

About EBD

►What is Evidence-Based Dentistry?

The [American Dental Association](#) defines evidence-based dentistry as:

"an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences."

EBD integrates:

- the best available evidence
 - clinical experience
 - and patient preference
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►EBD Process

The EBD process is a structured approach to identifying and using the best information relevant to a particular clinical problem. It follows these steps:

- **Question**
Articulate a clear question based on the patient's clinical problem.
 - **Find**
Conduct a comprehensive search for the latest relevant research
 - **Appraise**
Critically assess the evidence
 - **Act**
Use the best identified valid and relevant evidence in patient care
 - **Evaluation**
Assess how well the previous steps worked
- [Centre for Evidence Based Dentistry](#)
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►Clinical Question

A well formed clinical question covers the following areas:

- **Patient** or population or problem
- **Intervention** or exposure or prognostic factor
- **Comparison** (not always included)
- **Outcome**

Sample question: Will an adult patient with sleep bruxism find that an occlusal splint reduces jaw muscle discomfort?

►Types of Clinical Questions

Clinical questions usually fall into one of four main categories:

- **Etiology / Harm** : identifying associations, risk factors and causes of a disease
- **Diagnosis**: selecting tests that accurately detect a disease
- **Therapy / Prevention** : selecting effective interventions to treat or prevent a disease
- **Prognosis**: predicting the probable outcome of a disease or treatment

Sample questions:

- **Etiology / Harm** : Are teenagers who frequently drink soda at risk for developing dental caries?
- **Diagnosis**: What is the best method that dentists can use to identify early carious lesions?
- **Therapy / Prevention** : Should teenagers and young adults with asymptomatic impacted wisdom teeth have them removed?
- **Prognosis**: How long will a dental implant last in an adult patient with no periodontal disease?

Different study design methods are used in clinical research. Researchers select the study design to match the kind of clinical question being asked and the level of knowledge about the question that already exists.

- **Etiology / Harm** : Randomized control trial, cohort, case-control, cross-sectional
- **Diagnosis**: Cohort study with comparison to a reference standard
- **Therapy / Prevention** : Randomized control trial, cohort, case-control, case series
- **Prognosis**: Cohort, case-control, case series

►Levels of Evidence

When searching for questions related to therapy / prevention or etiology / harm look for evidence in the following order:

1	Systematic Reviews of Randomized Controlled Trials
1b	Individual Randomized Controlled Trial
2	Systematic Reviews of Cohort Studies

2b	Individual Cohort Study
2c	Outcomes Research; Ecological Studies
3	Systematic review of Case-Control Studies
3b	Individual Case-Control Study
4	Case Series
5	Expert Opinion

Oxford Centre for Evidence-based Medicine: Levels of Evidence

► Study Types

Systematic Reviews

"A systematic review can be defined as a review of a clearly formulated question that attempts to minimize bias using systematic and explicit methods to identify, select, critically appraise and summarize relevant research."

Needleman IG. A guide to systematic reviews. *Journal of Clinical Periodontology* 29, Suppl 3 (2002):6-9.

Randomized Controlled Trial (RCT)

"Randomised controlled trials (RCT), or randomised clinical trials, are experimental studies where the effect of an intervention is assessed by collecting data before and after an intervention has taken place. RCT are used to compare an intervention with one or more other interventions or with no intervention."

Levin, K. A. Study design VII: Randomised controlled trials. *Evidence-based dentistry* 8, no. 1 (2007):22-3.

Cohort Study

"A cohort study is one in which a group of subjects, selected to represent the population of interest, is studied over time."

Levin, K. A. Study design IV: Cohort studies. *Evidence-based dentistry* 7, no. 2 (2006):51-52.

Ecological Study

"An ecological study is an observational study defined by the level at which data are analysed, namely at the population or group level, rather than individual level."

Levin, K. A. Study Design VI: Ecological Studies. *Evidence-based dentistry* 7, no. 4 (2006):108.

Case-Control Study

"Like cohort studies, the purpose of case-control studies is to establish association between exposure to risk factors and disease. Unlike cohort studies, however, members of the population with the disease are selected into the study at the outset and risk factor information is collected retrospectively"

Levin, K. A. Study design V: Case-control studies. *Evidence-based dentistry* 7, no. 3 (2006):83-84.