

Seminar i Samfunnsodontologi  
Mars 6, 2014

# Klinisk epidemiologi og klinisk praksis

Asbjørn Jokstad  
Institutt for klinisk odontologi  
UIT, Norges arktiske universitet

# *Hva danner basis for klinisk praksis?*

1. Hva finnes?
2. Hvordan vet vi det?
3. Hvorfor skal jeg?

# *Hva danner basis for klinisk praksis?*

En refleksjon av de tre grunnleggende spørsmålene som blir stilt i filosofi:

1. Hva finnes? (ontologi)
2. Hvordan vet vi det? (epistemologi)
3. Hvorfor skal jeg? (etikk og etiske valg)

*4-5-åringene er våre fremste filosofer!*

*Studenter : still de samme spørsmålene!*

# *Hva danner basis for klinisk praksis?*

En refleksjon av de tre grunnleggende spørsmålene som blir stilt i filosofi:

1. Hva finnes? (ontologi)
2. Hvordan vet vi det? (epistemologi)
3. Hvorfor skal jeg? (etiske **behandlings-valg**)

1. Hva finnes? (ontologi)
2. Hvordan vet vi det?? (epistemologi)
3. Hvorfor skal jeg? (etiske behandlingsvalg)

Hvordan har det seg at medisinsk-odontologisk teori og praksis som blir undervist ved ulike skoler og ofte av ulike lærere er forskjellig?

# Grunnlaget for medisinsk praksis endrer seg uavbrutt

Blir dette reflektert i vår undervisning av god klinisk praksis?

Klinisk praksis og undervisning i helsefag er innkorporerer ny forskning, men reflekterer også i høy grad endringer i samfunnet

# Filosofi/Filosofier (meget komprimert!)

## 18. århundre: Opplysningstiden

Tro på menneskets evner og fremme av renessansens humanistiske idealer i et samfunnsmessig perspektiv

Filosofier: George Berkeley, Thomas Paine, Voltaire, Jean-Jacques Rousseau, David Hume...



# Filosofi/Filosofier (meget komprimert!)

## 18. århundre: Opplysningstiden

Krig og elendighet

## 19. århundre: Skeptisisme

Generell skepsis mot bestemte ideer og dogmer.

Nietzsche (1883): "*Gud er død*"

# Filosofi/Filosofier (meget komprimert!)

## 18. århundre: Opplysningstiden

Krig og elendighet

## 19. århundre: Skeptisisme

Mere krig og elendighet og folkemord

## 20. århundre: Kulturell og strukturell kritikk av rådende ontologi & epistemologi

Modernisme (Ihab Hassan)

Postmodernisme (Jean-F Lyotard)

Poststrukturalisme (Michel Foucault /Jacques Derrida)

# Filosofi/Filosofer (meget komprimert!)

## 18. århundre: Opplysningstiden

Krig og elendighet

## 19. århundre: Skeptisisme

Mere krig og elendighet og folkemord

## 20. århundre: Kulturell og strukturell kritikk av rådende ontologi & epistemologi innen vitenskapsteori

Modernisme (I Hassan / **Karl Popper** (1902-1994) / **Thomas Kuhn** (1922-1996))

Postmodernisme (Jean-F Lyotard)

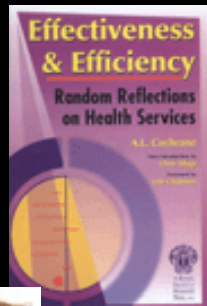
Poststrukturalisme (M Foucault / J Derrida)

# Kulturell og strukturell kritikk av rådende ontologi & epistemologi **innen medisinsk teori og praksis**



1967

Alvan Feinstein: *Clinical Judgment*. Stiller spørsmål om gyldigheten av resonnementer brukt innen medisin og innen klinisk vurderinger og -valg



1972

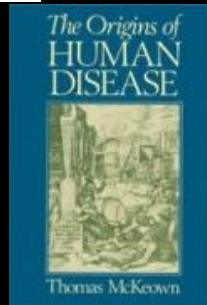
Archie Cochrane: Stiller spørsmål ved kunnskapsbasisen for medisinsk praksis, og etterlyser en mer rigorøs evaluering av effektiviteten av medisinske intervensjoner.



1973

Boston Women's Health Book Collective.

Beskriver hvordan helsetjenesten og forskningen innen medisin er dominert av menn og hvordan kvinner må endre situasjonen .



1976

Tom McKeown: Stiller spørsmål ved medisinsens rolle i lys av at forbedringer av helse på befolkningsnivå er like mye, om ikke mer, avhengig av sosiale forhold og miljø enn av helsetjeneste?

Kulturell og strukturell kritikk av  
rådende ontologi & epistemologi  
innen medisinsk undervisning

# Flexner- rapporten 1910

MEDICAL EDUCATION  
IN THE  
UNITED STATES AND CANADA

A REPORT TO  
THE CARNEGIE FOUNDATION  
FOR THE ADVANCEMENT OF TEACHING

BY  
ABRAHAM FLEXNER

WITH AN INTRODUCTION BY  
HENRY S. PRITCHETT  
PRESIDENT OF THE FOUNDATION

BULLETIN NUMBER FOUR

200 FIFTH AVENUE  
NEW YORK CITY



- Medisinsk undervisning og praksis må være basert på pato-fysiologisk lære
- Erkjennelse av det finnes svært få effektive kurative behandlinger
- Derfor vektlegging av basale fag til fortrenngsel av kliniske
- Fortsatt mange undervisnings-institusjoner globalt som følger prinsippet



Abraham  
Flexner

# Kulturell og strukturell kritikk av rådende ontologi & epistemologi innen medisinsk undervisning

Problem-basert læring (PBL) ~1965-1970

*Traditional medical education disenchant students, who perceive the vast amount of material presented in the first three years of medical school as having little relevance to the practice of medicine and clinically based medicine.*



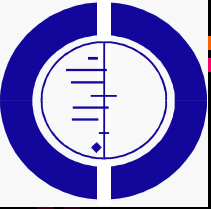
Howard Barrows  
McMaster University, Hamilton, Ontario, Canada

# Kulturell og strukturell kritikk av rådende ontologi & epistemologi **innen** **dagsaktuell medisinsk behandling**



Cochrane samarbeidet  
Etablert i 1992





# "Forest Plot"

Studie

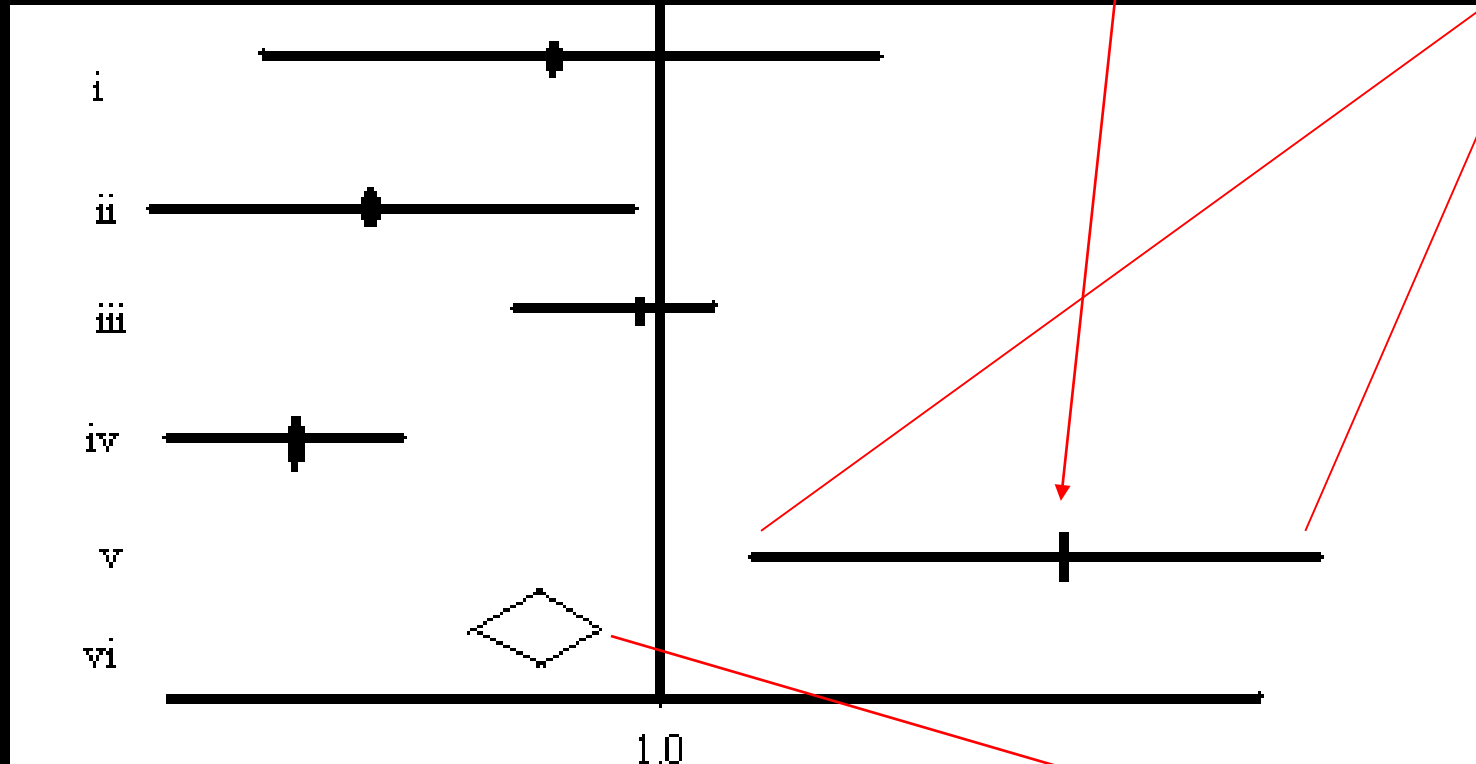
1

2

3

4

5



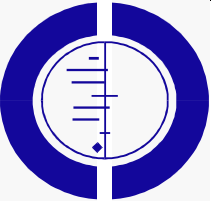
Gjn.snitt forskjell & Konfidensintervall

Ny  
intervensjon  
bedre

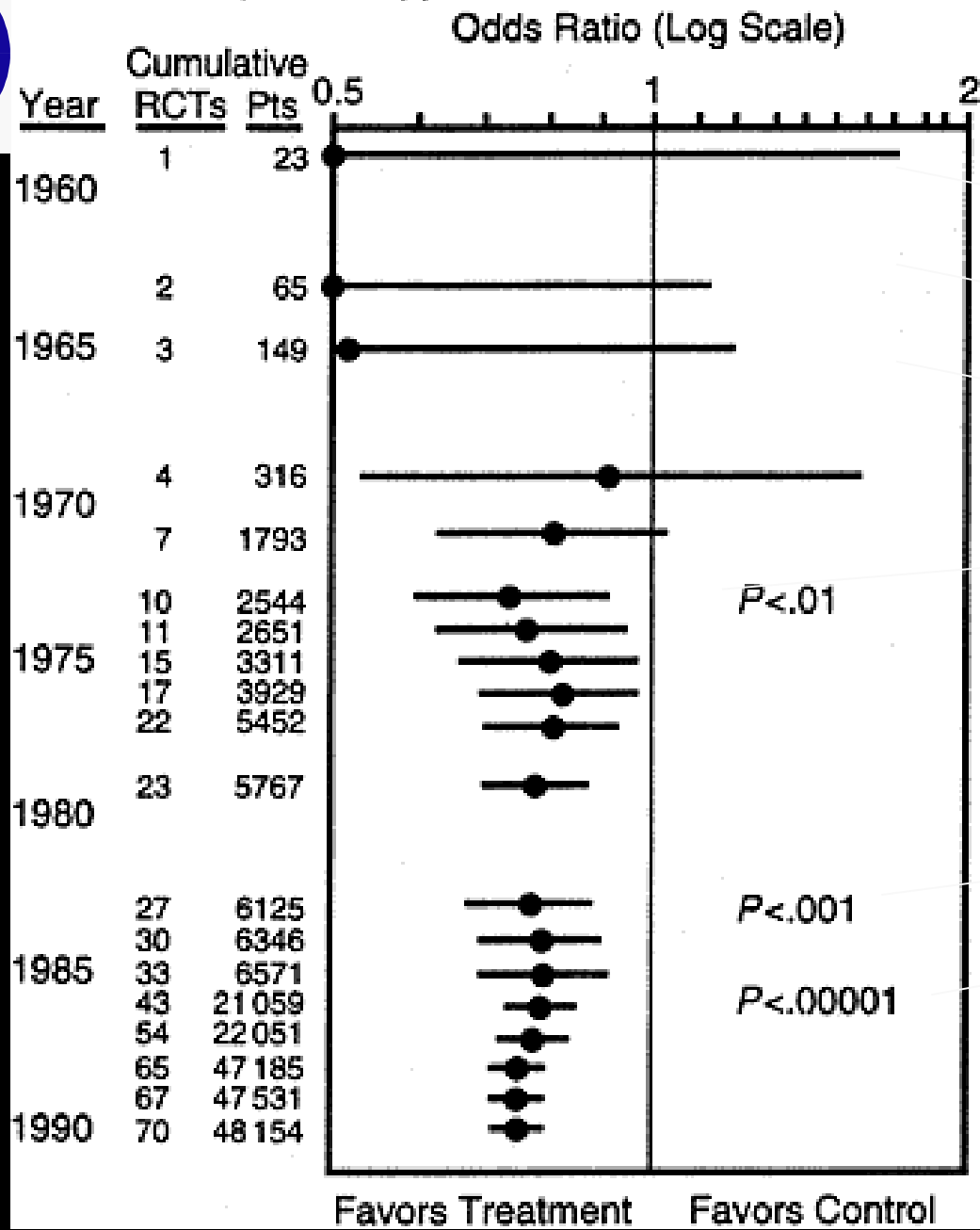
← | →  
Ingen  
forskjell

Kontroll-  
intervensjon  
bedre

"Diamant" =  
akkumulert snitt &  
konfidensintervall



# Thrombolytic Therapy



Hjelper trombolytisk terapi mot hjerteinfarkt?

Sannsynligvis

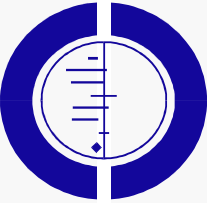
Sannsynligvis

Sannsynligvis

Ja stor sannsynlighet

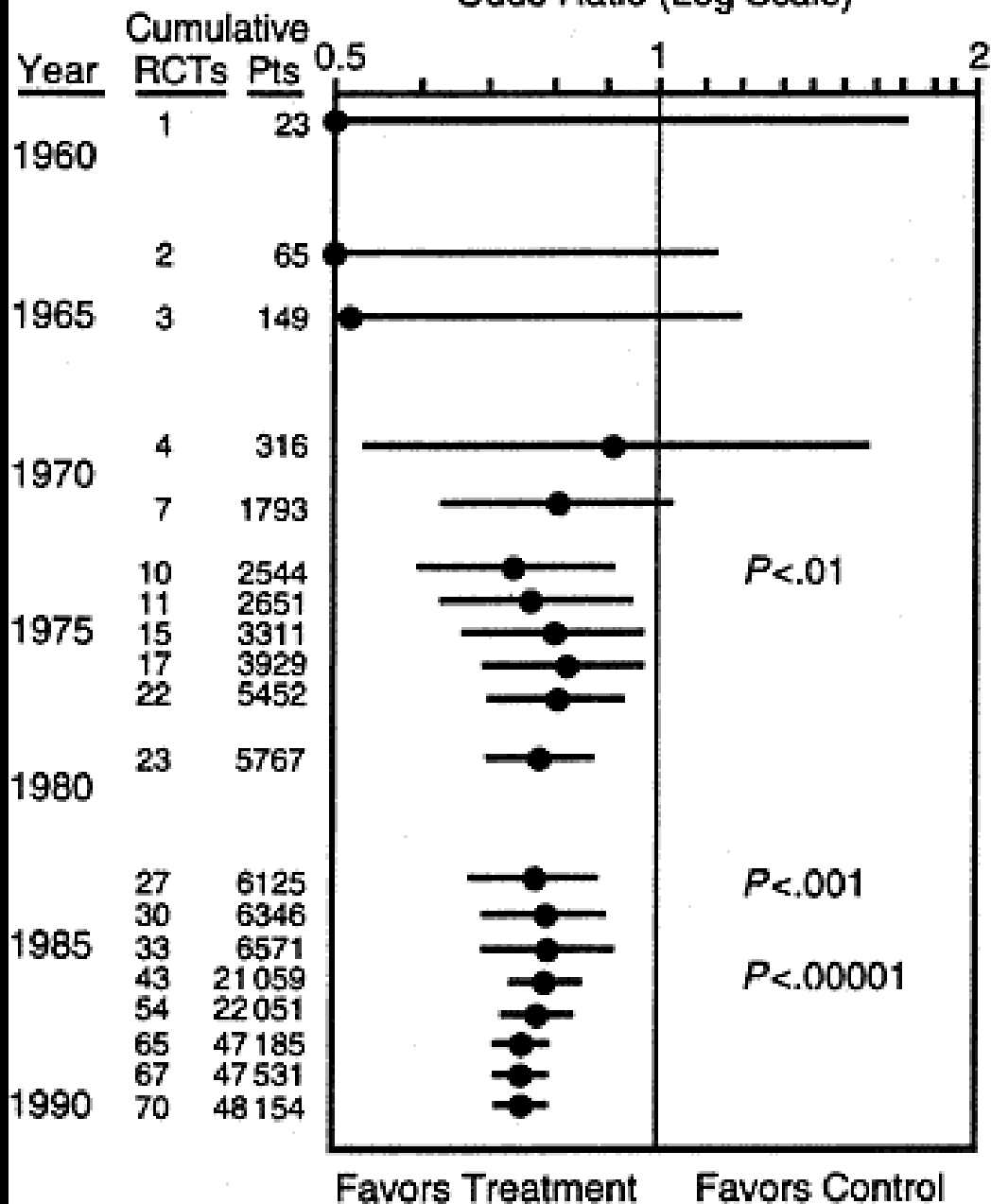
Ja absolutt

Ja udiskutabelt



# Thrombolytic Therapy

Odds Ratio (Log Scale)

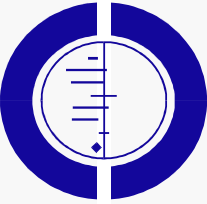


Favors Treatment

Favors Control

## Textbook/Review Recommendations

	Routine	Specific	Rare/Never	Experimental	Not Mentioned
					21
					5
				1	10
				1	2
				2	8
					7
					8
		1			12
M		1		8	4
M		1		7	3
M	5	2		2	1
M	15	8			1
M	6	1			



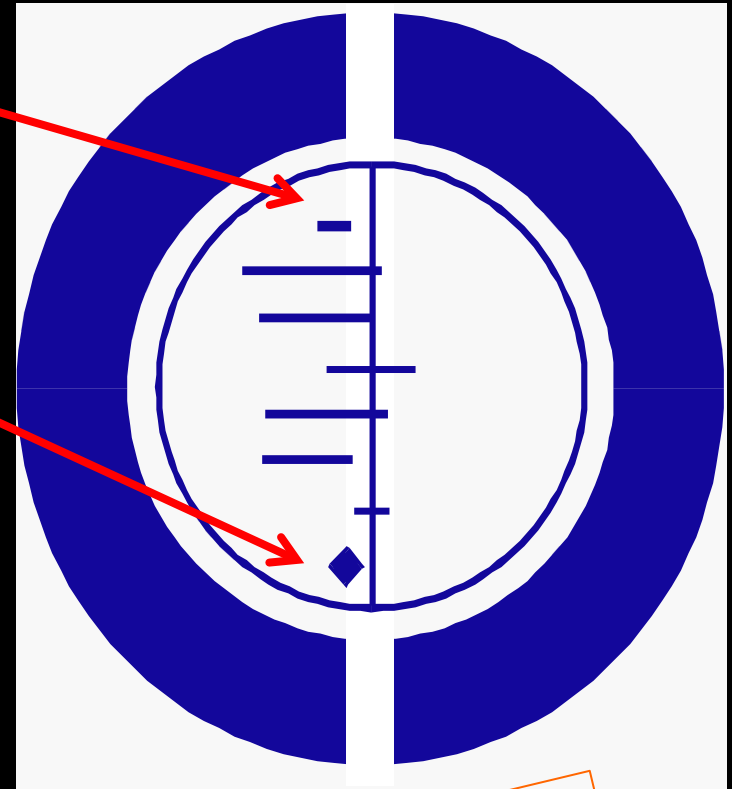
**I 1972** ble det publisert en klinisk studie som viste at en billig medisin (et kortikosteroid) som ble gitt til kvinner med utsikt til prematur fødsel ville bidra til å redusere komplikasjoner for det nyfødte barnet.

- ❑ Seks påfølgende studier ble utført over de neste 15 årene og publisert i medisinske fagtidsskrifter
- ❑ **I 1989** ble det gjort en systematisk oversikt som oppsummerte disse 7 studiene og fastslo uomtvistelig at å forskrive medisinen reduserte sjansene for dødfødsel pga komplikasjoner med 30-50%.
- ❑ Fordi den systematiske oversikten ikke ble publisert før i 1989 var flesteparten av fødselslegene ikke kjent med at behandlingen var så effektiv, til tross for at det forelå evidens allerede i 1972
- ❑ Som en konsekvens er det estimert at flere ti-talls tusen prematur-fødte barn ble pint og døde unødvendig i Storbritania alene

# Cochrane samarbeidet, historien bak logo

- 1972: Første RCT
- 1972-1989 + 6 RCTs
- 1989: Første SR
- Fødselsleger var ikke kjent med en effektiv behandling publisert 17 år tidligere
- Estimert at flere ti-talls tusen prematur-fødte barn ble pint og døde unødvendig

1  
2  
3  
4  
5  
6  
7



Uhørt!?

Er fordeling av skyld meningsfullt?

Hva må gjøres!?

Kulturell og strukturell kritikk av rådende ontologi & epistemologi innen medisinsk teori og praksis, samt medisinsk undervisning samt dagsaktuell medisinsk behandling

En ny strategi er påkrevet for at helsetjenesteutøvere skal raskt tilpasse klinisk praksis som en følge av kontinuerlige forandringer!

# Evidence-Based Medicine

J Am Med Assoc 1992

## A New Approach to Teaching the Practice of Medicine

Evidence-Based Medicine Working Group

A NEW paradigm for medical practice is emerging. Evidence-based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. Evidence-based medicine requires new skills of the physician, including efficient literature searching and the application of formal rules of evidence evaluating the clinical literature.

An important goal of our medical residency program is to educate physicians in the practice of evidence-based medicine. Strategies include a weekly, formal academic half-day for residents, devoted to learning the necessary skills; recruitment into teaching roles of physicians who practice evidence-based medicine; sharing among faculty of ap-

dose of phenytoin intravenously and the drug is continued orally. A computed tomographic head scan is completely normal, and an electroencephalogram shows only nonspecific findings. The patient is very concerned about his risk of seizure recurrence. How might the resident proceed?

### The Way of the Past

Faced with this situation as a clinical clerk, the resident was told by her senior resident (who was supported in his view by the attending physician) that the risk of seizure recurrence is high (though he could not put an exact number on it) and that was the information that should be conveyed to the patient. She now follows this path, emphasizing to the patient not to drive, to continue his medication, and to see his family

year is between 43% and 51%, and at 3 years the risk is between 51% and 60%. After a seizure-free period of 18 months his risk of recurrence would likely be less than 20%. She conveys this information to the patient, along with a recommendation that he take his medication, see his family doctor regularly, and have a review of his need for medication if he remains seizure-free for 18 months. The patient leaves with a clear idea of his likely prognosis.

### A PARADIGM SHIFT

Thomas Kuhn has described scientific paradigms as ways of looking at the world that define both the problems that can legitimately be addressed and the range of admissible evidence that may bear on their solution.<sup>4</sup> When defects in an existing paradigm accumulate to the

A NEW paradigm for medical practice is emerging. Evidence-based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. Evidence-based medicine requires new skills of the physician, including efficient literature searching and the application of formal rules of evidence evaluating the clinical literature.



A NEW paradigm for medical practice is emerging. Evidence-based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. Evidence-based medicine requires new skills of the physician, including efficient literature searching and the application of formal rules of evidence evaluating the clinical literature.

# Klinisk epidemiologi:

The application, by a physician who provides direct patient care, of epidemiologic and biostatistical methods to the study of diagnostic and therapeutic processes in order to effect an improvement in health.



David Sackett, 1968

McMaster University, Hamilton, Ontario, Canada

# Klinisk praksis



*Medicine is  
a science of uncertainty  
and  
an art of probability*

Sir William Osler  
John Hopkins Hospital  
(1849-1919)

Usikkerhet  
Sannsynlighet

*Doubt is not a pleasant  
condition,  
but  
certainty is an absurd one*

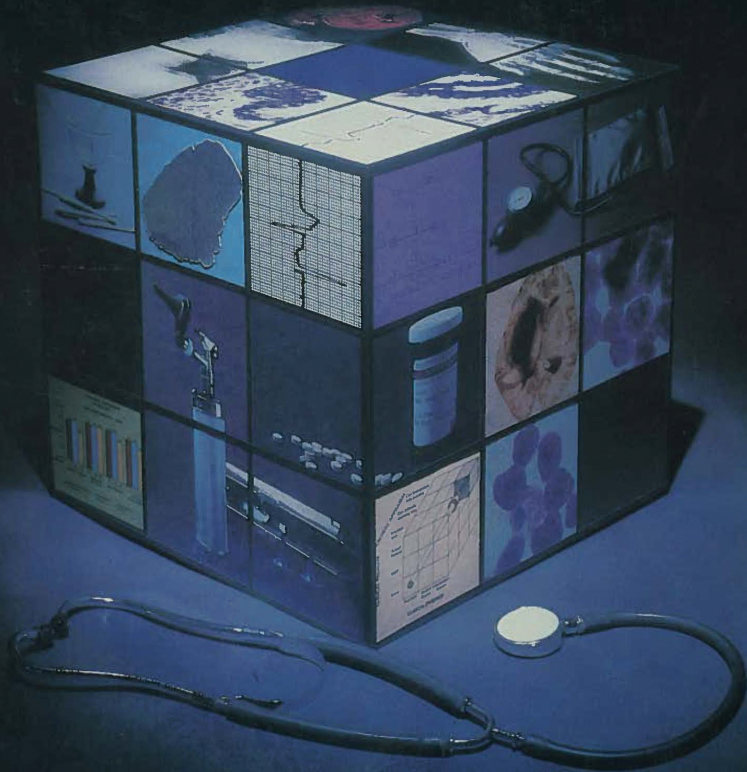
Voltaire

Frankrike, (1694-1778)

# CLINICAL EPIDEMIOLOGY

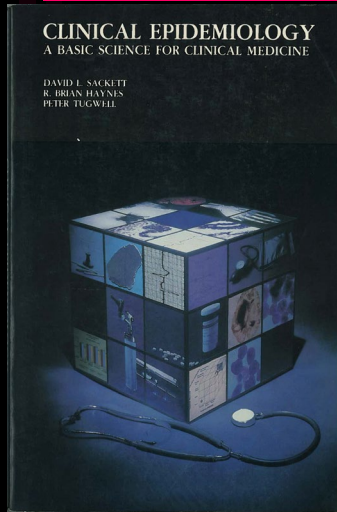
A BASIC SCIENCE FOR CLINICAL MEDICINE

DAVID L. SACKETT  
R. BRIAN HAYNES  
PETER TUGWELL



1985

THIS BOOK IS DEDICATED TO  
H. L. MENCKEN,  
KURT VONNEGUT, JR.,  
DOUGLAS ADAMS,  
AND THE EMPEROR'S NEW CLOTHES



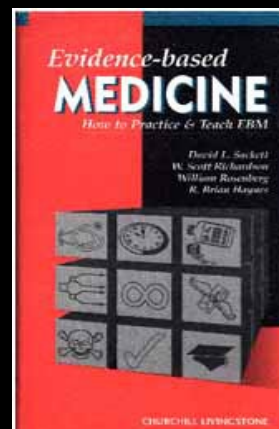
1985: 1<sup>st</sup>



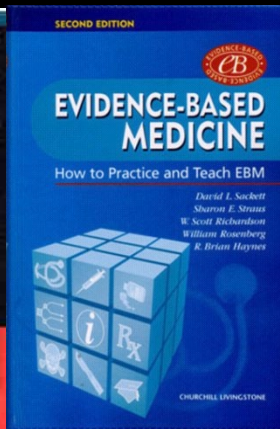
1991: 2<sup>nd</sup>



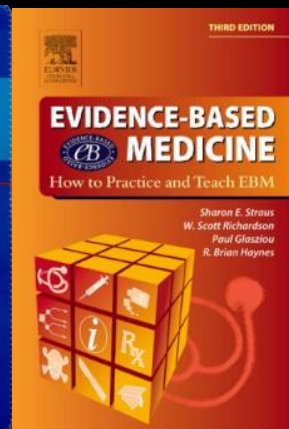
2005: 3<sup>rd</sup>



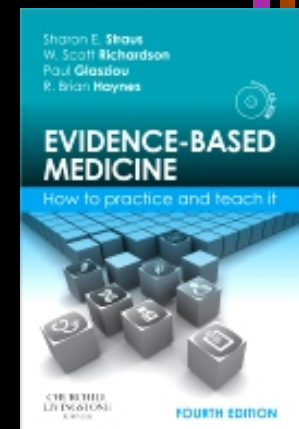
1997: 1<sup>st</sup>



2000: 2<sup>nd</sup>

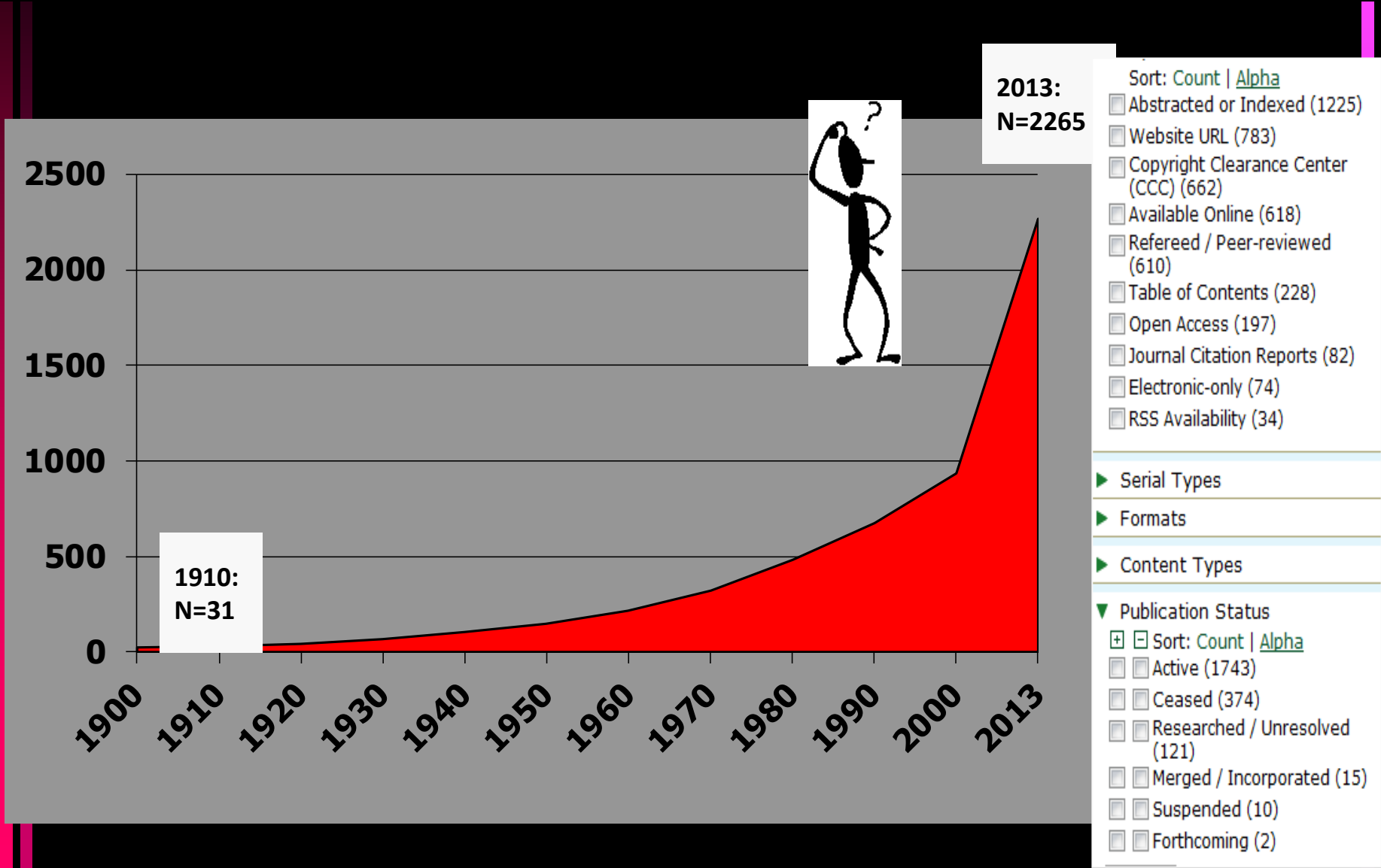


2005: 3<sup>rd</sup>



2011: 4<sup>th</sup>

# Ny kunnskap presentert (bare) innen odontologi



Source: Ulrich's International Periodicals Directory

# Informasjonseksplasjon – bakenforliggende årsak

Kraftig vekst av publikasjoner i medisin - inkludert innen odontologi

1. Antallet helsepersonnel og forskere øker globalt



2. Antallet (vitenskapelige) artikler er nøkkel til stilling, penger og ære



3. Publisering i dag er langt rimeligere enn tidligere



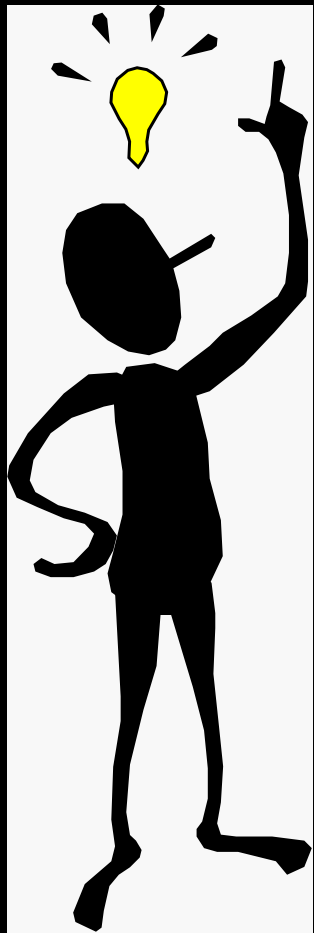
4. Antallet publikasjoner øker kontinuerlig, spesielt digitale

Vi må ikke bare ta stilling til  
mengden av informasjon vi  
mottar

men også  
kvaliteten på denne  
informasjonen



# En nyutdannet tannlege som ikke blir forberedt for en fremtid i forandring



Markedsføring  
"Pizza -kveld"

Fagleder/ lærer/  
instruktør-filtrert:

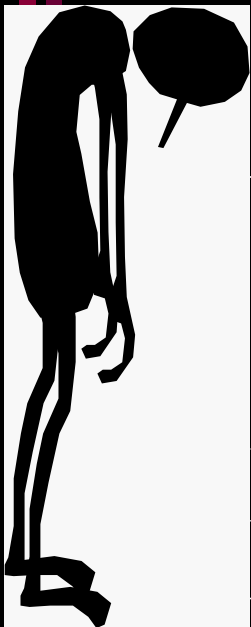
"Pensum"  
" Klassiske  
studier"

"Uheldig  
rollemodell i  
klinikken"

Sannheter  
Relative sannheter  
Usannheter

Dental  
'vitenskap'  
25 000 artikler/år

# Tannlegen som aldri ble forberedt for en fremtid i forandring



Markedsføring  
- produsent  
- kollegaer

Møter/  
kurs

Literatur

Kollegaer

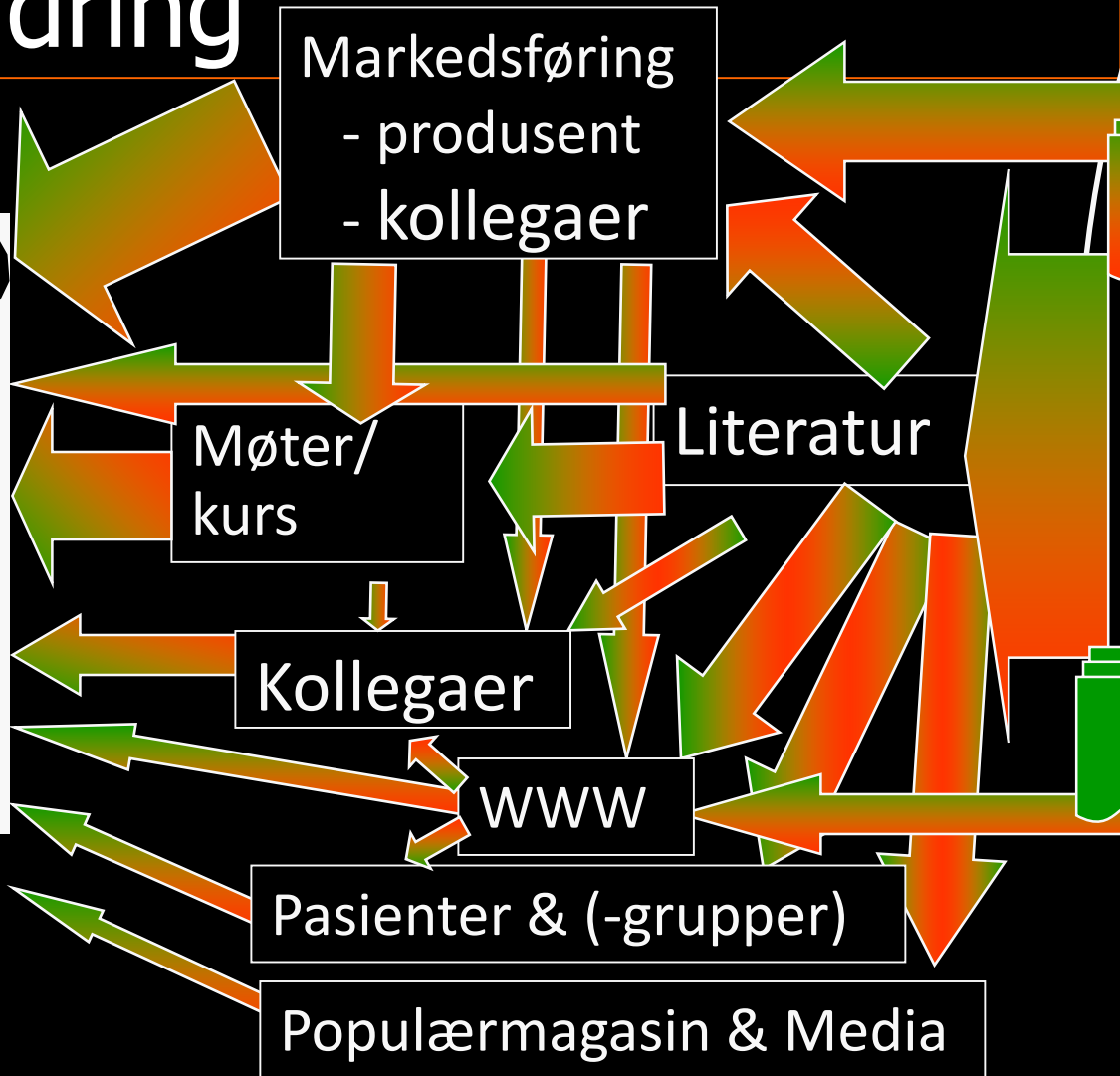
WWW

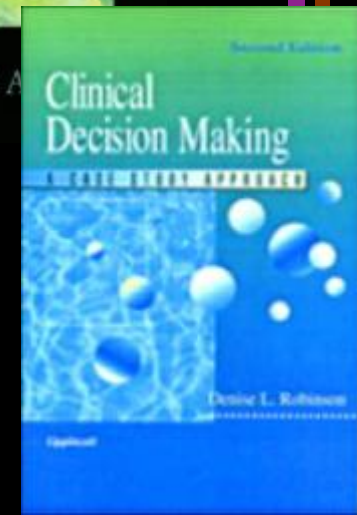
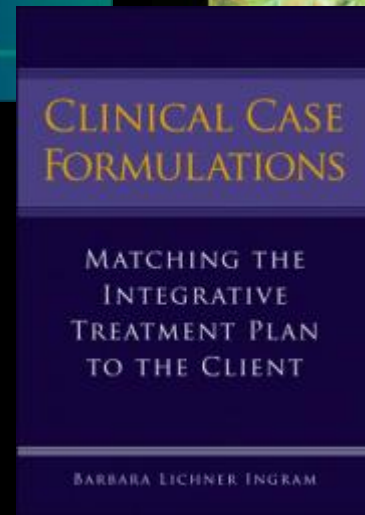
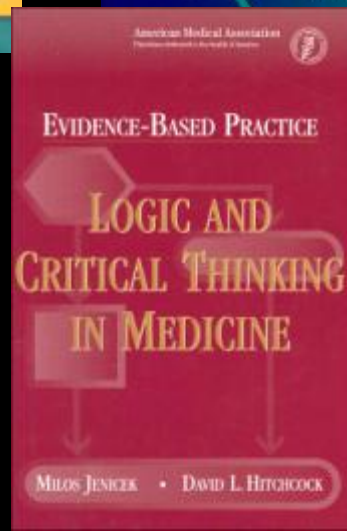
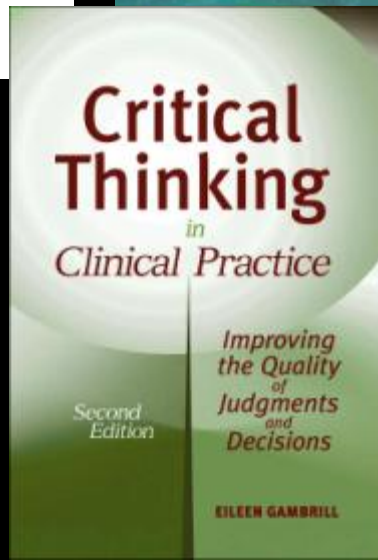
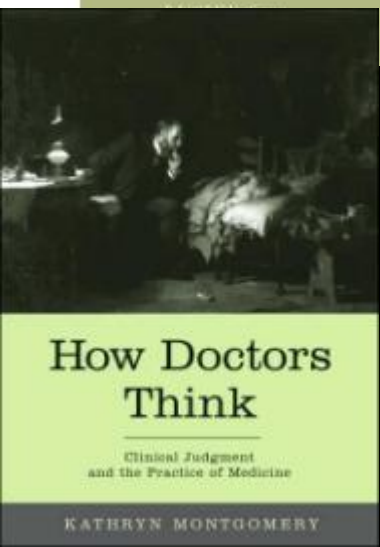
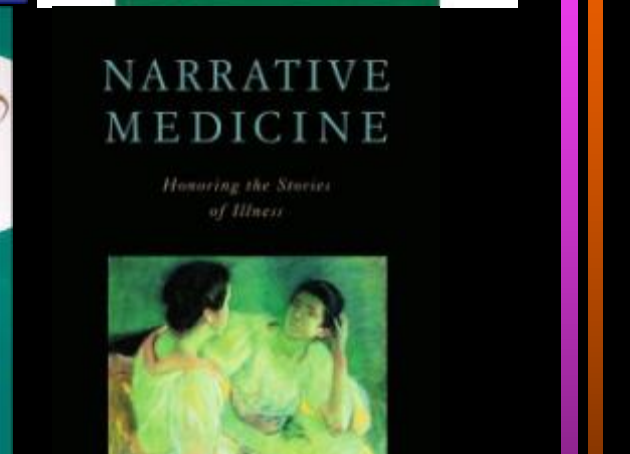
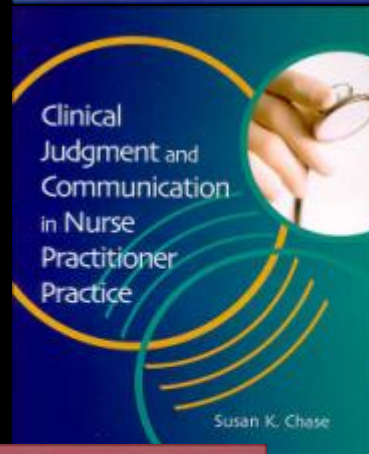
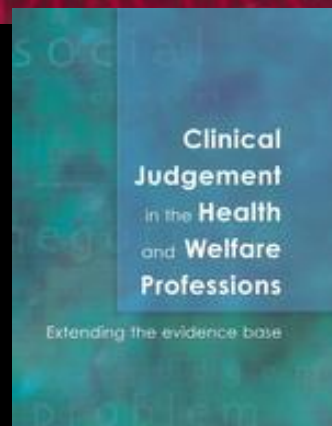
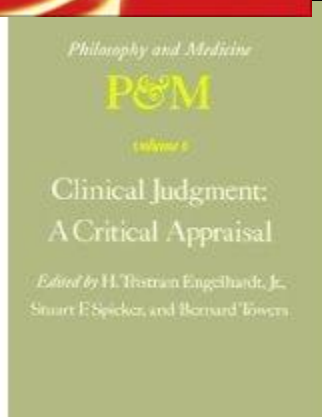
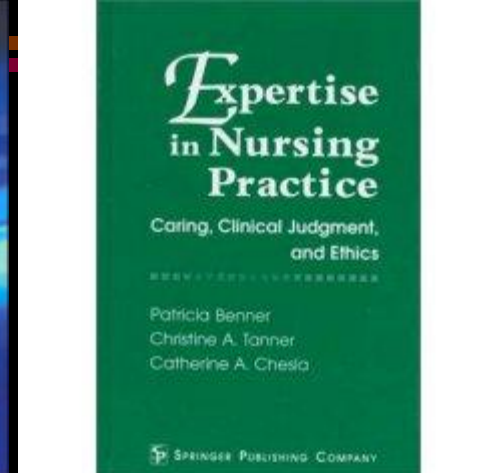
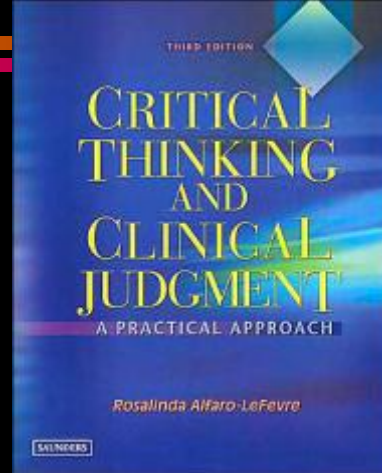
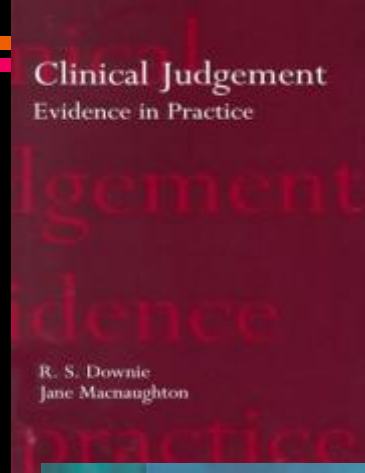
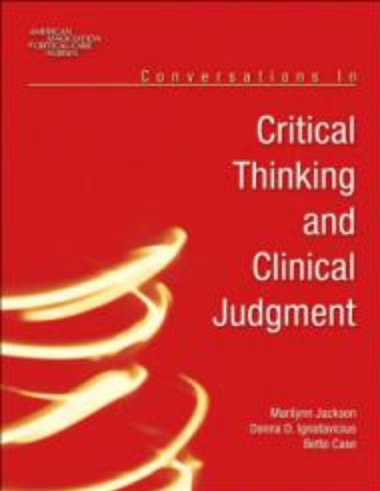
Pasienter & (-grupper)

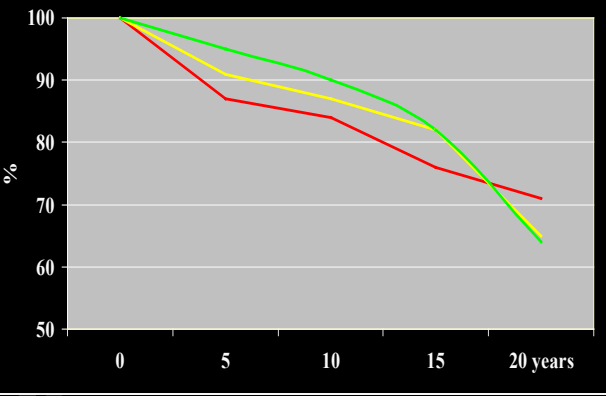
Populærmagasin & Media

Sannheter  
Relative sannheter  
Usannheter

Dental  
'vitenskap'  
25 000 artikler/år







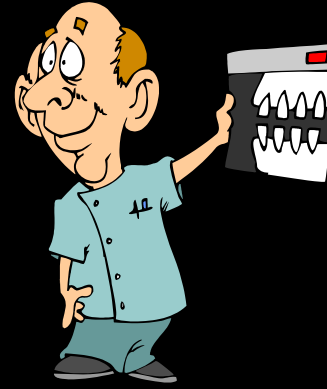
Independent variables	Bi-variate odds ratios	Bivariate significance	95% Confidence intervals bivariate odds ratios	Multi-variate odds ratios	Multivariate significance	95% Confidence intervals for multivariate odds ratios
Age group						
20-30	-	-	-	-	-	-
30-40	2.32	**	1.15 - 3.13	2.52	**	1.35 - 3.33
+40	2.63	***	1.43 - 3.08	2.63	***	1.83 - 3.8
Gender						
Male	-	-	-	-	-	-
Female	2.42	**	1.61 - 2.79	2.12	**	1.91 - 2.9
Material						
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
Dentists						
#1	-	-	-	-	-	-
#2	1.34	NS	0.35 - 1.61	1.04	NS	1.35 - 2.01
Location						
Mandible	-	-	-	-	-	-
Maxilla	1.55	*	1.17 - 2.04	1.15	*	1.57 - 2.14



# Longevity



# Risk factors

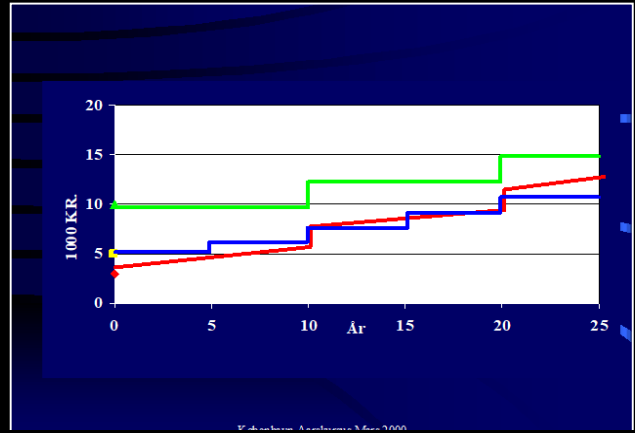


# Outcomes probabilities

Arriving at informed clinical choice



# QOL



# Incremental Cost



# Worst Case Scenario

# Hva påvirker klinikernes behandlings-preferanse?

Vitenskapelig kunnskap

Tilgjengelige  
Ressurser

Tilsyn

Betalingsystem

Utdanning

Erfaring

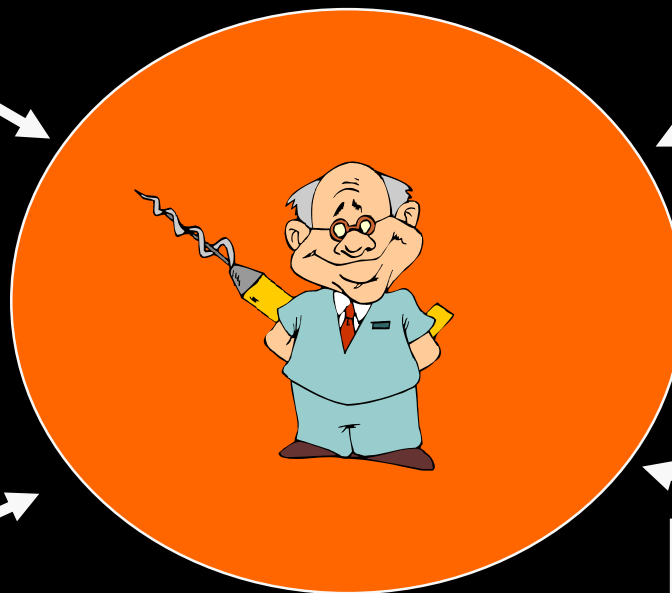
Den siste pasienten



Norsk  
Pasientskadeerstatning

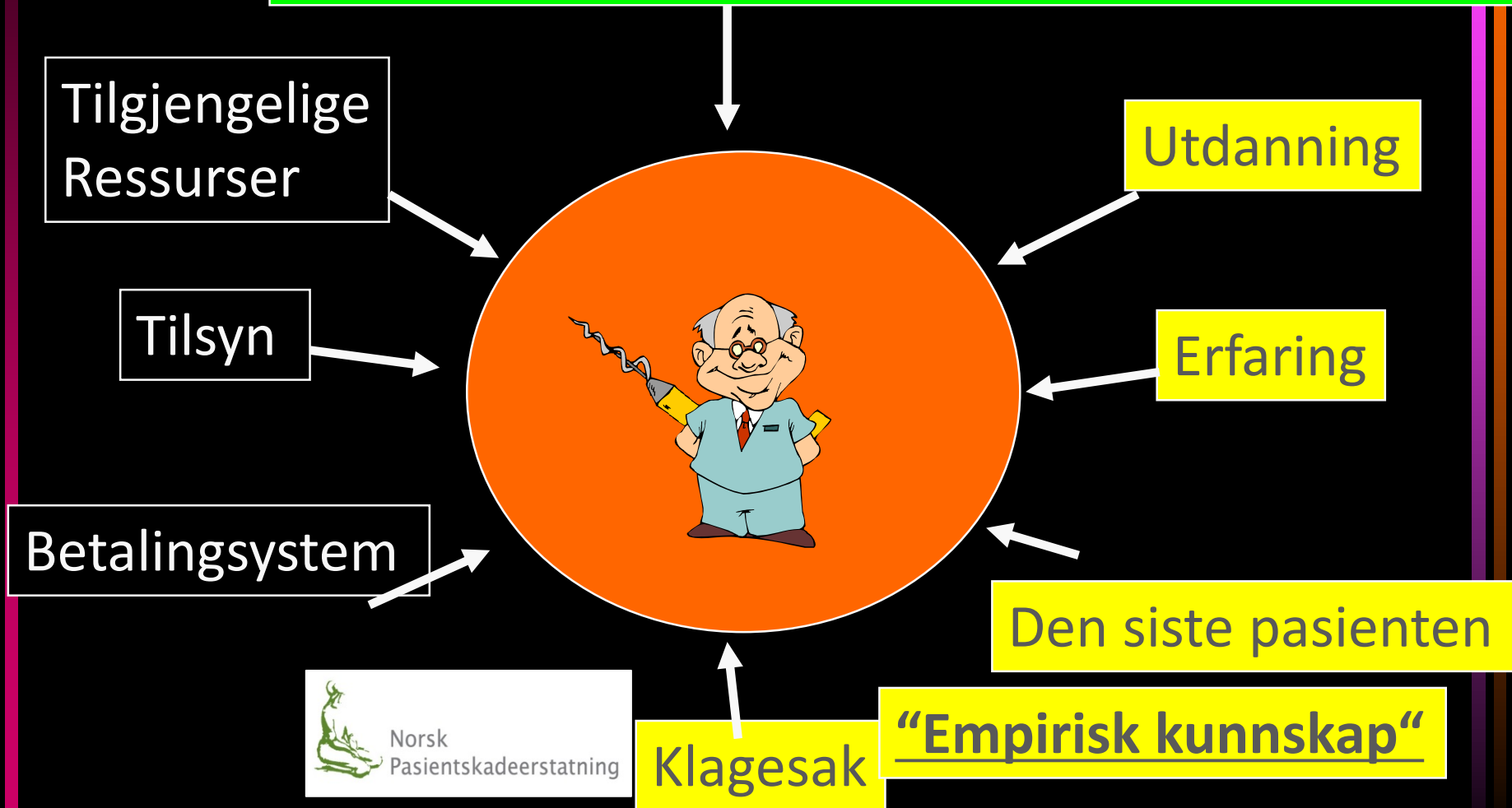
Klagesak

“Empirisk kunnskap”

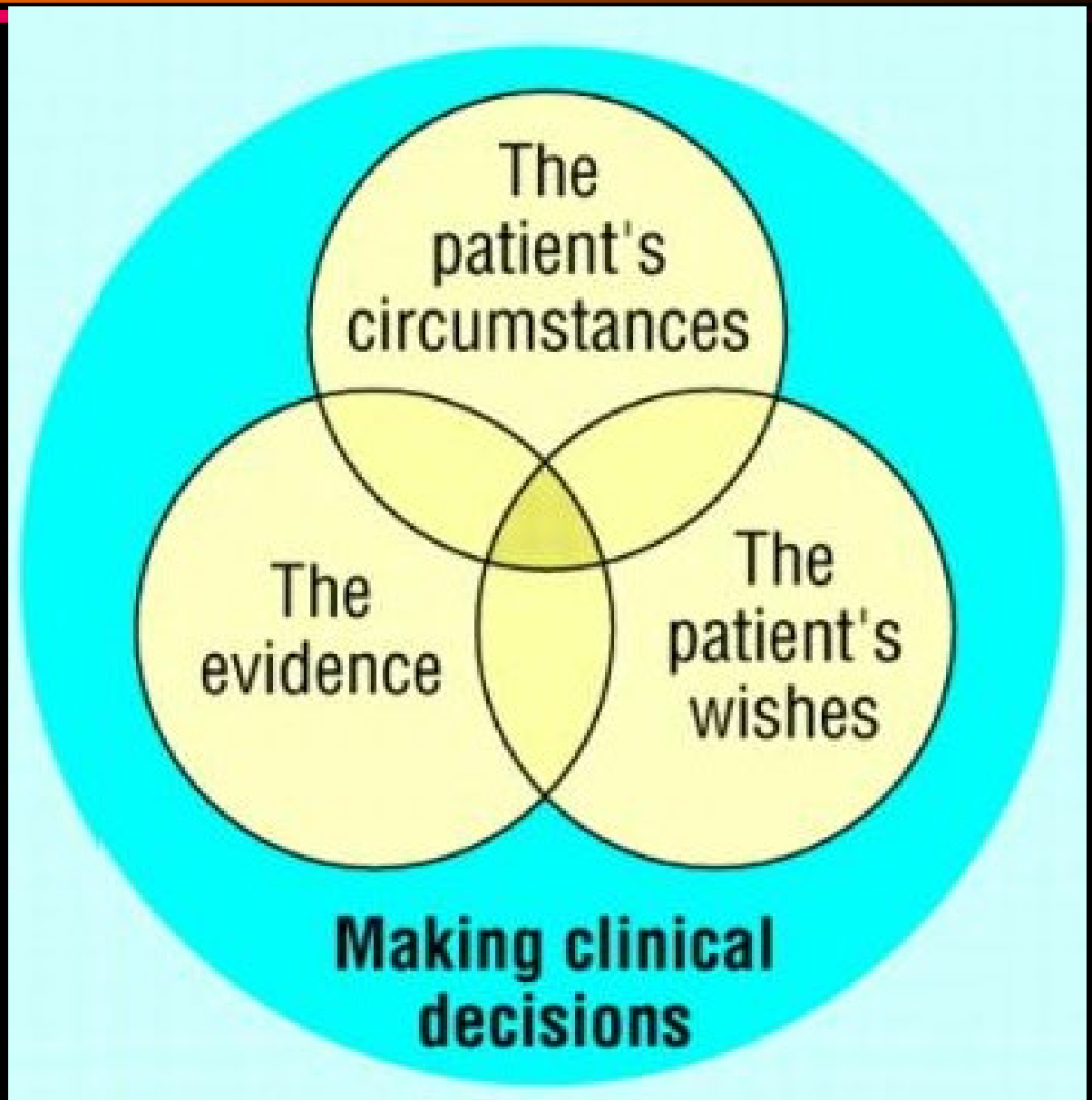


# Hva påvirker klinikerens behandlings-preferanse?

Vitenskapelig kunnskap – Evidens-basert praksis



Evidens-  
Basert  
Praksis:



Vitenskapelige studier kan  
graderes etter  
teoretisk sannsynlighet  
for  
feil konklusjon

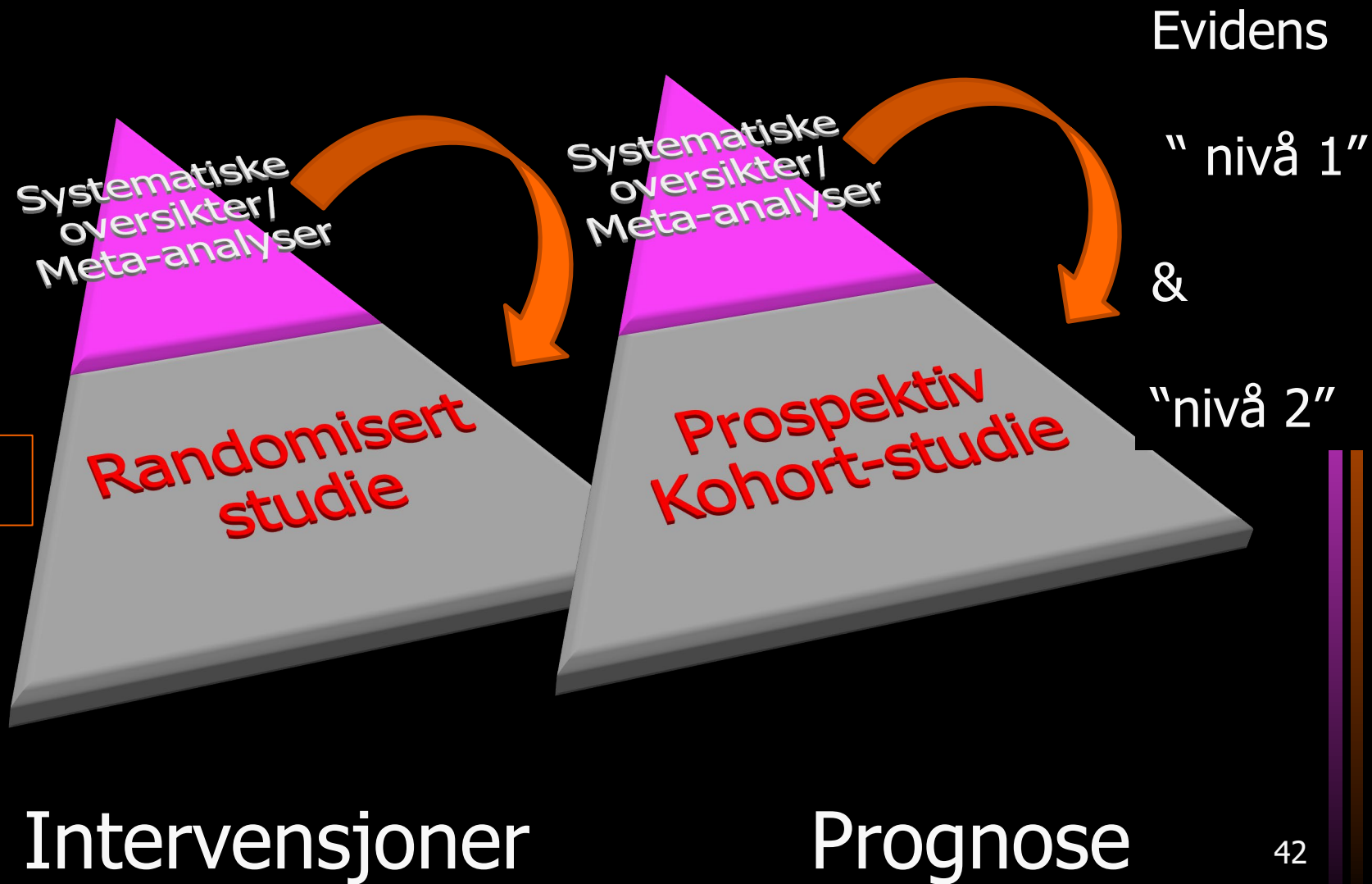
Dette vil avhengig av  
studiedesign

...vi vil aldri vite eksakte svar innen vitenskap....

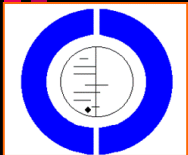


Level	Therapy/Prevention, Aetiology/Harm	Prognosis	Diagnosis	Differential diagnosis/symptom prevalence study	Economic and decision analyses
1a	SR (with <u>homogeneity*</u> ) of RCTs	SR (with <u>homogeneity*</u> ) of inception cohort studies; <u>CDR†</u> validated in different populations	SR (with <u>homogeneity*</u> ) of Level 1 diagnostic studies; <u>CDR†</u> with 1b studies from different clinical centres	SR (with <u>homogeneity*</u> ) of prospective cohort studies	SR (with <u>homogeneity*</u> ) of Level 1 economic studies
1b	Individual RCT (with narrow <u>Confidence Interval†</u> )	Individual inception cohort study with ≥ 80% follow-up; <u>CDR†</u> validated in a single population	Validating** cohort study with <u>good†††</u> reference standards; or <u>CDR†</u> tested within one clinical centre	Prospective cohort study with good follow-up****	Analysis based on clinically sensible costs or alternatives; systematic review(s) of the evidence; and including multi-way sensitivity analyses
1c	<u>All or none§</u>	All or none case-series	Absolute SpPins and SnNouts††	All or none case-series	Absolute better-value or worse-value analyses ††††
2a	SR (with <u>homogeneity*</u> ) of cohort studies	SR (with <u>homogeneity*</u> ) of either retrospective cohort studies or untreated control groups in RCTs	SR (with <u>homogeneity*</u> ) of Level >2 diagnostic studies	SR (with <u>homogeneity*</u> ) of 2b and better studies	SR (with <u>homogeneity*</u> ) of Level >2 economic studies
2b	Individual cohort study (including low quality RCT; e.g., <80% follow-up)	Retrospective cohort study or follow-up of untreated control patients in an RCT; Derivation of <u>CDR†</u> or validated on <u>split-sample§§§</u> only	Exploratory** cohort study with <u>good†††</u> reference standards; <u>CDR†</u> after derivation, or validated only on <u>split-sample§§§</u> or databases	Retrospective cohort study, or poor follow-up	Analysis based on clinically sensible costs or alternatives; limited review(s) of the evidence, or single studies; and including multi-way sensitivity analyses
2c	"Outcomes" Research; Ecological studies	"Outcomes" Research		Ecological studies	Audit or outcomes research
3a	SR (with <u>homogeneity*</u> ) of case-control studies		SR (with <u>homogeneity*</u> ) of 3b and better studies	SR (with <u>homogeneity*</u> ) of 3b and better studies	SR (with <u>homogeneity*</u> ) of 3b and better studies
3b	Individual Case-Control Study		Non-consecutive study, or without consistently applied reference standards	Non-consecutive cohort study, or very limited population	Analysis based on limited alternatives or costs, poor quality estimates of data, but including sensitivity analyses incorporating clinically sensible variations.
4	Case-series (and <u>poor quality cohort and case-control studies§§</u> )	Case-series (and <u>poor quality prognostic cohort studies***</u> )	Case-control study, poor or non-independent reference standard	Case-series or superseded reference standards	Analysis with no sensitivity analysis
5	Expert opinion without explicit critical appraisal, or based on physiology.	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on economic theory or "first principles"

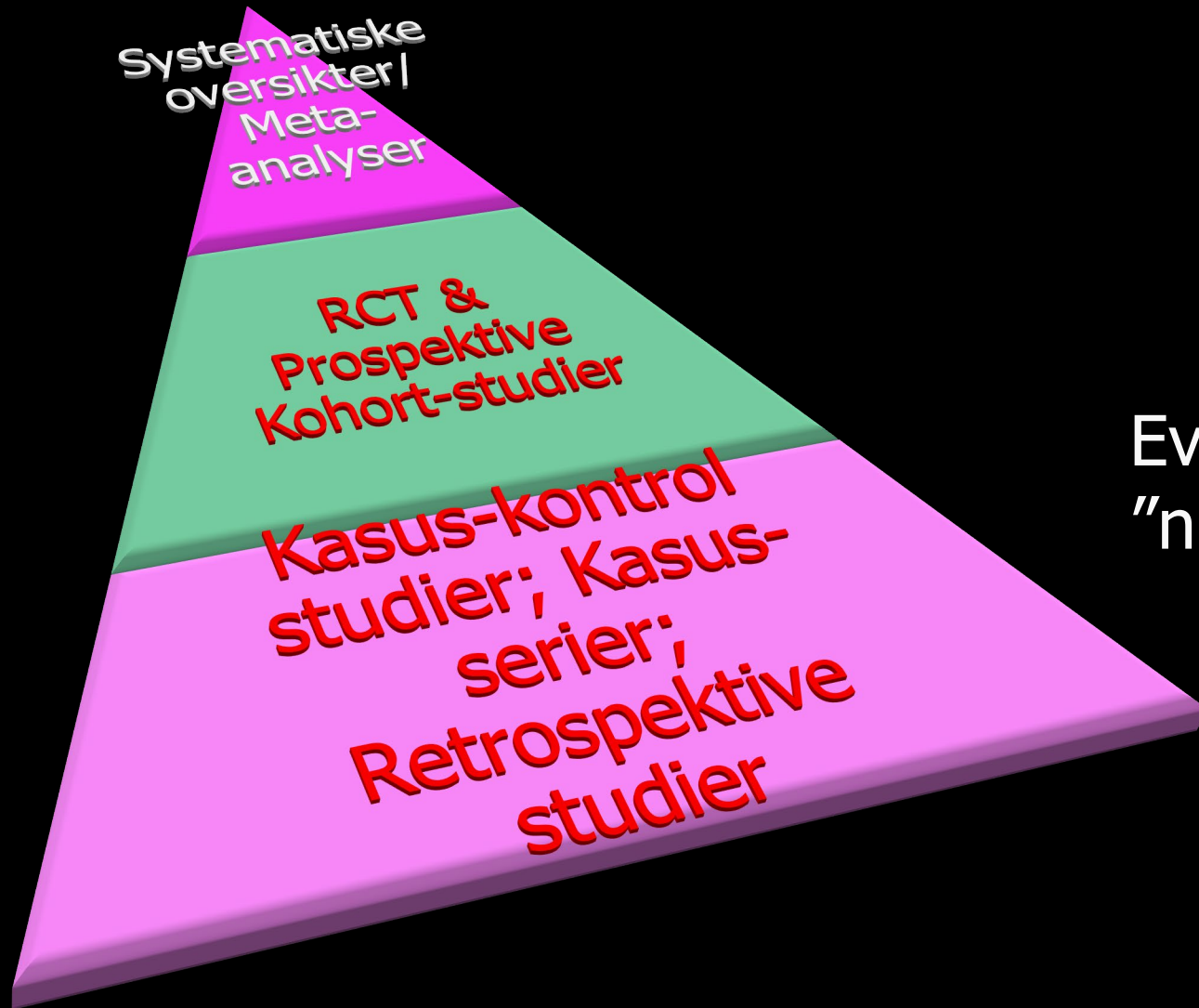
# Tiltro til medisinsk informasjon for å besvare kliniske problemstillinger



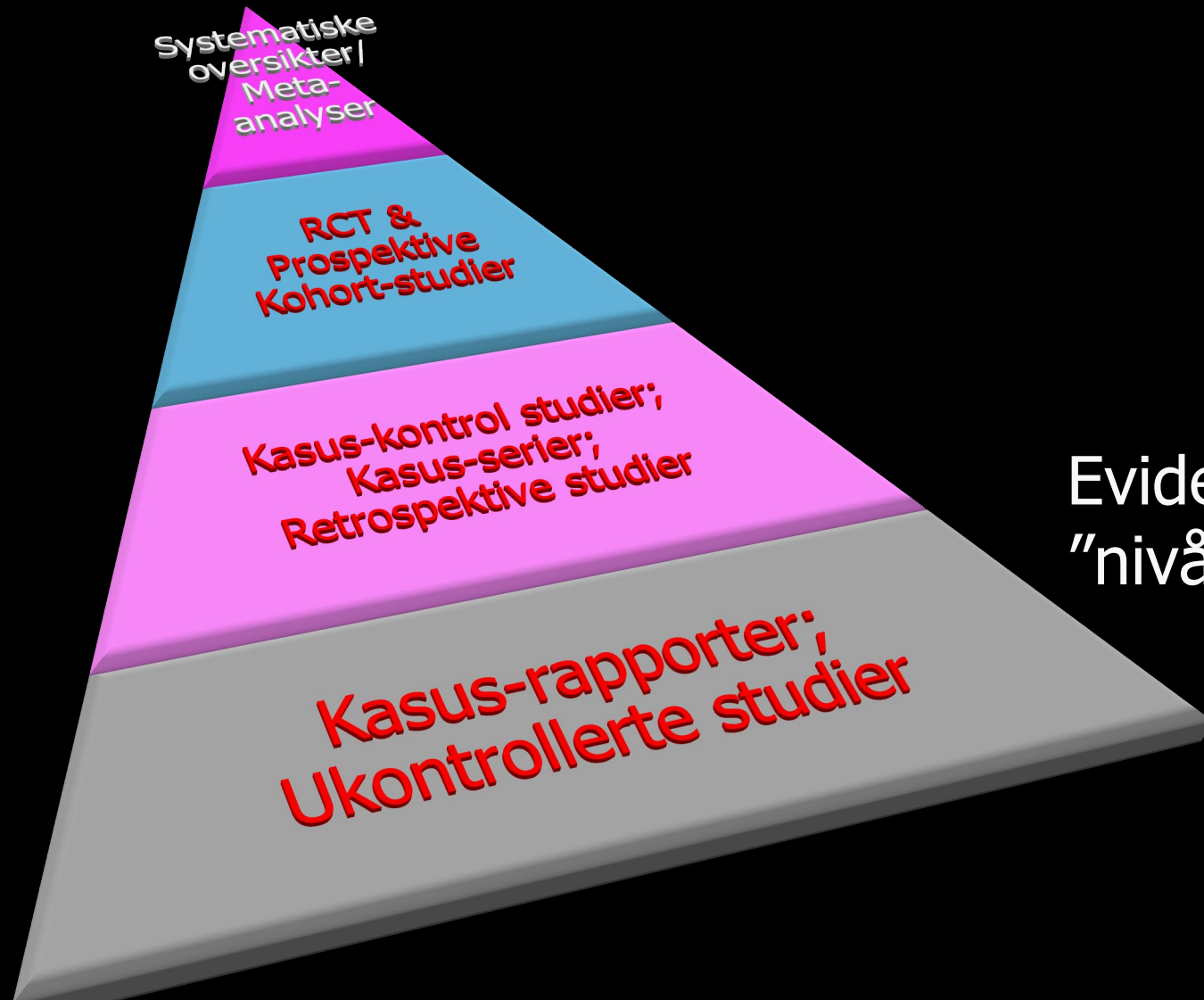
Cochrane  
Collaboration



# Tiltro til medisinsk informasjon for å besvare kliniske problemstillinger

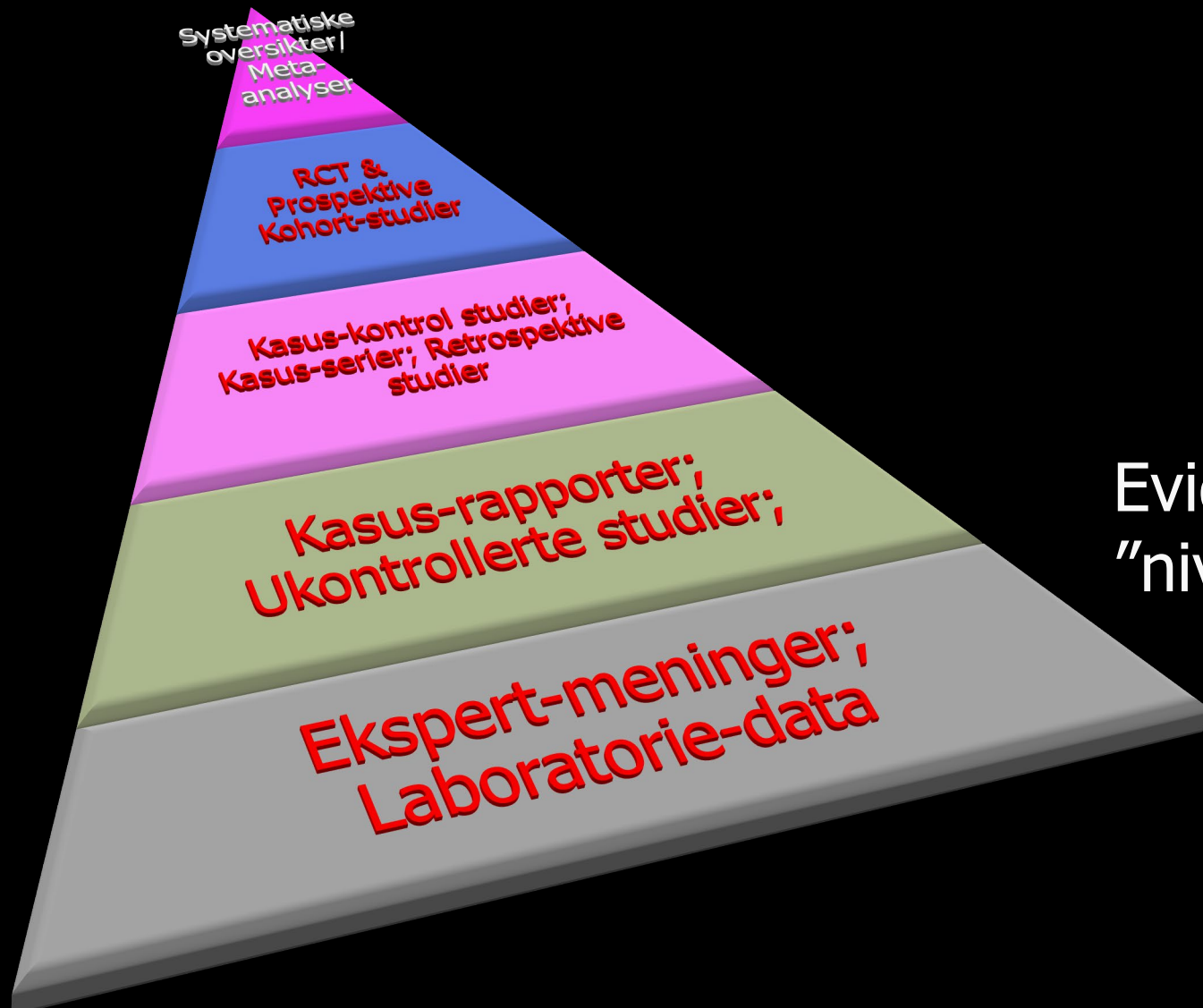


# Tiltro til medisinsk informasjon for å besvare kliniske problemstillinger

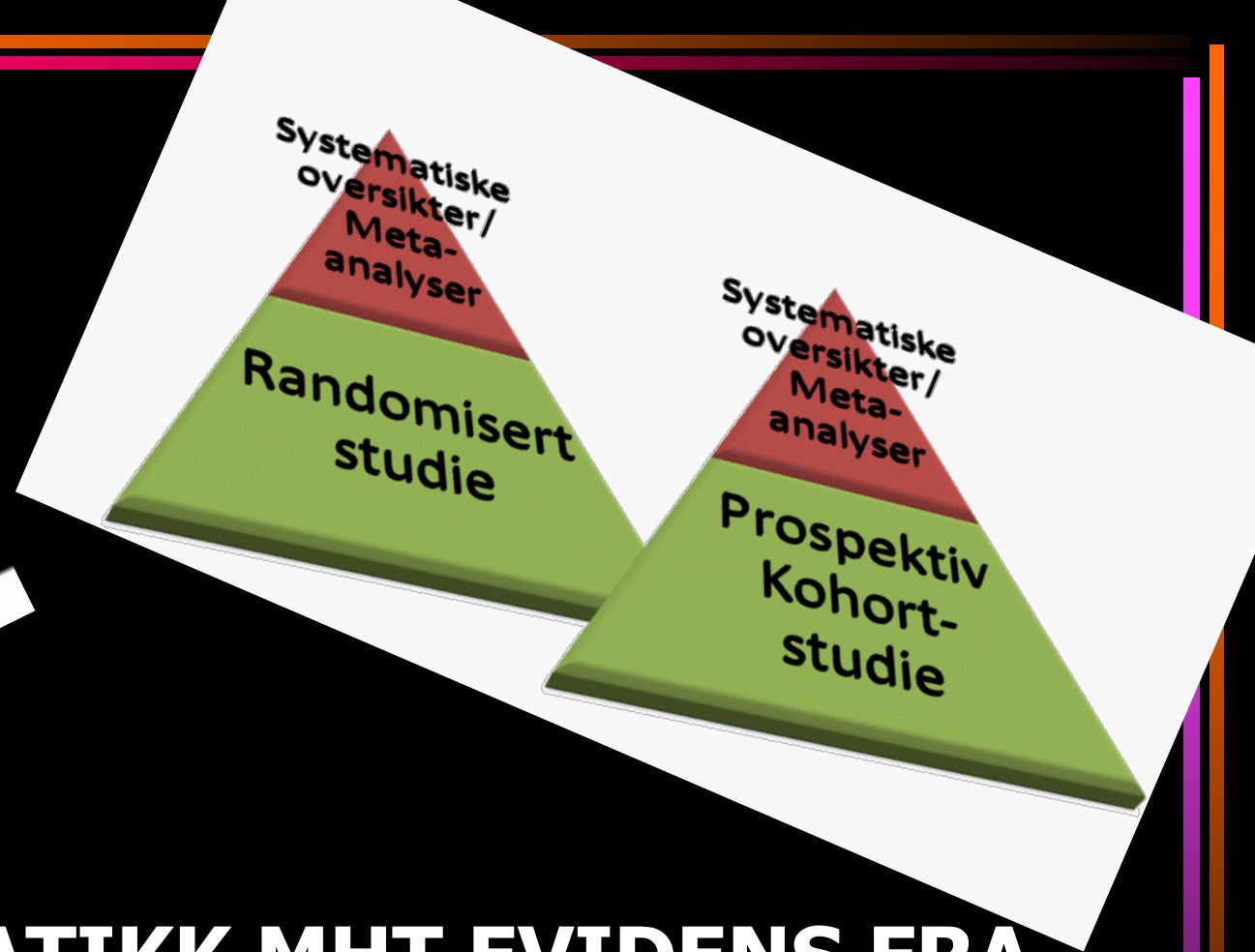
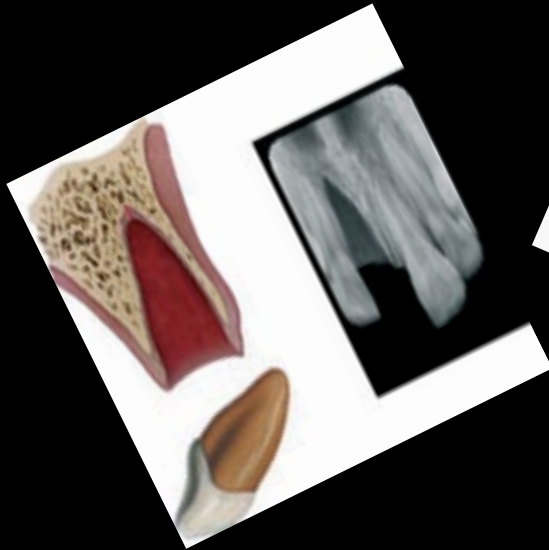


Evidens  
"nivå 4"

# Tiltro til medisinsk informasjon for å besvare kliniske problemstillinger

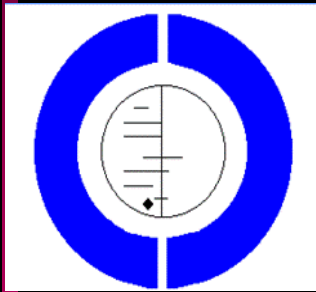


Evidens  
"nivå 5"



**PROBLEMATIKK MHT EVIDENS FRA  
KLINISKE STUDIER F.EKS OPTIMAL  
BEHANDLING AV TANNKADER**

# Vitenskapelig kunnskap og evidensnivå



Day P, Duggal M. Interventions for treating traumatised permanent front teeth: avulsed (knocked out) and replanted. Cochrane Database Syst Rev 2010

n=3

de Souza RF, ea. Interventions for treating traumatised ankylosed permanent front teeth. Cochrane Database Syst Rev 2010.

n=0

# Randomiserte kliniske studier

Er bare gjennomførbare hvis

1. Forskere er usikre\* fordi det ikke foreligger entydige vitenskapelige data
2. Gode indikatorer for at en ny behandling er bedre enn en etablert metode ("kontroll")

\*"Equipoise" =  $\sim$  "faglig usikkerhet"



# Randomiserte kliniske studier

Er bare gjennomførbare hvis

1. Forskere er usikre\* fordi det ikke foreligger entydige vitenskapelige data
2. Gode indikatorer for at en ny behandling er bedre enn en etablert metode ("kontroll")
3. Potensielle deltakere i studien har ingen preferanser mht behandlings-alternativene
4. Potensielle klinikere i studien har ingen preferanser mht behandlings-alternativene

\*"Equipoise" =  $\sim$  "faglig usikkerhet"

# Optimale studiedesign

	Kvalitativ	Tverrsnitt	Kasus-kontroll	Kohort	Random kontroll
Diagnostikk				☆	☆☆
Terapi / Forebygging				☆	☆☆☆
Prognose				☆☆☆	
Screening			☆	☆	☆☆
Oppfatninger	☆☆☆				
Prevalens/ Hypoteseutv.	☆☆☆	☆☆☆			

# Kriterier for kvalitet på vitenskapelige artikler og på forsknings-kvalitet

**equator network** Enhancing the **QUALity** and **Transparency Of health Research**

Home Library Toolkits Courses & events News Blog About us Contact

The resource centre for good reporting of health research studies

## Library for health research reporting

The Library contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.

- Search for reporting guidelines
- Visit the library for more resources

## Key reporting guidelines

- [CONSORT](#) Full Record | Checklist | Flow Diagram
- [STROBE](#) Full Record | Checklist
- [PRISMA](#) Full Record | Checklist | Flow Diagram
- [STARD](#) Full Record | Checklist | Flow Diagram
- [COREQ](#) Full Record
- [ENTREQ](#) Full Record
- [SQUIRE](#) Full Record | Checklist
- [CHEERS](#) Full Record | Checklist
- [CARE](#) Full Record | Checklist
- [SAMPL](#) Full Record

Toolkits EQUATOR highlights News

### Library for health research reporting

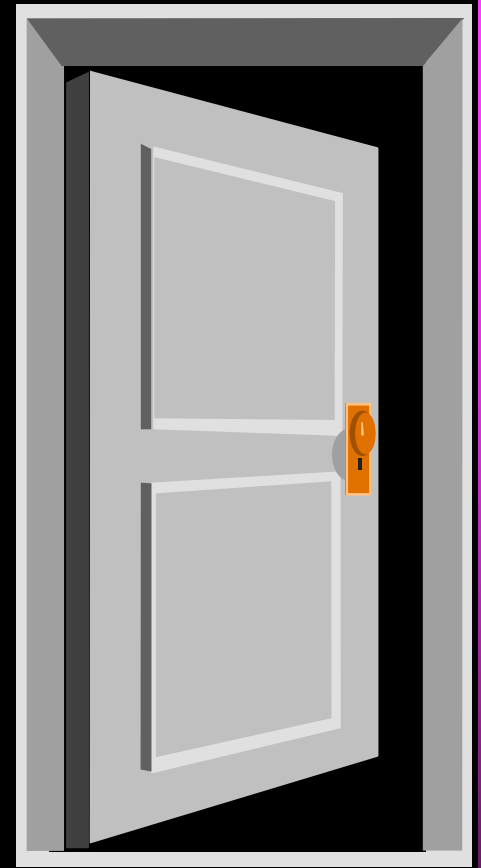
The Library for health research reporting provides an up-to-date collection of guidelines and policy documents related to health research reporting. These are aimed mainly at authors of research articles, journal editors, peer reviewers and reporting guideline developers.

- Search for reporting guidelines
- Reporting guidelines under development
- Translations of reporting guidelines
- Guidance on scientific writing
- Guidance developed by editorial groups
- Research funders' guidance on reporting requirements
- Industry sponsored research – additional guidance
- Research ethics, publication ethics and good practice guidelines

# Anvendelige studiedesign for å bedømme implementering av nye intervensjoner

	Qualitative research	Survey	Case Control	Cohort	RCT	Non-exper	Systematic review
<b>Effectiveness:</b> Does it work?				★	★★	★	★★★
<b>Process of intervention/delivery:</b> How does it work?	★★	★				★	★★★
<b>Salience:</b> Does it matter?	★★	★★					★★★
<b>Safety:</b> Will it do more good than harm?	★		★	★	★★	★	★★★
<b>Acceptability:</b> Will the patient accept the intervention?	★★	★			★	★	★★★
<b>Cost effectiveness:</b> Is it worth paying for the intervention?					★★		★★★
<b>Appropriateness:</b> Is this the right intervention for this patient?	★★	★★					★★
<b>Satisfaction with the intervention:</b> Are users, providers and other stakeholders satisfied?	★★	★★	★	★			★

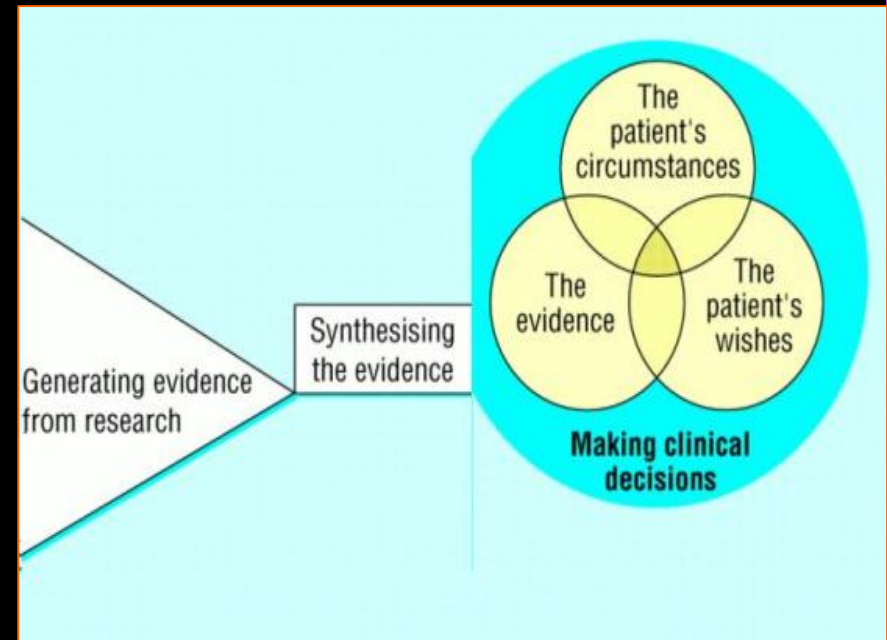
EBM kan  
praktiseres  
etter ulike  
modeller



# Hvordan utøve evidens-basert praksis?

## 1. Lære selv hvordan evidens-basert odontologi kan appliseres i praksis

- Bøker
- Seminarer
- Internett
  - Online link-lister
  - Online kurs
  - Online ressurser

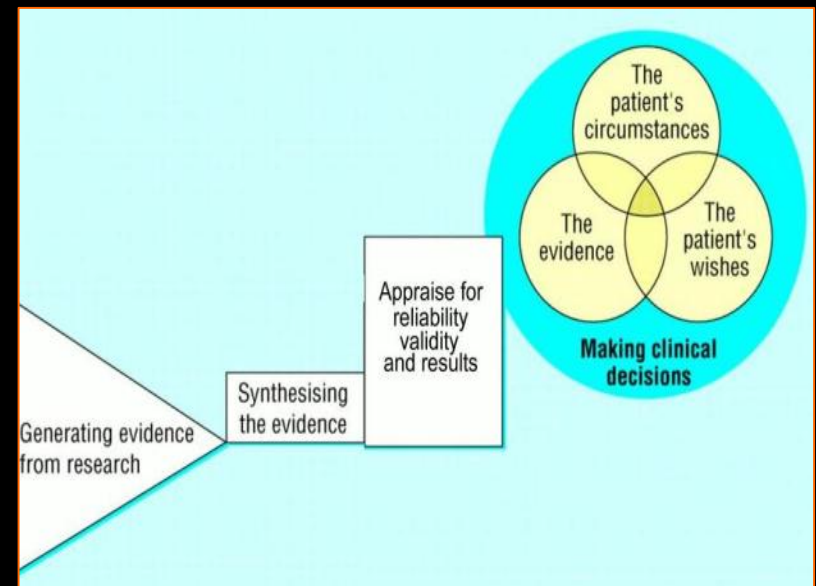



# Hvordan utøve evidens-basert praksis?

1. Lære selv evidens-basert odontologi

2. Søke og anvende evidens-baserte sammendrag utarbeidet av andre

1. Fagtidsskrift som kritisk evaluerer primærstudier
2. Systematiske oversikter
  - Cochrane Collaboration
  - Nat. Health Serv. R&D
  - Literatur





SEARCH

f t in

Home What is EBD? Practising EBD Conducting Research News & Events About us

Home


## Welcome to the new Centre for Evidence-Based Dentistry website

The Centre for Evidence-based Dentistry, established in 1995, is an independent body whose aim is to promote the teaching, learning, practice and evaluation of evidence-based dentistry world-wide.

The Centre is the Editorial base for the Evidence-based Dentistry journal and is one of the members of the Virtual Centre for Improving Oral Health. You can find out more about the history, aims and objectives of the Centre by visiting the [about us](#) section of the site.

Latest news and events

3rd International Society for Evidence-based Health Care Conference, November 6-9, 2014



GO UCL Home Eastman Research Departments Clinical Research ICEBOH

## International Centre for Evidence-Based Oral Health

Research synthesis to improve healthcare

### Welcome to ICEBOH

ICEBOH is a research-based unit developing best evidence for prevention, diagnosis and treatment in oral healthcare. We use these findings to develop clinical research to address key questions in order to strengthen the evidence-base. ICEBOH is part of the department of Clinical Research, UCL Eastman Dental Institute.

ICEBOH is a leading authority internationally in conducting systematic reviews in dentistry. This position has been gained by our focus on scientifically rigorous methods and by developing key collaborations between clinical experts and methodologists. We design our reviews to answer important questions in healthcare, questions that are relevant to patients, clinicians and policy makers.

### Research

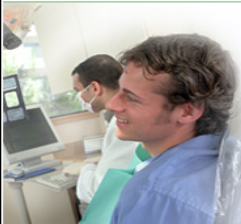
Our research focuses on:

- High quality systematic reviews in periodontology and oral health care.
- Developing the research methodology of such reviews

### Training

The Centre provides generic training in conducting systematic reviews in oral health care. Our participants include policy makers, clinicians, researchers and industry. We are the only regular providers of systematic review training for oral healthcare in the world.

**DIRECTOR**  
Ian Needleman  
BDS MSc  
FDSRCS(ORF)  
Professor  
and Evidence  
Honorary  
Specialist  
Unit of Periodontology  
UCL Eastman  
256 Gray's  
LONDON  
United Kingdom




## WELCOME TO A WEBSITE FOR EVIDENCE-BASED DENTISTRY

A practical resource for scientific evidence  
Looking for answers? We provide systematically assessed evidence as tools and resources to support your clinical decisions:  
A practical approach to integrating evidence into your patient care!


About EBD

**SUMMARIES**




Dental and orthodontic treatment with concise, evidence-based information. [Read more](#)

**ADA CLINICAL RECOMMENDATIONS**



Tools that provide guidance and assist you with clinical decision making. [Read more](#)

**RESOURCES**



Additional support for evidence-based practice. [Read more](#)

ADA Library

**FOR THE PRACTITIONER**  
[Learn more](#)

**Volunteer for ADA Evidence**

**On a smartphone**

**HIGHLIGHTS**

- ▶ Access to Conference Proceedings
- ▶ ADA's Customized Evidence
- ▶ Share Evidence website
- ▶ Listen to the Clinical Fluoride Conference
- ▶ Access to Evidence

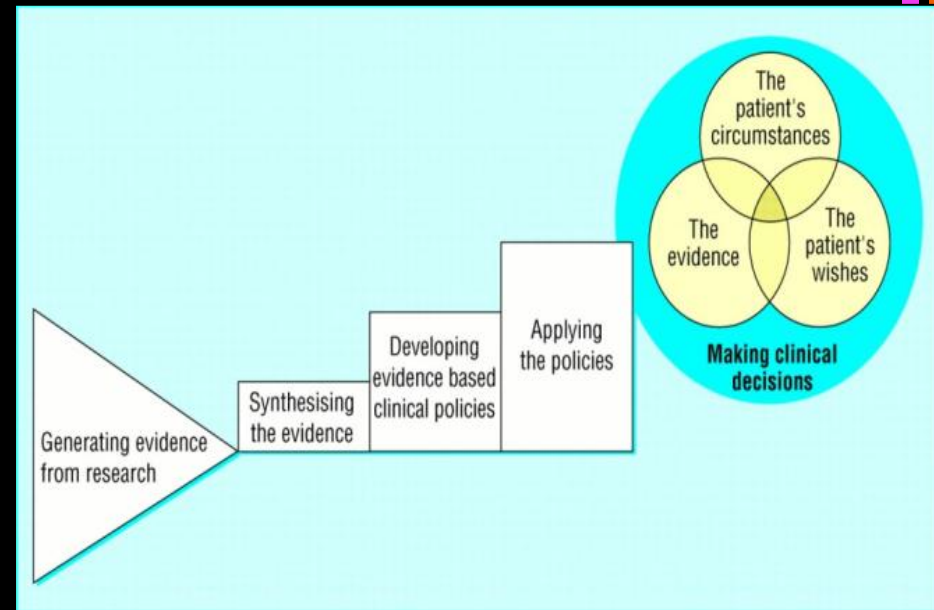


# Online sekundære publikasjoner publikasjoner

# The Cochrane Collaboration

# Hvordan utøve evidens-basert praksis?

1. Lære selv evidens-basert odontologi
2. Søke og anvende evidens-baserte sammendrag utarbeidet av andre
3. Akseptere og anvende kliniske retningslinjer som er baserte på evidens-baserte prinsipper



1. Informasjon er ikke synonymt med viten og enda mindre med klinisk kompetanse
2. Vær kritisk til all informasjon – forbli en advokat for dine pasienter.