

## Evidence-based Dentistry – Why Do I Need That?



**Course Author(s):** Liran Levin, DMD

**CE Credits:** 1 hours

**Intended Audience:** Dentists, Dental Hygienists, Dental Assistants, Dental Students, Dental Hygiene Students, Dental Assistant Students

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**Cost:** Free

**Method:** Self-instructional

**AGD Subject Code(s):** 149

**Online Course:** [www.dentalcare.ca/en-ca/professional-education/ce-courses/ce625](http://www.dentalcare.ca/en-ca/professional-education/ce-courses/ce625)

### Disclaimers:

- P&G is providing these resource materials to dental professionals. We do not own this content nor are we responsible for any material herein.
- Participants must always be aware of the hazards of using limited knowledge in integrating new techniques or procedures into their practice. Only sound evidence-based dentistry should be used in patient therapy.

### Conflict of Interest Disclosure Statement

- The author reports no conflicts of interest associated with this course.

### Introduction – Evidence-based Dentistry

This course will introduce the principles of evidence-based dentistry, how to develop, critically evaluate and implement scientific evidence into day-to-day practice and apply these principles to making the right decisions when advising patients on effective self-care in caries and periodontal disease prevention.

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## Overview

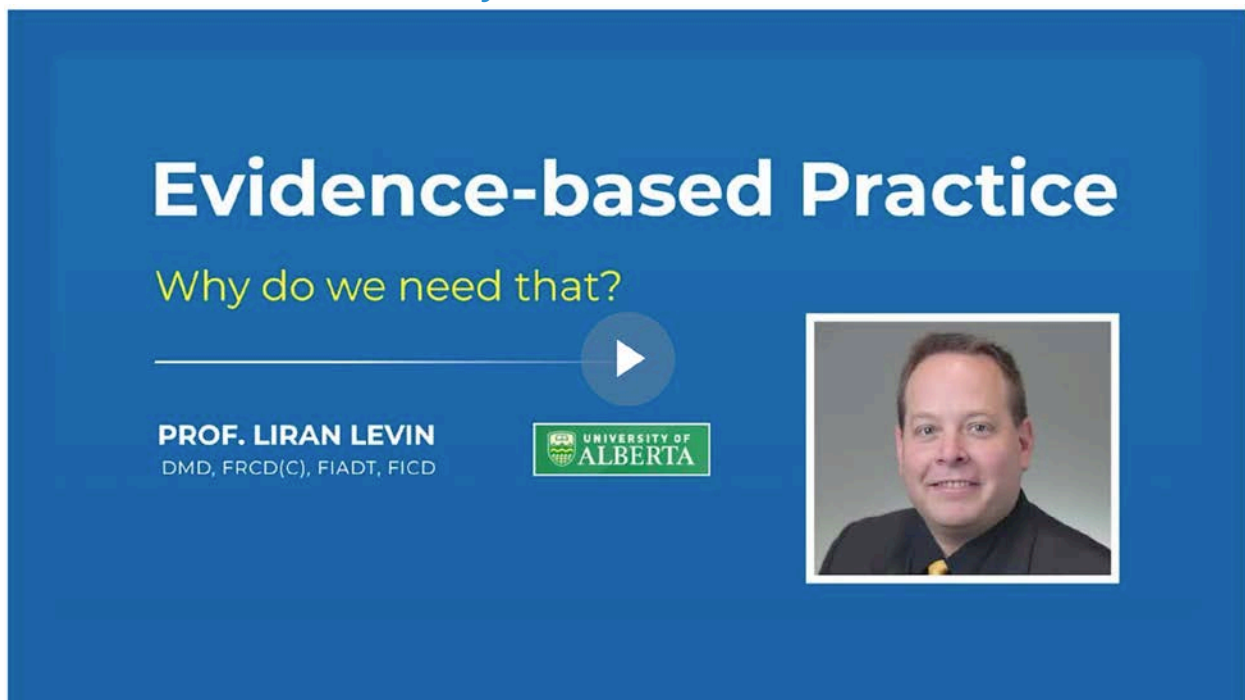
As clinicians, we are responsible for implementing current evidence-based treatments. Therefore, it becomes critical that we understand what evidence-based practice really means. Not all evidence is created equal and not every conclusion of an article should be implemented. Critically interpreting evidence becomes a valuable part of the clinician's responsibilities. This lecture will introduce the principles of evidence-based dentistry, how to develop, critically evaluate and implement scientific evidence into day-to-day practice and apply these principles to making the right decisions when advising patients on effective self-care in caries and periodontal disease prevention.

## Learning Objectives

**Upon completion of this course, the dental professional should be able to:**

- Understand evidence-base levels.
- Recognizing the importance of the pyramid of evidence.
- Identify ways to critically evaluate scientific evidence.
- Discuss decision making based on best available evidence.
- Identifying the evidence behind prevention measures.
- Acquiring important keys for long term, evidence-based success of dental treatments.

## Video: Evidence-based Dentistry



The video thumbnail has a blue background. At the top, the title "Evidence-based Practice" is written in large white font. Below it, the question "Why do we need that?" is written in yellow. A white play button icon is centered on a blue circle. To the left of the play button, the text "PROF. LIRAN LEVIN" is written in white, with "DMD, FRCD(C), FIADT, FICD" below it. To the right of the play button is the University of Alberta logo, which consists of a green square with a white crest and the text "UNIVERSITY OF ALBERTA". To the right of the play button is a portrait of Prof. Liran Levin, a man with short brown hair, wearing a dark suit and a yellow tie.

[Click on image to view video online.](#)

## Course Test Preview

To receive Continuing Education credit for this course, you must complete the online test. Please go to: [www.dentalcare.ca/en-ca/professional-education/ce-courses/ce625/test](http://www.dentalcare.ca/en-ca/professional-education/ce-courses/ce625/test)

1. **What is the highest level of evidence in the “pyramid of evidence”?**
  - A. Cohort studies
  - B. Case-control studies
  - C. Expert opinion
  - D. Systematic review and Meta-analysis
  
2. **Double blinding usually includes \_\_\_\_\_.**
  - A. blinding of patients and examiners to the product
  - B. helping blind participants get the same experience during the study
  - C. making sure the patients are not aware of the study aims
  - D. not disclosing the results of the study before the completion of the investigation
  
3. **What is unique in cross-over study design?**
  - A. Crossing over each patient that completed the study in order not to call them again.
  - B. Each patient receives different treatments during the different time periods (cross over from one treatment to another during the course of the trial).
  - C. Every patient receives the same treatment throughout the study in order to keep it very consistent.
  - D. Cross-over study design is another name for case-control study design.
  
4. **How many major phases are in the process of clinical trials required for a drug or a medical device to move from the lab-work, towards becoming a drug in the market?**
  - A. Ten phases with different populations and examiners that are blinded.
  - B. Four phases (I, IIa, IIb, III and IV).
  - C. All phases start after the marketing of the drug.
  - D. There are 5 phases that take about a year to complete.
  
5. **What phase is done post-marketing of the drug?**
  - A. IX
  - B. VI
  - C. IV
  - D. III
  
6. **Which phase is referred to as the ‘first in-man studies’?**
  - A. I
  - B. IIa
  - C. IV
  - D. IX
  
7. **What is the ‘direction of the question’ in cohort studies typically?**
  - A. Backwards – “What happened in the past?”
  - B. Forward – “What will happen?”
  - C. Current – “What is happening at the moment?”
  - D. There is not direction at all for cohort studies.

- 8. How can we double blind a study comparing manual to electric toothbrush?**
- A. Blinding of patients and examiners to the product.
  - B. Making sure the patients are not aware of the study aims.
  - C. Not disclosing the results of the study before the completion of the investigation.
  - D. This study cannot be double blinded – patients cannot be blinded to the type they are using.
- 9. What is a 'forest plot'?**
- A. A figure describing growth of trees in the forest.
  - B. A graph used in cohort studies to show the difference between the control group and the experimental group using bars.
  - C. A graphical display of estimated results from a number of scientific studies in a meta-analysis.
  - D. A calculation of density in populations.
- 10. Clinical trials and investigations can be used for \_\_\_\_\_.**
- A. disease prevalence/ occurrence assessment, exploration of confounding factors for diseases, comparing treatment options
  - B. animal modeling of a disease
  - C. laboratory testing of a new drug
  - D. development of vaccine in the first stages of RNA duplication

## References

1. Febbraio M, Flood P, Levin L. Editorial: What is the value of basic researchers in dentistry?. Quintessence Int. 2018;49(2):87-88. doi:10.3290/j.qi.a39645.
2. Levin L. Editorial: How biased is our evidence?. Quintessence Int. 2014;45(10):811. doi:10.3290/j.qi.a32822.
3. Levin L. Editorial: Evidence-based practice: Why do I need that?. Quintessence Int. 2014;45(1):7-8. doi:10.3290/j.qi.a31104.

## Additional Resources

- No Additional Resources Available.

## About the Author

### Liran Levin, DMD



Prof. Liran Levin is a professor of periodontology at the Faculty of Medicine and Dentistry, University of Alberta, Canada. He is also a visiting professor at the Harvard School of Dental Medicine, Boston, MA.

Prof. Liran Levin was the Head of Research at the School of Dentistry, Rambam Health Care Campus, and Faculty of Medicine - Technion IIT Haifa, Israel.

Prof. Liran Levin received his DMD degree with distinction at Tel Aviv University and completed his Post Graduate Periodontology Program at the Department of Periodontology, Rambam Health Care Campus. He also received his Periodontology Specialist Certificate from the European Federation of Periodontology as well as a Fellow of the Royal College of Dentists of Canada in Periodontology.

Prof. Liran Levin has published more than 260 articles and book chapters in the international professional literature and is involved in research mainly in periodontology, dental implants and dental trauma. He has been lecturing extensively both nationally and internationally in the fields of dental implants and periodontal diseases.

Prof. Levin serves as an Associate Editor for the International Dental Journal, Scientific Associate Editor for the Quintessence International, Associate Editor for the Dental Traumatology and as an Editorial Board Member and a manuscript reviewer for some of the leading international professional journals in the fields of periodontology, dental implants, dental trauma and general dentistry.

Prof. Levin has served as The Chairman of the Ethics in Dental Research Committee of the International Association for Dental Research (IADR). He is currently the President-elect of the International Association for Dental Traumatology (IADT).

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