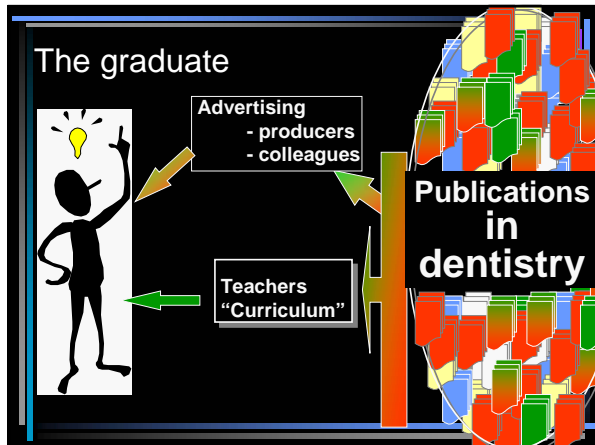


Evidence-based Practice in Dentistry

Why Bother?

Asbjorn Jokstad
Institute of Clinical Dentistry, University of Oslo, Norway



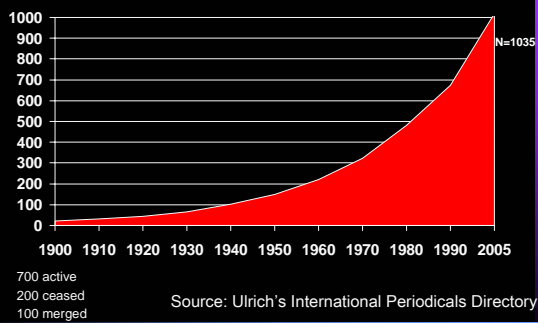
- ### The graduate
- Has been taught and can perform many basic procedures - not necessarily the most modern
 - No hands-on experience with many procedures common in modern dental clinics
 - from where and how can further training be obtained?
 - Theoretic knowledge at zenith, from now on less time for reading / question of priorities
 - Already from day 1 the science in dentistry advances further - how to stay updated?

A rapidly changing society

A rapidly changing society

1. There is an Information Explosion in all fields of Biomedicine

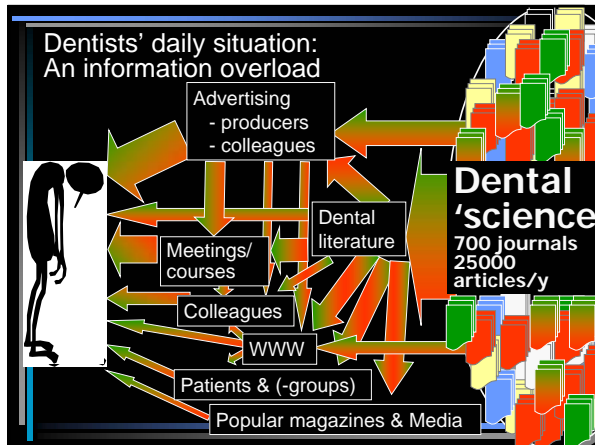
Dental Journals in circulation



A rapidly changing society

The production of new knowledge in biomedicine is at maximum in historical context

- Tremendous growth in publications
- Related to numbers of physicians and scientists
- Infomercial publications



2. We need to consider not only the amount of information, but also the quality of this information

There is an Information Explosion
in all fields of Biomedicine

Where and by who is
new knowledge in oral
sciences generated?



Clinical
practitioners

- Pragmatists: what works - what creates problems?
- Great diversity of experience, interest and capacity
- Reporting draw on a panoply of experience
- GPs/specialists; single/teams; secondary/tertiary care

Scientists



General sciences
Biological sciences
Oral sciences
Clinical
Laboratory

- Creates "scientific evidence"
- Formulation of ideas, hypotheses, study design, data collection
- Peer review, internal/external validity, debates within paradigms
- Findings are reported in probabilities, not absolutes



Critical appraisers

- Epidemiologists
- Statisticians
- Social scientists
- Health economists
- Clinicians

- Appraise the evidence for clinical care and practice
- Collect, abstract and evaluate publications
- Debates about values and balance between consensus and evidence, rigour of data and application of statistics



Guideline developers

- Creates guidelines, protocols and standards
- Local consensus, sometimes national guidelines; Delphi strategies versus AGREE approach
- Often clinical specialists seeking ways to influence peers

A rapidly changing society

1. The information production is at maximum in historical context
2. The quality of this information varies
3. Established ideas and concepts are constantly being replaced



Advancements require communication

Different educational backgrounds, evaluation of best practice

Different pressures, priorities, terminologies, preoccupations

BARRIERS: Ignorance-Defensiveness-Arrogance

A rapidly changing society

1. The production of new knowledge is at maximum in historical context
2. The quality of information varies
3. Incessant replacements of established ideas and concepts
4. Information technology has improved the potential for information transfer to everybody

New patients?

Realistic white shades for special cosmetic needs

SPURE™ Super Whitening shades are ideal for restoring all-brush and discolorous teeth.

Only SPURE™ offers three different bright white shades, selected by dentists.

- Super Whitening (Neutral)
- Super Whitening (Cyan)
- Super Whitening (Pink)

...shades, both...
...will do it in...
...in minutes.

...SPURE™ will do it with your cosmetic needs.

Before
After

Patient access to Information

- ✓ Wish to remain sound, look healthy, different?... young!!!
- ✓ Competitive health providers and information sources
- ✓ **Patient information and communication**

5. General practitioners
need new knowledge
to
meet the expectations
of educated patients in
this information age

Are their
needs met?

What would you answer be if ...

a 32 y patient calls four hours after a wisdom tooth has been removed and complain about bleeding, pain and severe swelling.



She demands immediately some analgetics, some antifebriles and perhaps also antibiotics?...

..or if ...

a 66 year old woman comes to your clinic because she feels she hasn't received any help from her former dentist about oral lichen planus. She wants to confer with you about a new Herbal Tea treatment described in the latest issue of 'Health & Fitness'



What to when professionally uncertain?

Apply:

- A patho-physiological approach: this makes sense...

What to when professionally uncertain?

Apply:

- A patho-physiological approach: this makes sense..
- An expert / "how I was trained" approach: I learned this worked / didn't work...

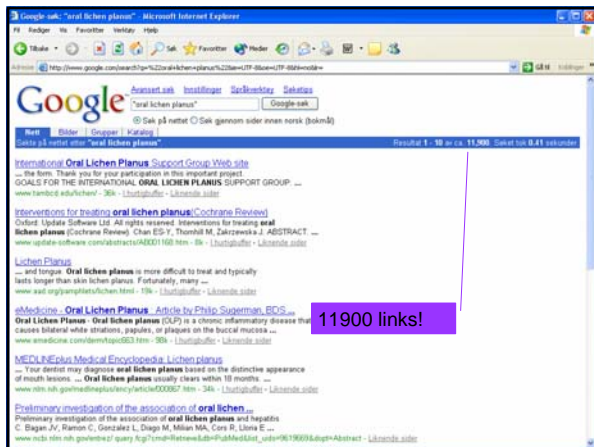
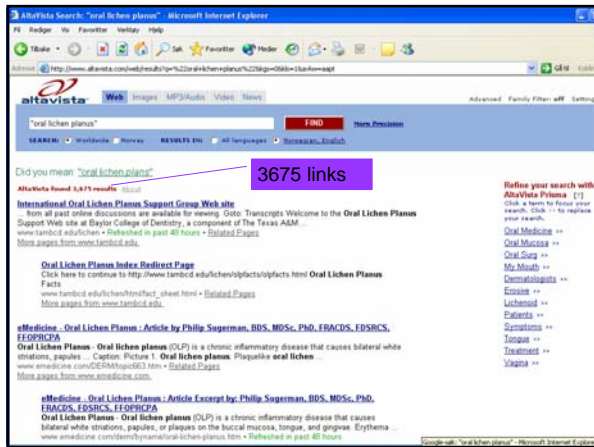
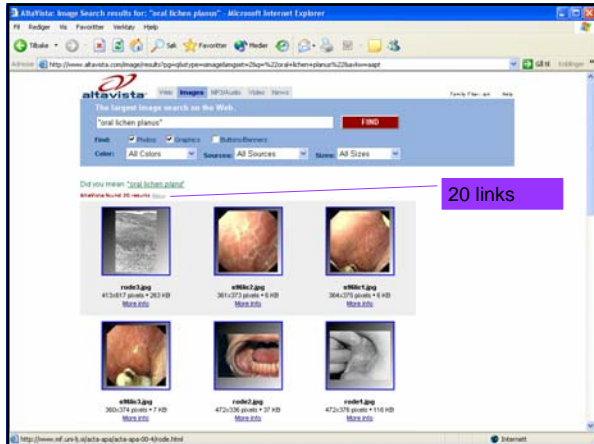
What to when professionally uncertain?

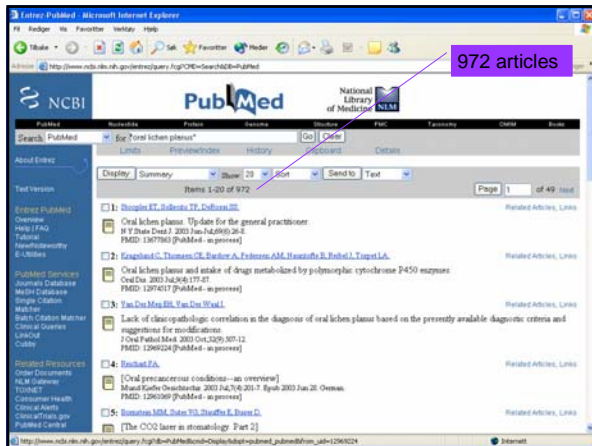
Apply:

- A patho-physiological approach: this makes sense
- An expert / "how I was trained" approach: I learned this worked / didn't work...
- An anecdotal approach.: this didn't work last time..

What to when professionally uncertain?

- Can I consult a colleague?
- Are my journals and textbooks organised and updated?
- Is a relevant library nearby?
- Can I find the answers on the Internet?





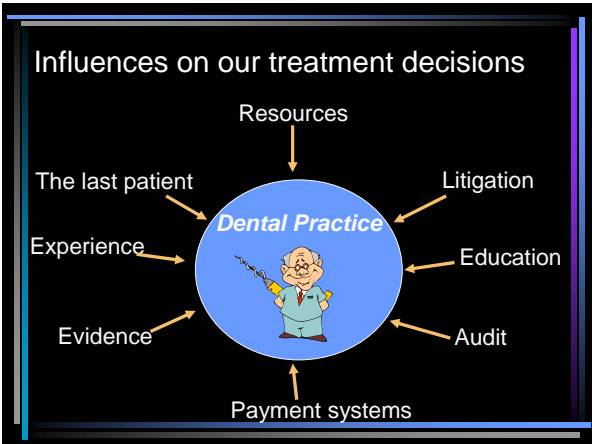
What to when professionally uncertain?

Apply:

- A patho-physiological approach
- An expert / "how I was trained" approach
- An anecdotal approach
- Colleague consulting approach
- Organised and updated journals and textbooks
- Library approach
- Internet approach
- Confess that you don't know what to do, or do something and pray... or invent some combination of approaches

- 1. Information explosion
- 2. Quality of information
- 3. No theories are constant
- 4. Educated patients with access to information
- 5. Daily information needs
- 6. Paradox

- The situation for many dentists today
- 1. We need new information every day, but most of our needs are never met
- ↓
- 2. consequently, our clinical knowledge and performance in the clinic deteriorates
- ↓
- 3. and traditional instructional continuing education courses do not improve our performance.



Do we today prepare our future colleagues to change behavior, attitude and methods in the lights of new knowledge?

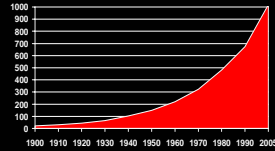
How quickly do dentists change in accordance with new research?

- Impacted wisdom teeth?
- TMD management?
- Restoration replacement needs?
- Caries and remineralization potential
-
- Science transfer to dentists seems to be ineffective

The screenshot shows a web browser displaying a journal article. The article title is "Dentists' decisions on prophylactic removal of mandibular third molars: a 10-year follow-up study". The authors listed are Kerstin Knutsson, Leif Isvall, and Malin Holm. The journal is "COMMUNITY DENTISTRY AND ORAL EPIDEMIOLOGY". A quote from the article is highlighted in a grey box: "...studies appear to motivate a more restrictive approach today compared with 10 years ago". To the right of the quote is a small image of a dental X-ray showing a mandibular third molar.

Science transfer to dentists seems ineffective ..is the problem that...

...research is difficult to access?



Science transfer to dentists seems ineffective ..is the problem that...

...research is difficult to access ...or understand?

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European Journal of Oral Sciences
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Effect of selected literature on dentists' decisions to remove asymptomatic, impacted lower third molars

Will J. M. van der Sanden¹, Dirk G. Metzger², Alphons J. M. Plasschaert¹, Richard P. G. M. Groff³, Martin A. van't Hof⁴, Kerstin Knutsson⁵, Ernst H. Vandromscheel¹

¹University Medical Center, ²Department of Cariology and Endodontology, ³Centre for Quality of Care Research (QOC), ⁴University of Nijmegen, Nijmegen, The Netherlands, and ⁵Centre for Oral Health Services, Lund University, Malmö, Sweden


van der Sanden WJM, Metzger DG, Plasschaert AJM, Groff RFGM, van't Hof MA, Knutsson K, Vandromscheel EH. Effect of selected literature on dentists' decisions to remove asymptomatic, impacted lower third molars. *Eur J Oral Sci* 2002; 110: 2-7. © Eur J Oral Sci 2002

The aim of this study was to assess the effect of studying selected literature on dentists' decisions to remove asymptomatic, impacted lower third molars. A pre-test-post-test control group design was used. Given 36 patient cases, two groups of 16 general dental practitioners each were asked to assess the need for removal of asymptomatic impacted lower third molars. The cases were classified by three parameters: 'position of the third molar', 'impaction type', and 'patient age'. After studying selected literature on this subject by the intervention group, both groups were asked to assess the same cases again. Frequencies of decisions to remove the third molars were calculated. For each participant, tables were composed by cross-tabulating the indication to remove a third molar with each of the three parameters. Fisher's exact test was used to test the significance of the difference between pre-test and post-test decisions. The overall number of indications to remove asymptomatic, impacted lower third molars decreased by 37% in the intervention group. In the control group, the difference between pre- and post-test was not statistically significant. It was concluded that the provision of selected literature significantly influences treatment decision making by dentists in a third molar decision task.

Will JM van der Sanden, University Medical Center, College of Dental Sciences, PO Box 9103, NL-6500 HB Nijmegen, The Netherlands
Tel: +31-24-3642100
E-mail: w.vandersanden@dent.umcn.nl

Key words: decision making, third molar, quality of care


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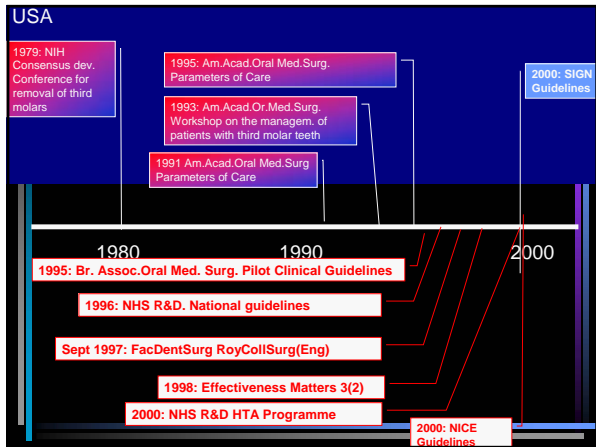


Science transfer to dentists seems ineffective ..is the problem that...

..research is difficult to access ... or understand?

But what about clinical guidelines?





..is the problem that...

....research is difficult to access

...or understand?

...what about clinical guidelines?

Are the existing guidelines bad or inappropriate?

.... yes and no



..is the problem that...

....research is difficult to access or understand ?
... clinical guidelines ..are they bad or inappropriate?

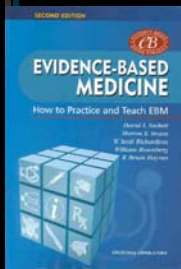
Are the practicing dental professionals non-receptive?

.... if so, who is responsible?
....and can something be done?

Our responsibilities as educators is to generate an ambition of life long learning and prepare them accordingly

Maybe this new “EBM” - thing can be of any help?





Evidence that we do more good than harm needs to be demonstrated using adequate study designs

1. A fundament for life long learning is to possess skills in critical appraisal
2. Critical appraisal of research must be an integral component of student training
3. Curriculums should progress from being PBL- to become EBD-based

Consequently...

All dental students should conduct at least one systematic review according to a PICO question because...



... conduct at least one systematic review because...

The student will

1. Identify differences in conclusions of studies and possibly grasp why



... conduct at least one systematic review because...

The student will


1. Identify differences in conclusions of studies and possibly grasp why
2. Recognize the state of current oral health research



... conduct at least one systematic review because...

The student will


1. Identify differences in conclusions of studies and possibly grasp why
2. Recognize the state of current oral health research
3. **Identify opportunities for research**



... conduct at least one systematic review because...

The student will

1. Identify differences in conclusions of studies and possibly grasp why
2. Recognize the state of current oral health research
3. Identify opportunities for research
4. **Train to recognize potential bias caused by poorly executed research or due to inadequate reporting**



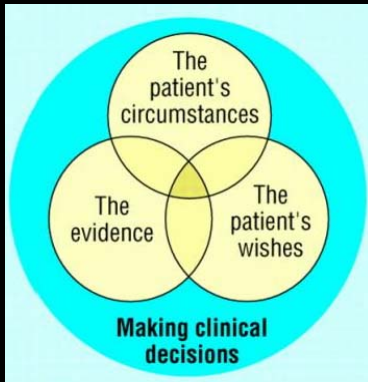
Evidence Based Practice

Practice of a process of life-long...
problem-based learning in which devoted care for our patients creates a...
need for evidence about the...
cutting edge knowledge concerning diagnosis, prognosis, therapy, and other clinical and health care issues.
 (Sackett et al.,1995)

Two incentives for practicing Evidence-based Dentistry

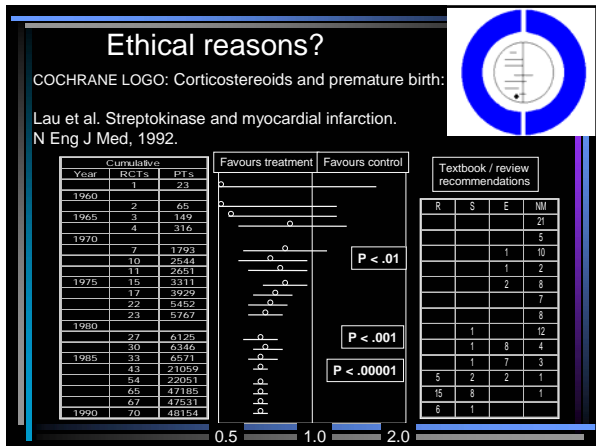
- A strategy for solving clinical problems on a daily basis.
- a practical aspect

Evidence-based Practice:



Two incentives for practicing Evidence-based Dentistry

- A strategy for solving clinical problems on a daily basis.
- a practical aspect
- A strategy for being reasonably certain that my advises and treatment are the best available to my patients.
- an ethical aspect



Evidence Based Practice

The aim of evidence-based medicine is to eliminate the use of ineffective, expensive, or even dangerous medical decision-making

(Rosenberg & Donald, BMJ, 1995)

Evidence Based Dentistry?!

An increasingly fashionable tendency of a group of young, confident, and highly numerate medical academics to defame the performance of experienced clinicians by using a combination of epidemiological jargon and statistical manipulation.



Evidence Based Dentistry?!

Arguments, usually presented with near evangelistic zeal, that no health related action should ever be taken by a doctor, a nurse, a purchaser of health services, or a politician unless and until the results of several large and expensive Randomized Controlled Trials have appeared in print and approved by a committee of experts



Evidence Based Dentistry?!

Replaces original findings with subjectively selected, arbitrarily summarised, laundered and biased conclusions of indeterminate validity or completeness.

It has been carried out by people of unknown ability, experience, and skills using methods whose opacity prevents assessment of the original data.



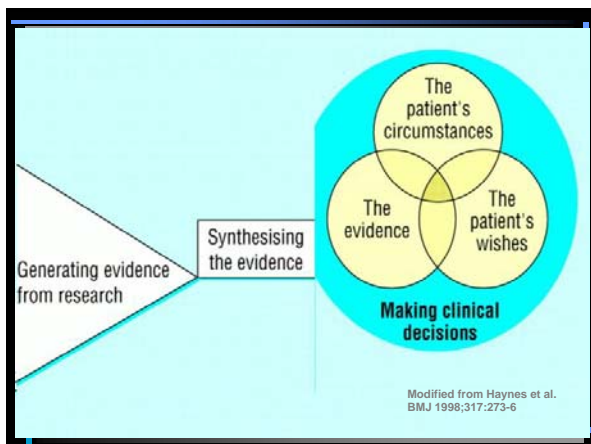
How can evidence-based dentistry be integrated in our daily practice?

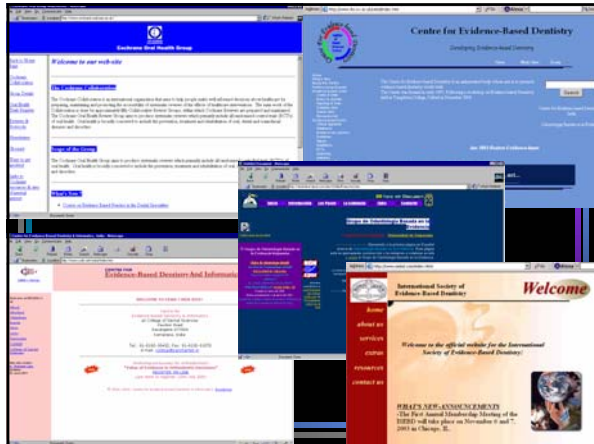
EBD practice

1. Generate focused clinical questions
 - On therapy, diagnostic tests, prognosis, harm, etc. (= PBL)
2. Efficiently find the evidence (=PBL)
3. Determine validity, results, applicability of evidence
4. Apply the results of appraisal in clinical practice / teaching
5. Evaluate own performance

How can we apply EBD in our daily practice?

1. By learning how to practice evidence-based dentistry ourselves
 - Books
 - Seminars
 - Internet
 - Courses
 - Articles
 - Link banks

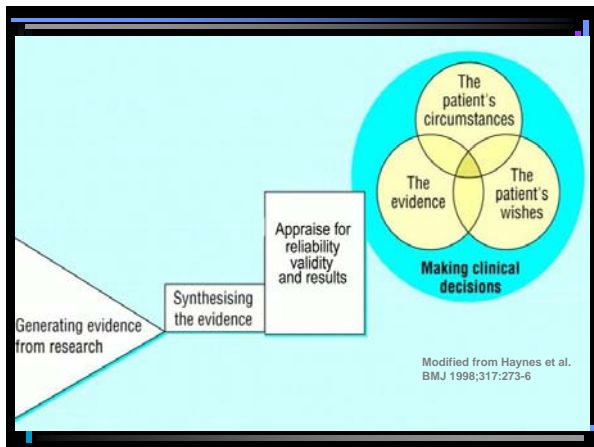


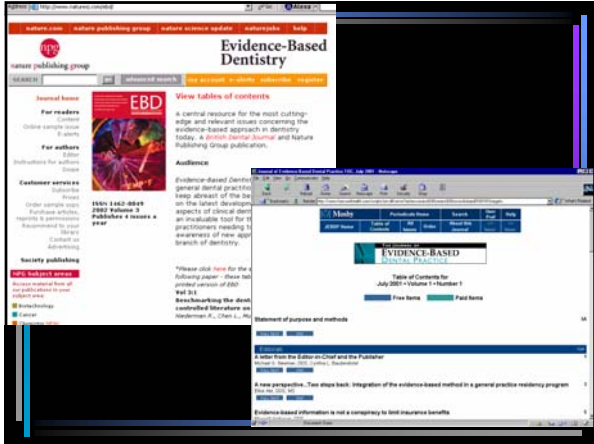


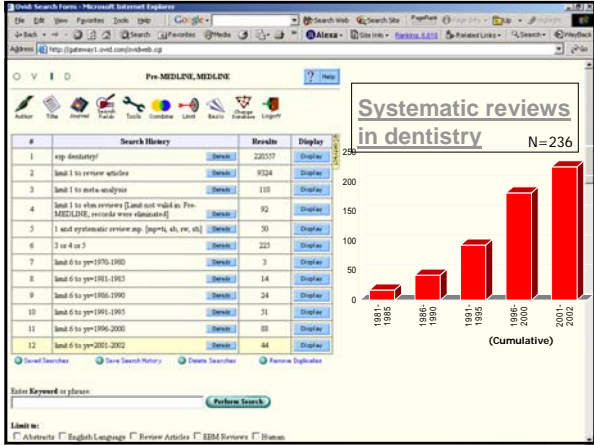
How can we apply EBD in our daily practice?

2. By seeking and applying evidence-based dentistry summaries generated by others

- Journals that critically appraise primary studies
- Systematic reviews







Cochrane Oral Health Group

- 250 members from 25 countries
- Specialist trials register ~14,000 entries
- Systematic reviews: near 90

<http://www.cochrane-oral.man.ac.uk>



How can we apply EBD in our daily practice?

2. By seeking and applying evidence-based dentistry summaries generated by others

- Secondary Journals
- Systematic reviews
- IADR: International Collaboration for Evidence-based Dentistry

How can we apply EBD in our daily practice?

3. By accepting and applying practice protocols, policies and guidelines based on evidence-based principles

