



# The impact of Cochrane Reviews - view from the Health Council of the Netherlands -

Maastricht  
June 10, 2009

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# Health Council of the Netherlands (1902)



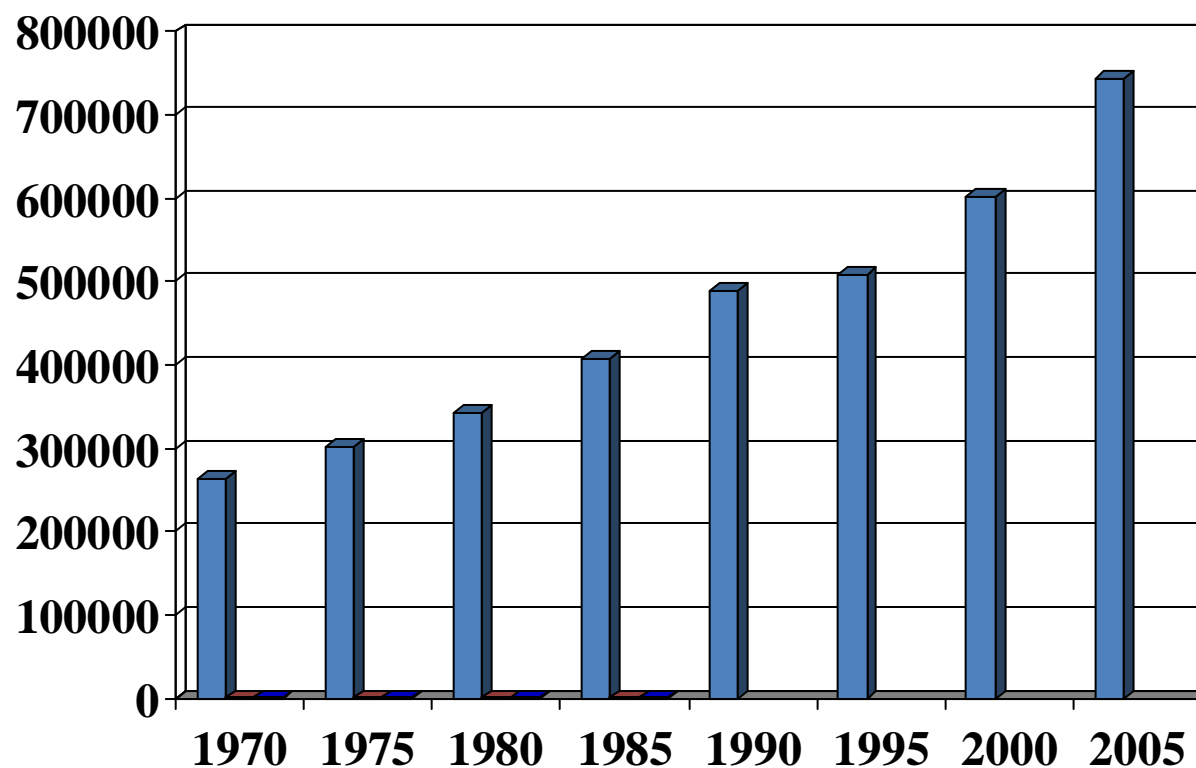
- Independent body, 180 members, 50 staff
- Scientific advice to the government and parliament on the state of knowledge on public health and healthcare
- Method
  - multidisciplinary committees
  - preparatory studies
  - comprehensive knowledge synthesis
  - recommendations for policy and research



- Necessity of systematic reviews
- Health Council of the Netherlands and systematic reviews
- Cochrane quality
- Evidence base  $\beta$  à evidence chase
- Optimising impact

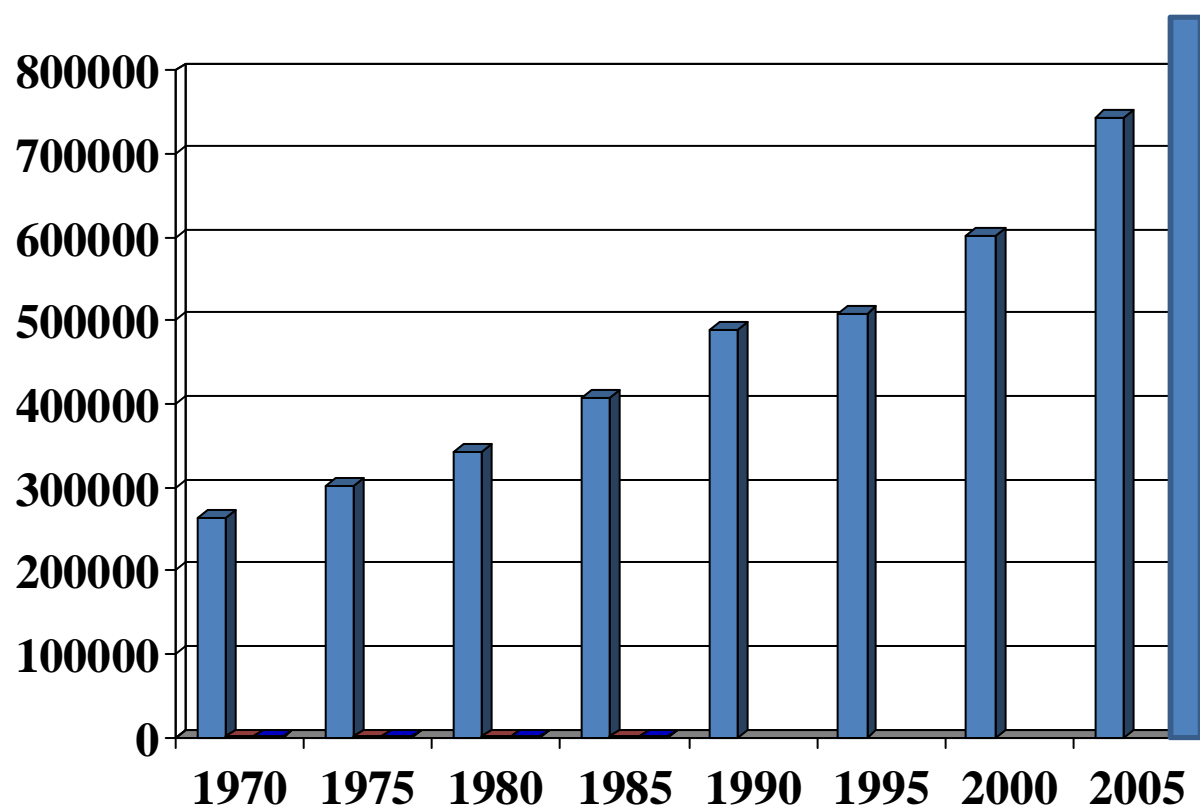


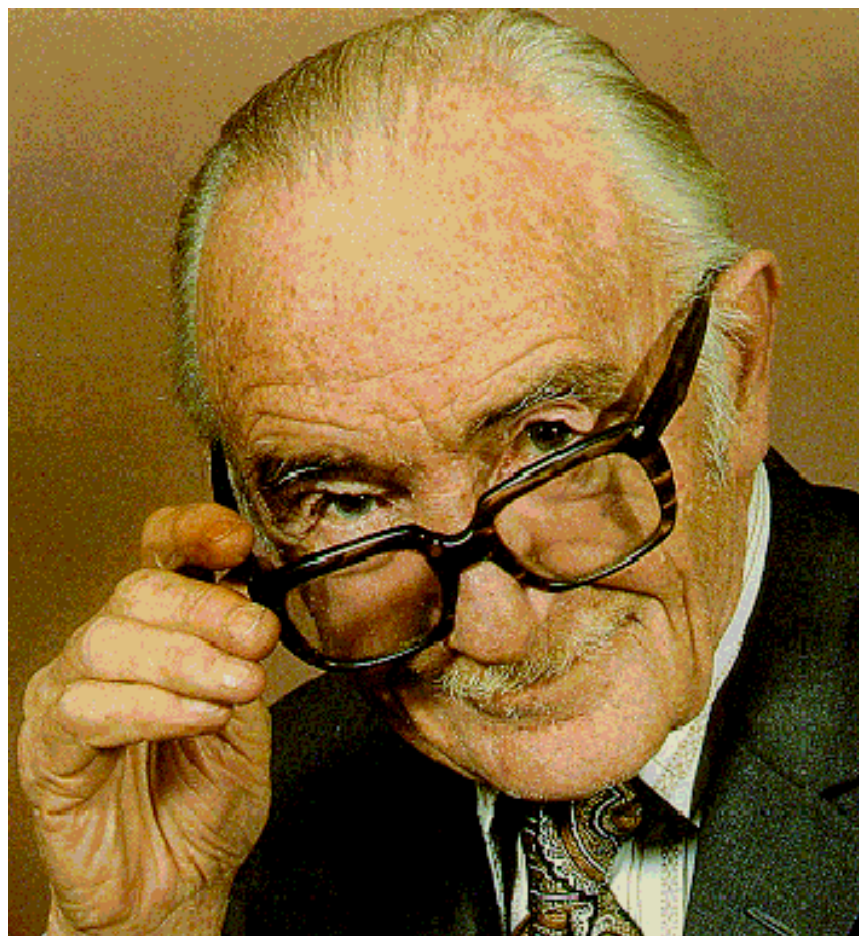
## Fast development of knowledge: annual number of publications in Medline





## Fast development of knowledge: annual number of publications in Medline





Archie Cochrane



Iain Chalmers

# Relevance of systematic reviews



- Systematically dealing with cumulating body of knowledge
- Well formulated question
- Quality and comprehensiveness of search
- Quality assessment of studies under review
- Result & interpretation
- Translation to practice/guidelines/implementation

# Convincing and welcome data à easy impact



*"The ringing in your ears—I think I can help."*



BRIDGE CROSSING  
AT OWN RISK  
BRUG OORGANG  
OP EIE RISIKO



# SRs and the Health Council

## 1999- : examples



- Physical therapy
  - Exercise therapy
  - Diagnosis/treatment sciatica
  - Passive smoking
  - Alcohol and pregnancy
  - Treatment of drug addicts
  - Noise, sleep and health
  - Chronic fatigue syndrome
  - Dietary fibre intake
  - Antisocial personality disorder
  - Food allergy
  - Palliative chemotherapy
  - Shift work & breast cancer
  - Preconception care
  - Autism
- *Screening:*
    - Mammography
    - Chlamydia
    - Prenatal screening
    - Neonatal screening
    - Annual report on screening
  - *Vaccination:*
    - Hepatitis B
    - Pneumococci (elderly)
    - Anti-tetanus immunisation
    - Pertussis
    - Pneumococci (infants)
    - Influenza
    - MMR and autism
    - Hepatitis B and multiple sclerosis
    - National Immunisation Programme

# Effectiveness of physical therapies



- Three commissioned series of systematic reviews, 169 RCTs (by EMGO et al.)
- Absence of evidence, in many cases even evidence of no effectiveness of electro-, laser- and ultrasound therapy of a wide range of conditions
- Contrast with large-scale use in the nineties
- Intense debate with and in the profession
- Implementation in guidelines
- Sharp decrease of use



# Exercise therapy

- Review of 102 systematic reviews
- Effective: cystic fibrosis, COPD, intermittent claudication, subacute and chronic low back pain, knee osteoarthritis
- Indications for effectiveness: Parkinson, ankylosing spondylitis, hip osteoarthritis, stroke
- Not effective: acute low back pain
- Insufficient evidence for RA, RSI, shoulder and neck complaints, asthma, bronchiectasis
- Not harmful



# Should we add pneumococcal vaccine to influenza vaccination in the elderly?

- Systematic review by DCC
- Inconclusive
- Poor methodological quality
- Vaccination not introduced
- Large RCT recommended, is being performed



# New acellular vaccin against pertussis?

- Based on Cochrane review/meta-analysis Of 49 RCTs (Jefferson et al.)
  - Effectiveness of acellular vaccin
  - Much less adverse effects
- Debate about frequency of adverse effects
- Commissioned (fast) second opinion by DCC
  - Estimated frequency similar
- Acellular vaccin introduced

# Stimulating introduction of preconception care



- Preconception care as concept:
  - Systematic search for international reports, position papers, policy statements
- Systematic search and evaluation of SRs:
  - Risk factors (behavioral, genetic, environmental)
  - Interventions
- Support DCC
- Strength of evidence
- Endorsed by Minister, organisational challenges



*"I did it! I did it! I found a  
substitute for quality!"*

# Cochrane quality



- Non-Cochrane vs. Cochrane reviews twice as likely to have positive conclusion statements (Tricco, Tetzlaff, Pham, Jamie Brehaut, Moher, J Clin Epidemiol 2009; 62: 380-386)
- Cochrane reviews used more rigorous methods than non-Cochrane reviews (in physiotherapy) (Moseley, Elkins, Herbert, Maher, Sherrington, J Clin Epidemiol 2009, in press)

# Sponsorship and outcome RCTs

- RCTs funded by industry (vs other sources)
  - less likely to be published
  - results more likely to favour the sponsor (OR 4.1)
  - explanations include: inappropriate comparators and publication bias

(Lexchin J, Bero LA, Djulbegovic B, Clark O. BMJ. 2003 May 31;326(7400):1167-70)

- Drug-drug (statins): test drug company funding
  - associated with more favourable results (OR 20.2) and conclusions (OR 34.6)
  - studies with adequate blinding were less likely to report results favoring the test drug.

(Bero L, Oostvogel F, Bacchetti, Lee K. PLoS Med. 2007 Jun;4(6):e184)



HET DUTCH COCHRANE CENTRE  
THE COCHRANE COLLABORATION



# The Dutch Cochrane Centre & the Health Council of the Netherlands: an effective cooperation

Reviews

Consultations

Scientific staff training and support

Library staff training and support

Feasibility of 'quick response service'?

# Scientific advice



- Synthesis and assessment of knowledge



- Expert judgment
  - Guidelines
- Implementation (programme)

# John M Eisenberg

(agency for healthcare research and quality US)



Globalize the evidence  
localize the decision

Health Aff (Millwood) 2002; 21: 166-8



# Impact of advice

- Improving
  - population health
  - patient outcome
  - practice and quality of care
  - health policies
- Need for methods to evaluate (European Science Advice Network for Health, EuSANH)
- Overview of knowledge gaps

# Evaluating the body of knowledge



- Knowledge gaps
- Research priorities

Evidence base  $\beta$   $\rightarrow$  evidence chase

# Cochrane Database SR, April 2007 (n= 250 of 4655)



Drug	133
Non-drug	117
– <i>Surgery</i>	28
– <i>Cure &amp; care</i>	26
– <i>Physical therapy &amp; rehabilitation</i>	10
– <i>Psychiatry/psychology</i>	10
– <i>Behavioral/health promotion</i>	9
– <i>Complementary/alternative</i> 9	
– <i>Tools/devices</i>	7
– <i>Quality and safety of care</i>	6
– <i>Nutrition</i>	5
– <i>Dental</i>	5
– <i>Screening</i>	4
– <i>Diagnostic</i>	1
– <i>Stop/withdrawal study</i>	1

# Major evidence problems



- Too many, e.g.,: me too studies, seeding 'trials'
  - Too few, e.g.,
    - specific patient categories (orphan; multimorbidity)
    - drug cessation studies
    - non-pharmacological clinical interventions
    - protocols and guidelines
    - patient compliance
    - diagnostics and medical aids
    - prevention (health advice, screening)
    - nutrition
- (In general: interventions/devices/tools for which no formal effectiveness requirements exist)

# Multimorbidity



	<b>% &gt; 2 chronic disorders</b>	
<b>Age</b>	<b>Male</b>	<b>Female</b>
0-19	2.4	2.1
20-39	2.3	2.2
40-59	6.0	4.9
60-79	22.5	22.1
80+	42.4	40.5

*Registration Family Practices, Maastricht University*

# E.g.,: osteoarthritis interventions



(Liberopoulos , Trikalinos, Ioannidis. J Clin Epidemiol 2009 Apr 7  
[ahead of print])

- Cochrane Library 219 eligible trials from 18 systematic reviews
- 66 (38%) trials: no patients over 80 years old.
- Excluded patients
  - various comorbidities (168 trials)
  - other specific treatments (142 trials)

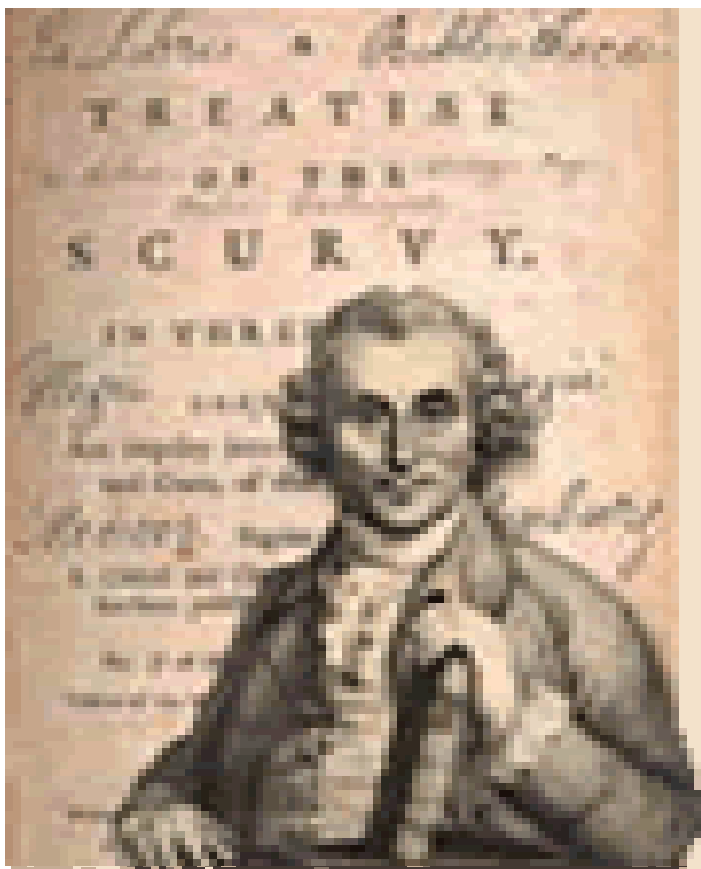


# Medicine-based evidence, a prerequisite for evidence-based medicine

(Knottnerus & Dinant. BMJ 1997;315:1109-10)

Research Agenda



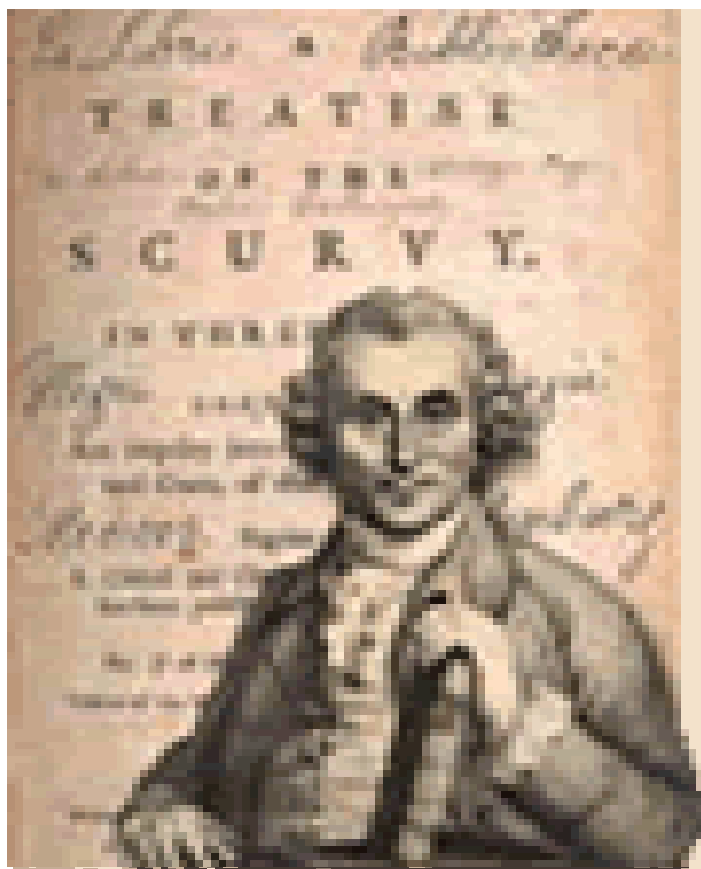


## James Lind Alliance

The Database of  
Uncertainties  
about the effects  
of Treatments  
(DUETs)

James Lind

1716 - 1794



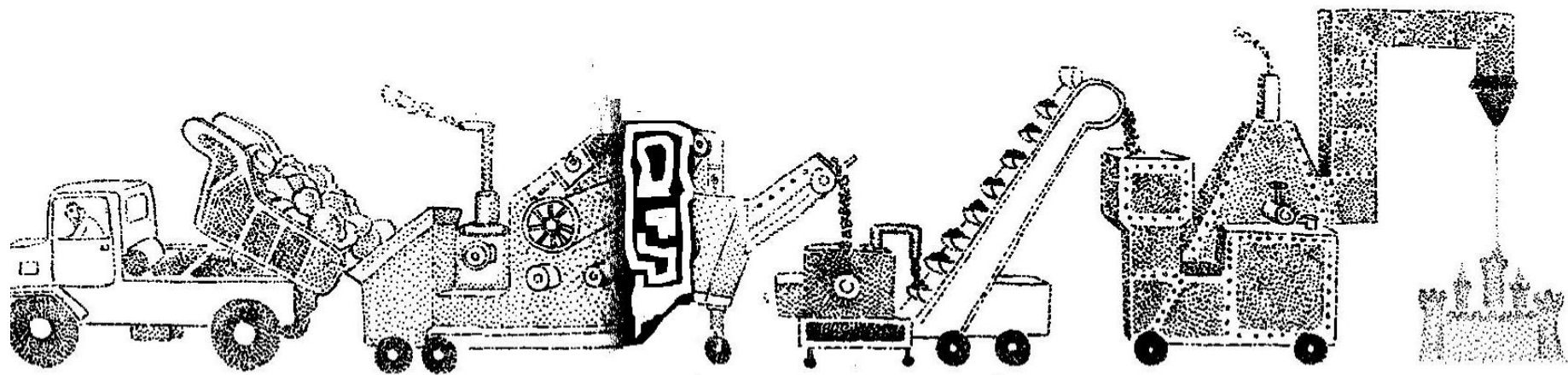
James Lind  
1716 - 1794





# Optimising impact

- Full free access
- Easy implementation in practice information systems
- Easy accessibility to patients (E-health)
- Easy accessibility to policy makers
- Media presence
- Continuous updates
- Quick response service



MANKOFF





# For debate

- Independence of is also a quality criterion
  - Should reviewers enter the arena of debate? E.g.,
    - Breast cancer screening
    - Influenza vaccination
  - Should reviewers be replaced after some time, or change topic?
  - Should researchers in a certain field be also reviewers?
  - Should clinicians in a certain field be also reviewers?
- à Any conflicts of interest to be avoided?

# European Science Advisory Network for Health



- Combining (scarce) expertise, efforts and resources in the field of science advice: quality, effectiveness/efficiency, coverage
- To promote evidence informed policy making at the national and European level
- With the objective to improve the health of the population



# Current EuSANH-ISA members

