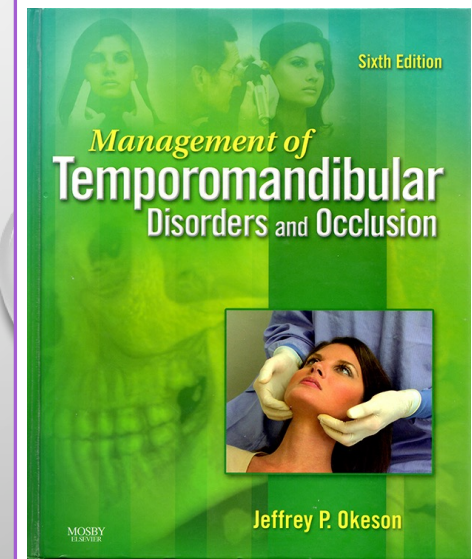
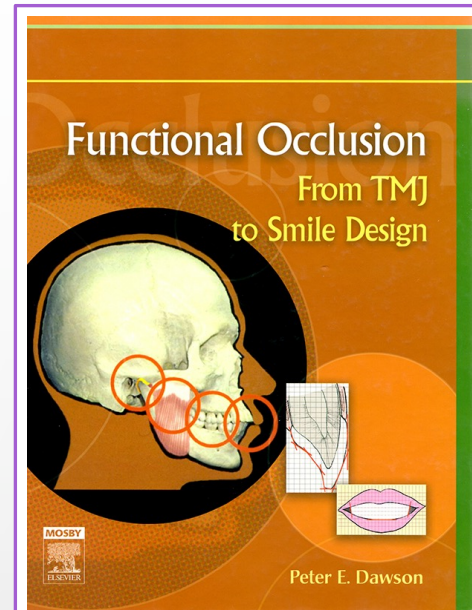


3. Current of principle of occlusion

Current of principle of occlusion has made remarkable progress, especially in the United States. In American university education, Okeson's book has been adopted as a textbook, and many dental students are being educated in principle of occlusion. Dawson, the author of *Functional Occlusion*, and his colleagues have also played an important role in the development and dissemination of principle of occlusion by sponsoring conferences and workshops at the Dawson Academy.

Current of principle of occlusion is summarized in Dawson's *Functional Occlusion*.

The absence of principle of occlusion education in Japanese dental schools has resulted in Japanese dentists lacking the knowledge necessary for diagnosing and treating temporomandibular joint disorders. This presents a concerning issue that needs to be addressed.



(Principle of occlusion)

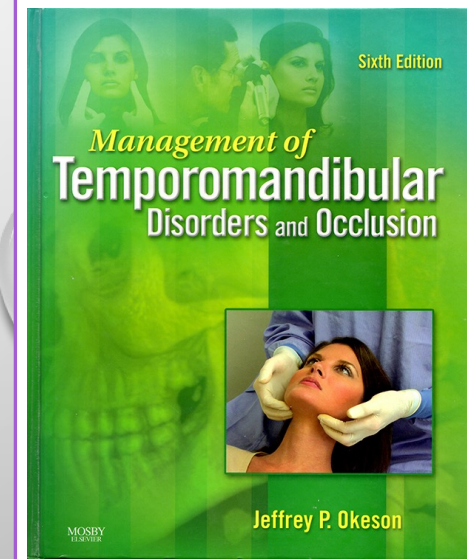
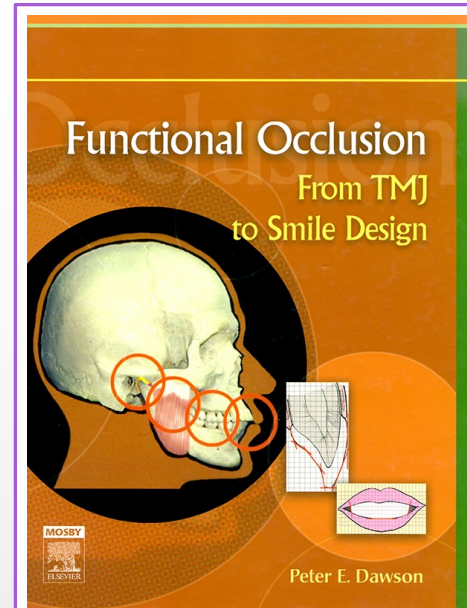


4. Significance of principle of occlusion

Principle of occlusion is relevant to all dental treatments, and its application is essential for dental care. In particular, principle of occlusion elucidates the relationship between malocclusion and temporomandibular joint disorders, making it essential for the diagnosis and treatment of TMJ issues. principle of occlusion serves as a guideline for various dental practices.

- a) Proper occlusal adjustment for prosthetic fitting
- b) Detection and correction of improper occlusion
- c) Analysis, diagnosis and treatment of occlusal disease
- d) Oral rehabilitation
- e) Proof of normal occlusion (negative diagnosis of occlusal disease)

Each of these will be explained.

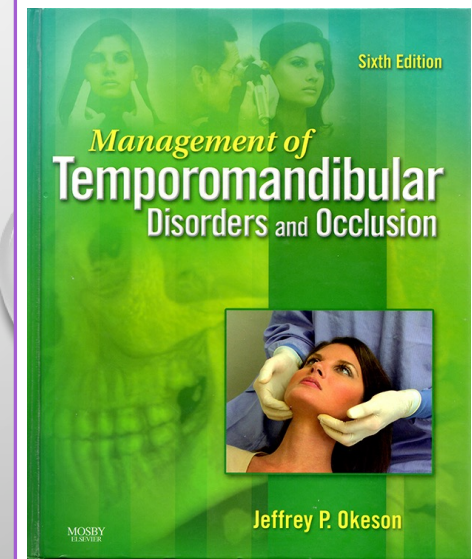
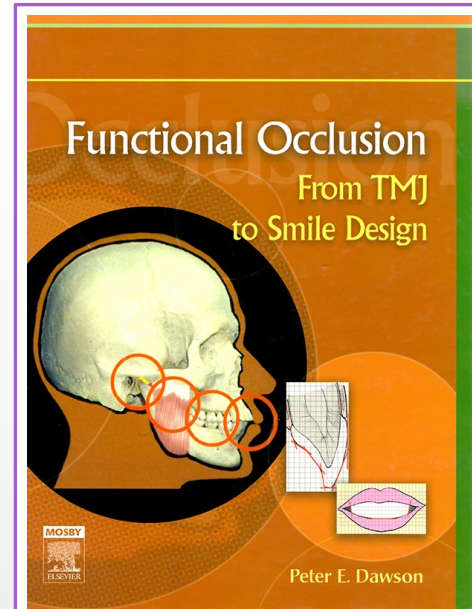


(Principle of occlusion)

4. Significance of principle of occlusion

a) Proper occlusal adjustment for prosthetic fitting

When a prosthesis is placed, occlusal adjustment is performed based on principle of occlusion. By performing occlusal adjustment based on principle of occlusion, the prosthesis will be in harmony with the patient's masticatory system, and occlusal and periodontal diseases caused by improper occlusion will be prevented.



(Principle of occlusion)



4. Significance of principle of occlusion

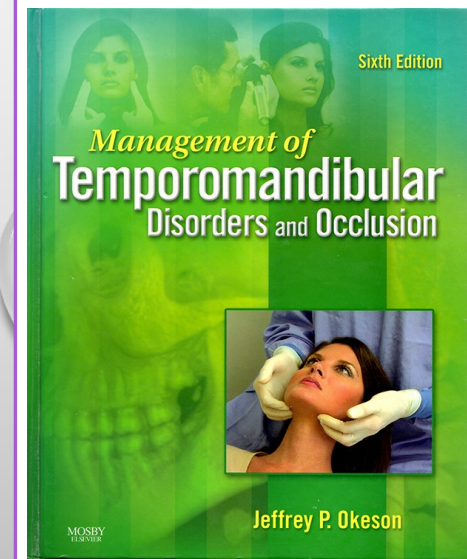
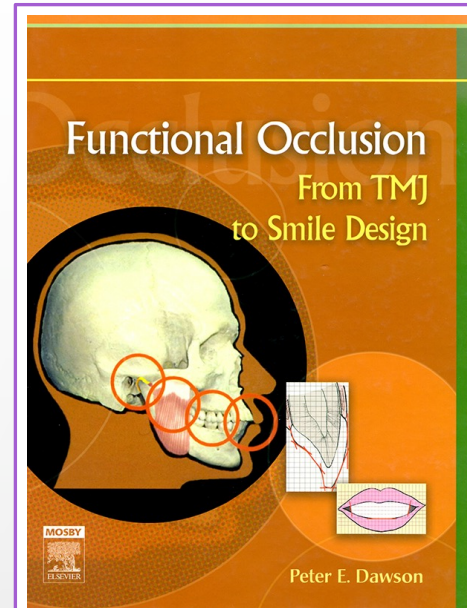
b) Detection and correction of improper occlusion

It is difficult to detect malocclusion in the following cases.

- ① Improper occlusion of prosthetics fitted by other dentists
- ② Interruption or failure of orthodontic treatment
- ③ Disorders that have developed as a result of a malocclusion

left unchecked for a long period of time

Although these malocclusions are difficult to detect, examination and analysis based on principle of occlusion can detect them. As a result, appropriate occlusal adjustments and reconstructions can be made to eliminate the malocclusion.



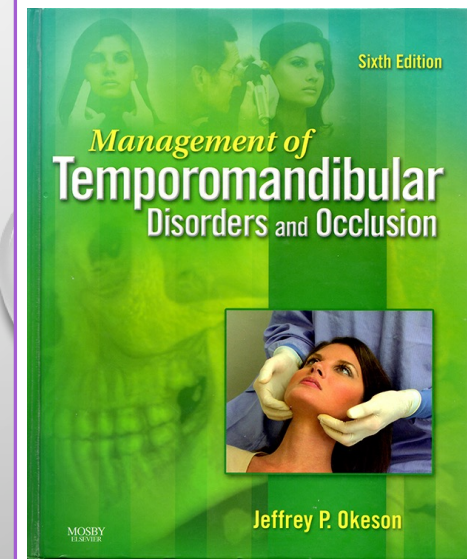
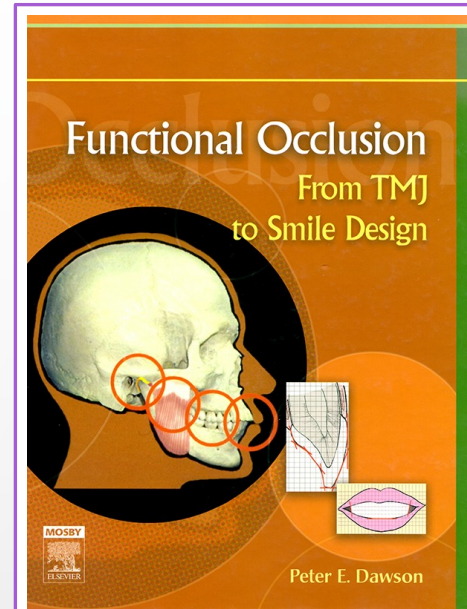
(Principle of occlusion)



4. Significance of principle of occlusion

c) Analysis, diagnosis and treatment of occlusal disease

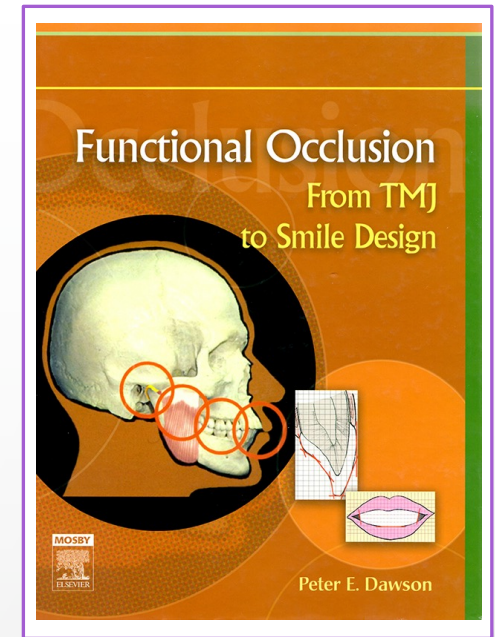
Occlusal diseases are a group of disorders resulting from functional malocclusion. Occlusion theory is essential in the analysis, diagnosis, and treatment of occlusal diseases. By acquiring principle of occlusion, dentists can examine patients with occlusal disease, identify its causes, and formulate a treatment plan.



(Principle of occlusion)



4. Significance of principle of occlusion d) Oral rehabilitation



When a patient is in need of a new occlusal reconstruction, often referred to as oral rehabilitation, the outcome of the treatment largely depends on the dentist's understanding of principle of occlusion. Some believe that the objective of such treatment is to establish an ideal occlusion. However, the treatment goal that is gaining acceptance today is to achieve an individualized, malocclusion-free occlusion for each patient. Therefore, an acquisition of advanced principle of occlusion is indispensable in the field of oral rehabilitation.

(Principle of occlusion)



4. Significance of principle of occlusion

e) Proof of normal occlusion

(negative diagnosis of occlusal disease)

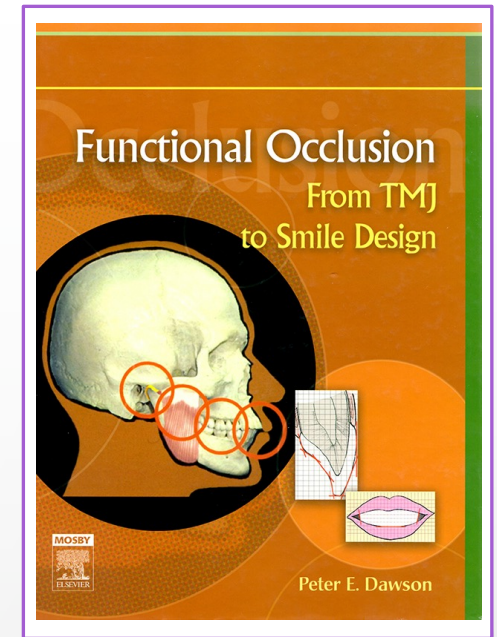
A patient might visit the clinic after being informed by a doctor from another department that their symptoms could be related to their occlusion, prompting them to seek consultation with a dentist. In such instances, the patient's malocclusion is assessed, and corrective measures are taken if necessary. However, if it becomes evident that the patient's issues stem from a condition unrelated to improper occlusion, the dentist will compose a response letter indicating the absence of occlusal concerns. This response letter should include the occlusal analysis findings and outcomes to substantiate the absence of any abnormal occlusion. Its purpose is to offer the physician a comprehensible rationale, demonstrating that no irregular occlusion is present and the symptoms likely originate from a different medical issue.

(Principle of occlusion)

Summary

By acquiring knowledge of occlusion theory, dentists can effectively analyze the occlusal status of their patients. Consequently, dentists who have an acquired knowledge of occlusion theory can identify malocclusion conditions in their patients and formulate treatment plans to rectify these issues.

Occlusion theory holds relevance across all facets of dental care, contributing to an enhancement in the overall quality of dental treatments. Moreover, occlusion theory plays a crucial role in aiding patients afflicted by conditions stemming from malocclusion-related causes.



Principle of occlusion

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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 “ Temporomandibular disorders”.