



*Evidence-Based Dentistry:  
Challenges for Education and  
Dental Research*

# Information Missing from Databases and Access Problems

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# Influences on dental clinical decision making

## Evidence



The last patient



Litigation society



Audit prospect



Payment & -systems



Experience level



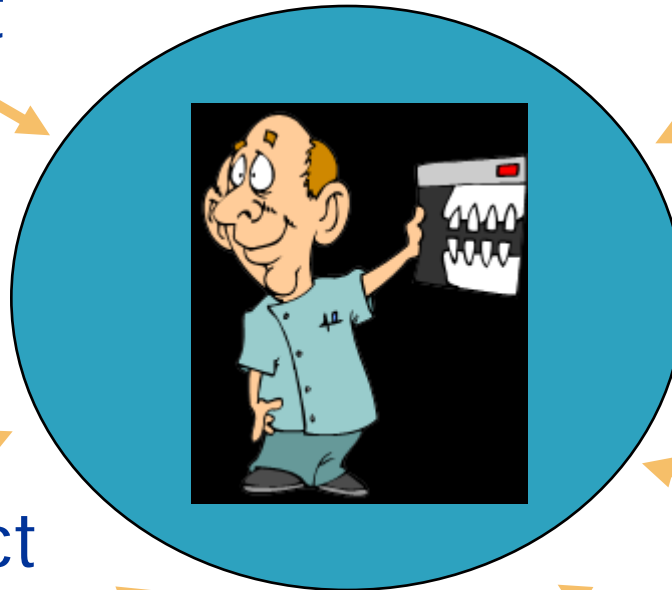
Education level



Resources available



Patient preferences

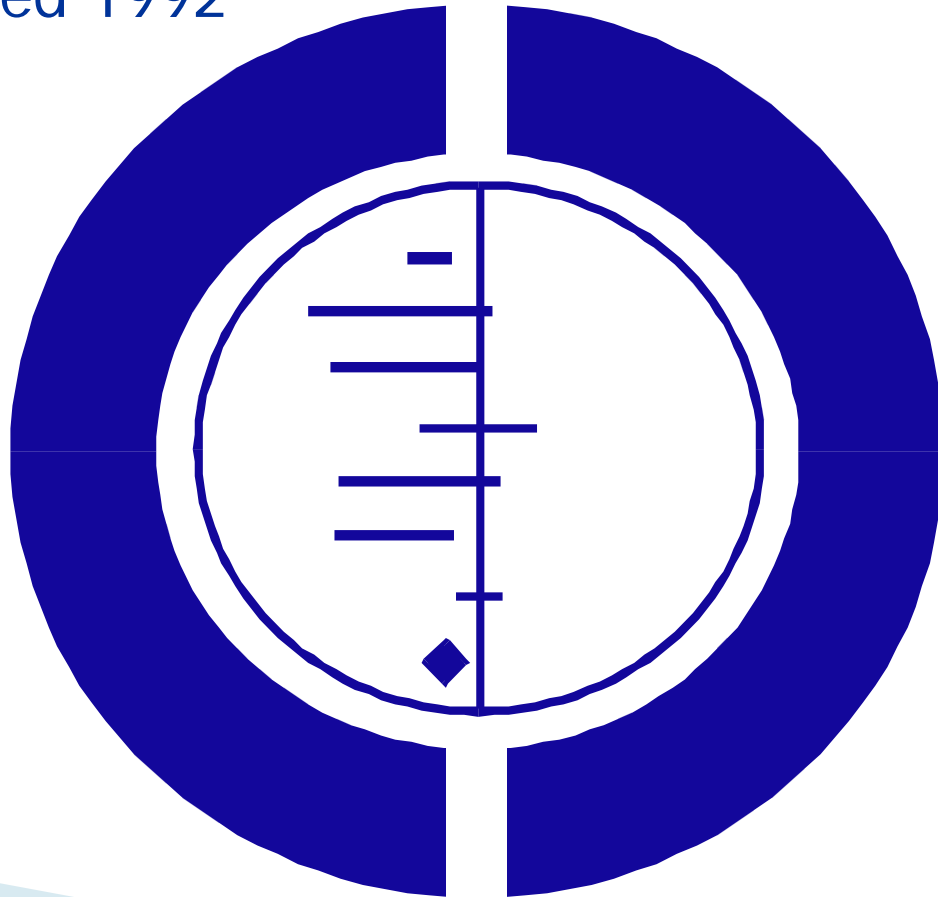




# Influences on dental clinical decision making – initiatives



The Cochrane Collaboration  
Established 1992



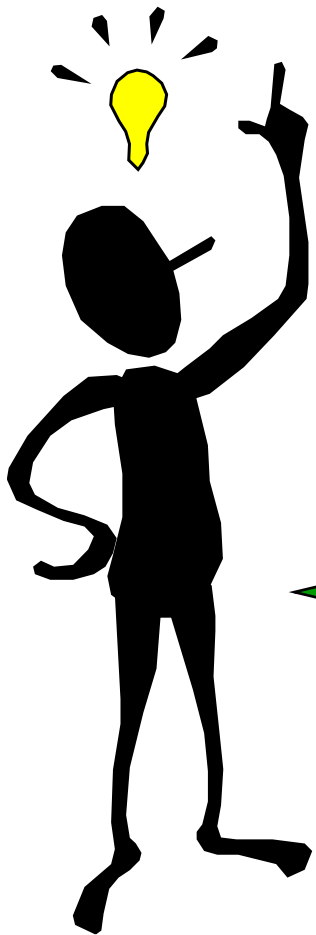
The "7 RCT  
forrest-plot"  
logo

Reflecting a  
1989 SR of 7  
interventional  
trials that, if  
implemented,  
could have  
averted the  
suffering and  
death of K  
baby lives

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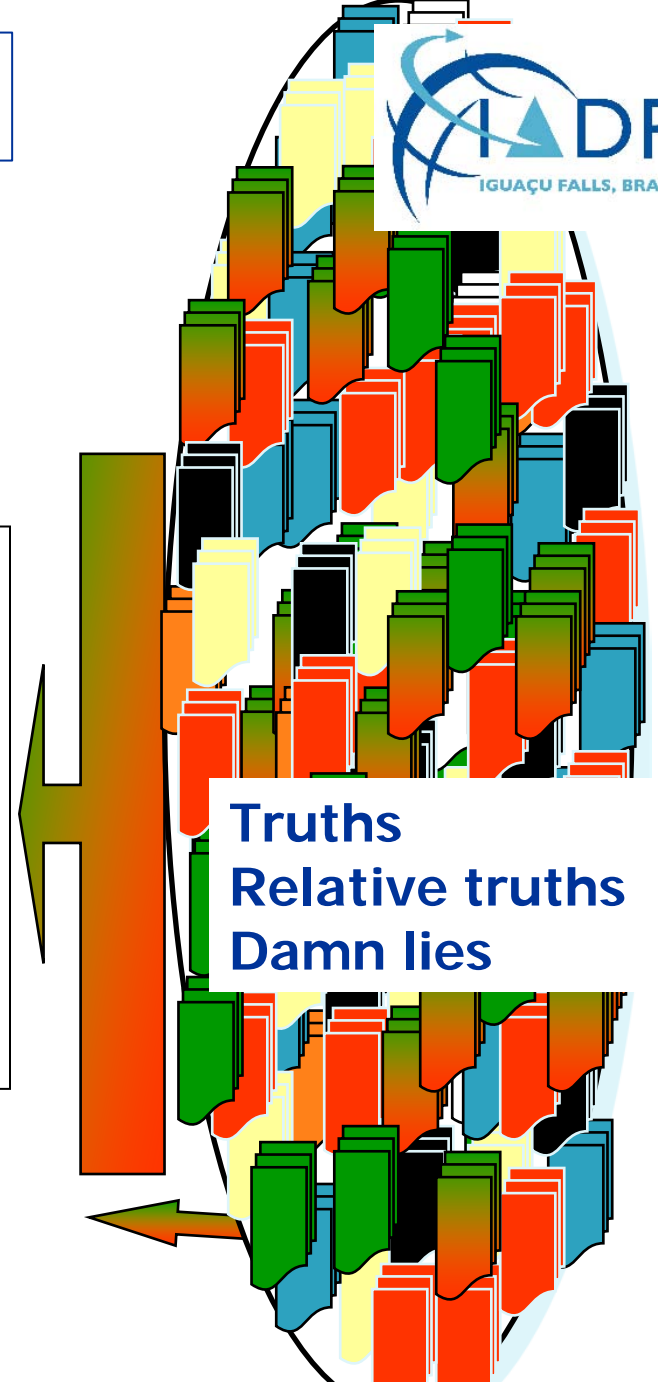


# The new graduate



**Director/ teacher-  
filtered:  
"Curriculum"  
&  
"Classic literature"  
&  
"Select textbooks"**

Promotion a.k.a.  
"Pizza-evenings"



**Truths  
Relative truths  
Damn lies**



# The scientific basis for the practice of oral medicine and dentistry changes constantly, -

How can these changes effectively be implemented into education and into clinical practice?



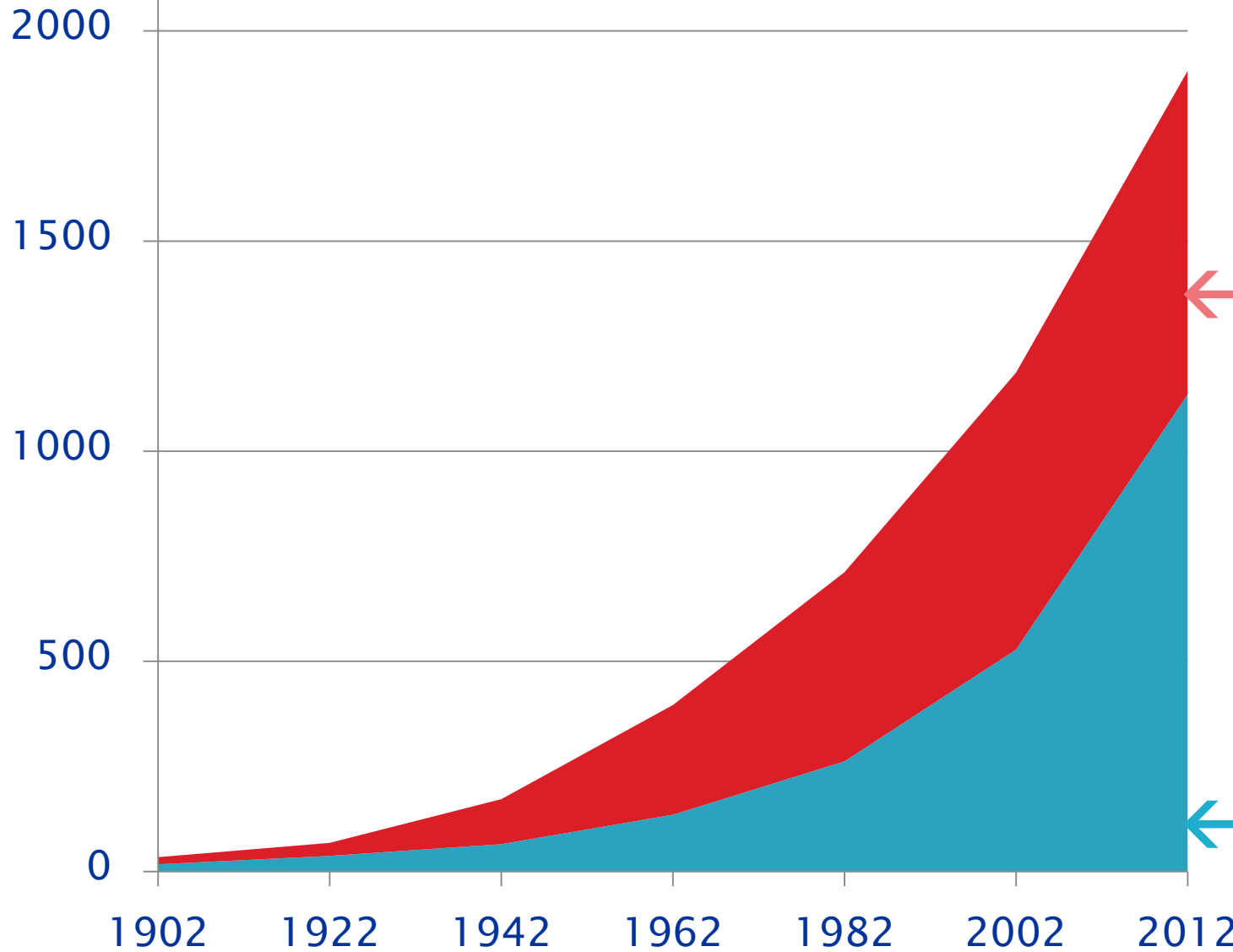
# Periodicals within dentistry in circulation



**1.6.2012:**

- Magazine (250)
- Newsletter (114)
- Bulletin (43)
- Monography (33)
- Newspaper (26)
- Directory (21)
- Report (13)
- Proceedings (11)
- Handbook (9)
- Yearbook (9)
- Abstract/Index (5)
- Database (3)
- Catalog (2)

**← Journal (1135)**



Source: Ulrich's International Periodicals Directory

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# An EB-information overload too?



Ulrichsweb

Ulrich's Serial Analysis System



**ULRICHSWEB™**  
GLOBAL SERIALS DIRECTORY

Search Workspace Ulrich's Update Admin

Enter a Title, ISSN, or search term to find journals or other periodicals:

evidence based



► [Advanced Search](#)

Retain my Advanced Search options

## Narrow Results

► Key Features

▼ Serial Types

- Sort: Count | [Alpha](#)
- Journal (188)
- Monographic series (62)
- Handbook / Manual (59)
- Newsletter (29)
- Magazine (27)
- Directory (25)
- Proceedings (21)
- Report (15)
- Database (10)
- Newspaper (7)

**Filter** More...

► Formats

► Content Types

1 - 25 of 130 results for: **+(evidence based) +(title:(evidence based))**

[View Details](#) [Save to List](#) [Email](#) [Download](#)

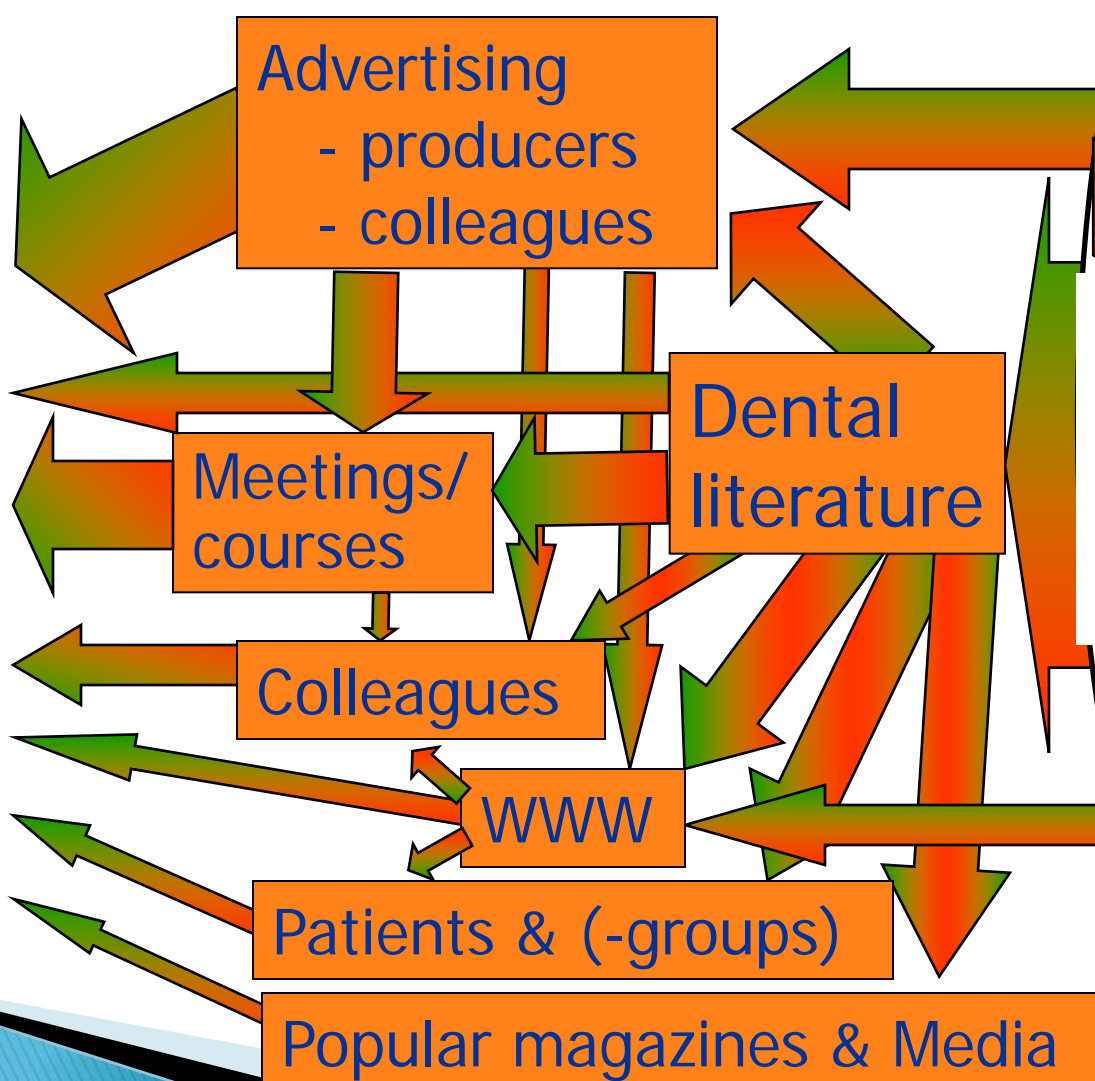
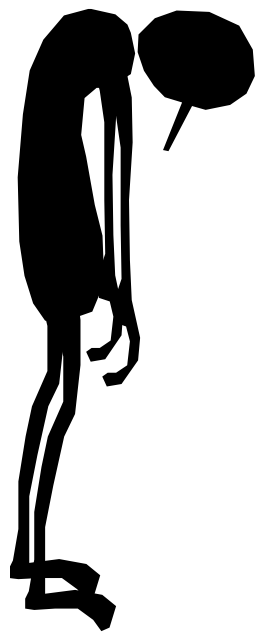
Page 1 of 6 25

	Title	Publisher	ISSN	Country
<input type="checkbox"/>	<a href="#">Evidence - Based Nursing</a>	B M J Group		United Kingdom
<input type="checkbox"/>	<a href="#">Evidence - Based Nursing</a>	B M J Group	1468-9618	United Kingdom
<input type="checkbox"/>	<a href="#">Evidence - Based Dentistry</a>	Nature Publishing Group	1462-0049	United Kingdom
<input type="checkbox"/>	<a href="#">Evidence - Based Dentistry</a>	Nature Publishing Group	1476-5446	United Kingdom
<input type="checkbox"/>	<a href="#">Evidence-Based Medicine (English Edition)</a>	B M J Group		United Kingdom
<input type="checkbox"/>	<a href="#">Evidence - Based Oncology</a>	Churchill Livingstone	1532-2203	United Kingdom
<input type="checkbox"/>	<a href="#">Evidence - Based Mental Health</a>	B M J Group	1468-960X	United Kingdom
<input type="checkbox"/>	<a href="#">Worldviews on Evidence-Based Nursing</a>	Wiley-Blackwell Publishing, Inc.	1741-6787	United States

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# A current Information Overload



**Dental 'science'**  
~ 25 000 articles/year

Truths  
Relative truths  
Damn lies

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# Information need to answer a single clinical question



A 66 year old woman contacts your clinic due to oral lichen planus. She has read about a new treatment intervention described in her morning newspaper. Can you advise her?





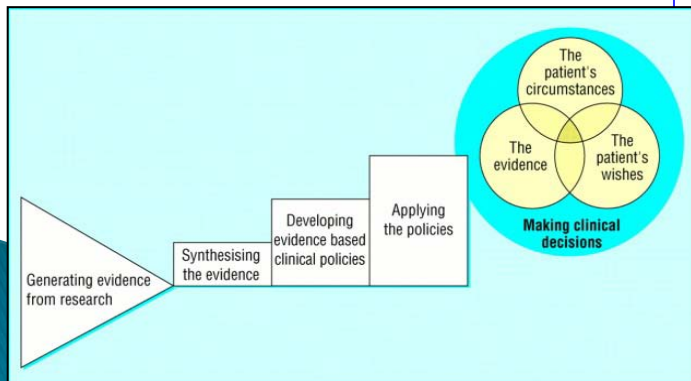
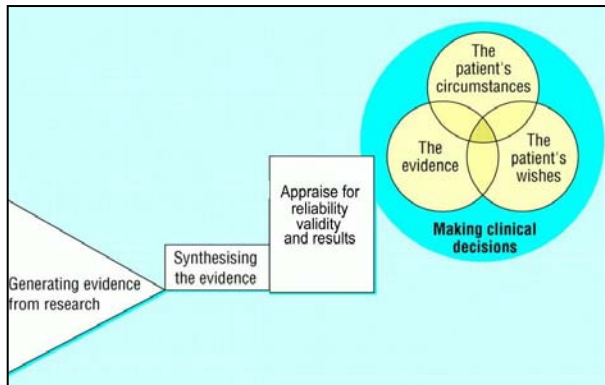
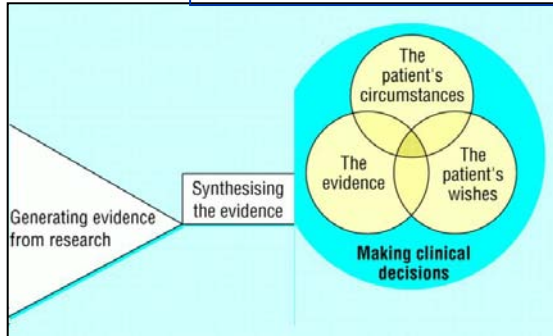
# Evidence-Based decision-making



Modified from Haynes et al. BMJ 1998;317:273-6

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# Evidence-Based decision-making - alternative strategies



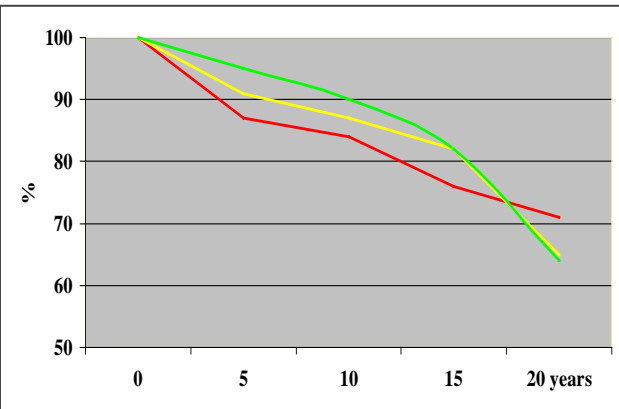
1. Identify & synthesize EB from primary and secondary literature

2. EB summaries generated by:

- Journals that critically appraise primary studies
- Systematic reviews

3. Clinical Practice Guidelines, Protocols and Policies based on EB principles

# Information need to answer a complex clinical question, e.g., What is the optimal technical solution in prosthodontic therapy for a given condition?



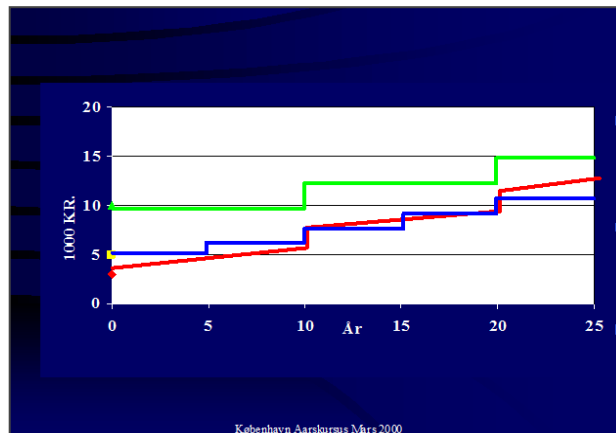
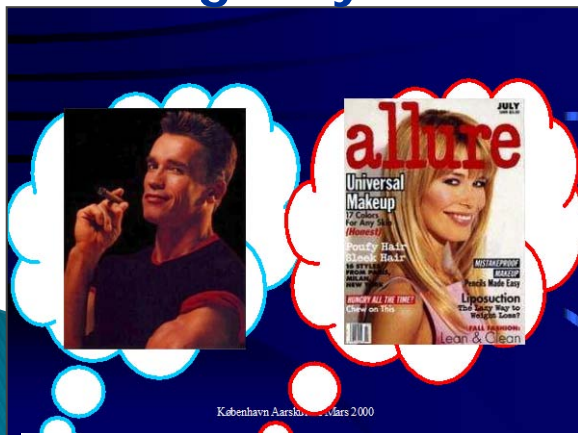
Independent variables	Bi-variate odds ratios	Bivariate significance	95% Confidence intervals bivariate odds ratios	Multi-variate odds ratios	Multivariate significance	95% Confidence intervals for multivariate odds ratios
<b>Age group</b>						
20-30	-	-	-	-	-	-
30-40	2.32	**	1.15 - 3.13	2.52	**	1.35 - 3.33
+40	2.63	***	1.43 - 3.08	2.63	***	1.83 - 3.8
<b>Gender</b>						
Male	-	-	-	-	-	-
Female	2.42	**	1.61 - 2.79	2.12	**	1.91 - 2.9
<b>Material</b>						
Amalgam	-	-	-	-	-	-
Composites	1.12	NS	0.13 - 1.56	1.42	NS	1.13 - 1.96
Glass ionom.	3.12	***	2.52 - 4.34	5.65	**	4.67 - 7.23
<b>Dentists</b>						
#1	-	-	-	-	-	-
#2	1.34	NS	0.35 - 1.61	1.04	NS	1.35 - 2.01
<b>Location</b>						
Mandible	-	-	-	-	-	-
Maxilla	1.55	*	1.17 - 2.04	1.15	*	1.57 - 2.14



Longevity

Risk factors

Outcomes probabilities



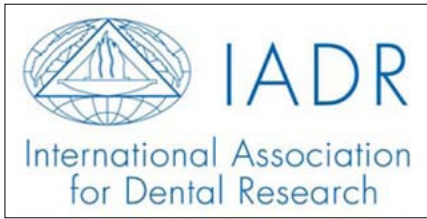
QOL-dimension

Incremental Cost

Worst Case Scenario



# Databases with information for Evidence-Based decision making



**IADR**  
A role to play?



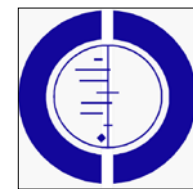
**Databases**  
Primary /  
Secondary  
research



**Systematic Reviews**



**Interventions (RCTs) only**



**Clinical Guidelines**



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# Resume - current problems



- ▶ Students should not be trained to memorize select information but instead how to critically appraise new information as a prerequisite for life-long learning
- ▶ A main problem is not only lack of information – it's at times too much, and sometimes conflicting
- ▶ Many clinical questions are relatively straight-forward and hence EB for a treatment decision can – and should – be easy to find. However, other are complex and requires access to multi-dimensional information
- ▶ Current information sources have different scopes and formats, which are not directly applicable to many facets of clinical dental decision-making