



## BOOK REVIEW

# Soft-tissue lasers in dental hygiene

Authored by Jessica Blayden, Angie Mott. Wiley-Blackwell. 229 pages, soft cover. ISBN 978-0-470-95854-4.

This is the first book for dental hygienists about lasers written by two experienced dental hygienists. Both are members of the Academy of Laser Dentistry and are frequent speakers and trainers about this topic. Chapters 1–3 are overviews concerning the history of lasers, physics and components and are interesting to read. Chapter 11 presents >100 pages of various cases. A worthy point emphasized in the book is the issue of patient and operator safety when using laser devices in the dental practice. Potential dangers and different protective glasses specific for various laser wavelengths are discussed.

In Chapter 4, the two most common lasers used in dentistry for periodontal therapy are introduced, that is, the Nd:YAG and the diode lasers, both receiving a great detail of attention. Surprisingly, the indications for use of the Er:YAG are described as limited to hard tissue and, consequently, were not discussed further. This presumption, however, is not correct and does not do justice to a highly cited paper about the use of various lasers during non-surgical periodontal therapy (1).

Chapter 5 focuses on periodontal therapy and provides general information about periodontal disease. The content is quite condensed. The presented method of diagnosis is not based on common classification methods such as Armitage (2) and Van der Velden (3). The focus of the next chapter is what can be achieved with lasers regarding possible guided-tissue regeneration. Pre- and post-treatment radiographs are presented showing differences and possible radiographic evidence of bone regeneration. When critically considered, one must recognize that the radiographs were not taken in a standardized manner and, thus, weaken the author's claims. The chapter ends with a discussion of laser studies using direct quotes from individual articles presented as a list of loose statements. Moreover, the selected statements are all positive and favour lasers, which does not reflect the full body of scientific evidence.

Chapter 7 is about laser applications for the dental hygienist. The suggested readings contain only 1 (1) systematic review, representing the highest level of evidence. Two key references Cobb *et al.* (4) and Slot *et al.* (8) are lacking. Both these systematic reviews show that the body of evidence for laser use during non-surgical periodontal therapy is weak. Also, the important key reference for photodynamic therapy (PDT using visible light, usually a low wavelength diode laser and a photosensitizer) of (5) is not mentioned. This article also does not

support the application of PDT as an effective periodontal therapy.

Bacterial reduction is the focus of Chapter 8: to reduce or eliminate bacteremia, to prevent cross-contamination and to kill periodontopathic bacteria. From our own research, we have learned that immediately after instrumentation, the selected sites showed significantly reduced total CFUs. However, at 3 months post-treatment, the mean total CFUs increase and are not significantly different compared with pre-instrumentation levels (6).

Chapter 9 concerned with communication skills for the dental hygienist seems out of place in this book. Also odd, when considered in context of the book, is Chapter 10 with the title 'Insurance codes: how is laser paid for?'. In this chapter, one paragraph starts with: '*increasing production within the hygiene department is imperative.*' For us as reviewers, this is a surprising statement as the most important reason for using the laser is not to increase production but to promote periodontal health of the patient.

In apparent disdain for evidence-based dentistry, on the back cover of the book states: '*Lasers are used for more effective debridement, scaling and planning with less pain and bleeding.*' The question must be asked: Is this a statement of the author's opinion or a statement based on evidence?

In summary, the authors of the book seem overly biased in a positive sense towards the use of laser. Consequently, a critical appraisal of the existing scientific literature is not to be found in this book. Given the current emphasis in dentistry on 'evidence-based dentistry', a message of 'in my hand it works' appears to be dated and irrelevant. For those interested in the evidence with respect to lasers, the American Academy of Periodontology has an interesting position paper available on the internet (7).

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