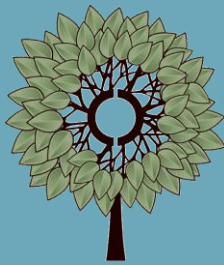


# Everything you ever wanted to know about Cochrane and its use in clinical practice



CCC-OCA & CCRF  
webinar series  
Module 1  
April 5, 2011  
Eileen Vilis



## Overview

1. Research evidence: Why it matters!
2. An evidence-based approach
3. Searching for the evidence: *The Cochrane Library* and other resources



## Example

Mme. Dupuis has had arthritis in her knee for about 2 years now. She's heard about GLUCOSAMINE on the news, from her neighbour and in magazines. She sees it in the store and can buy it in bulk for pennies a pill. She's wondering if maybe she should try it. She asks you whether this might work for her.

2



## Where do you go for information?

- Journals
- Colleagues
- Personal experience
- Media
- Product representatives
- Internet

3



## Information Challenges

Volume >20,000 health  
journals /year

Access

Quality & relevance

Information appraisal & use



## Evidence-based approach

Evidence-based medicine  
is the conscientious,  
explicit and judicious use  
of current best evidence  
in making decisions  
about the care of individual patients.



Sackett D. et al. BMJ 1996;312:71-2



## Evidence-based practice is not...

Evidence-based medicine is *not* "cook-book" medicine.

It requires a bottom-up approach that integrates the best external evidence with individual clinical expertise and patient-choice.

Source: Sackett, et al. 1997

6



## Evidence-based practice

Information

- from research
- highest quality

Expertise or experience

- past experience
- own judgement

Evidence Based Practice  
Evidence Based Decision Making

Values, preferences, needs

- usually patient perspective
- based on priorities in life, health beliefs



## Poll

Who has heard of  
the Cochrane Collaboration?

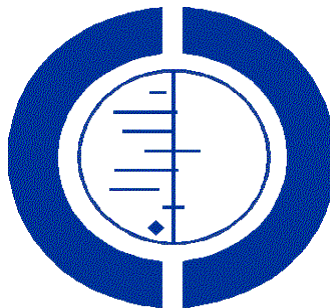
- ☐ YES
- ☐ NO



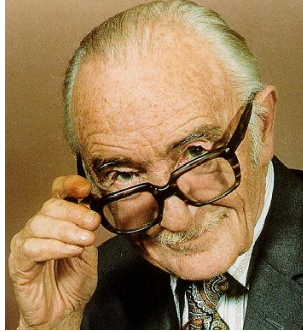
8



## Meet The Cochrane Collaboration



## Meet the Cochrane Collaboration



“It is surely a great criticism of our profession that we have not organised a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials”.

Archie Cochrane, 1979

10



## The Cochrane Collaboration

The Cochrane Collaboration is a unique worldwide organization that aims to **help people make well informed decisions about health care** by preparing, maintaining and promoting the accessibility of ***systematic reviews of the effects of health care interventions***

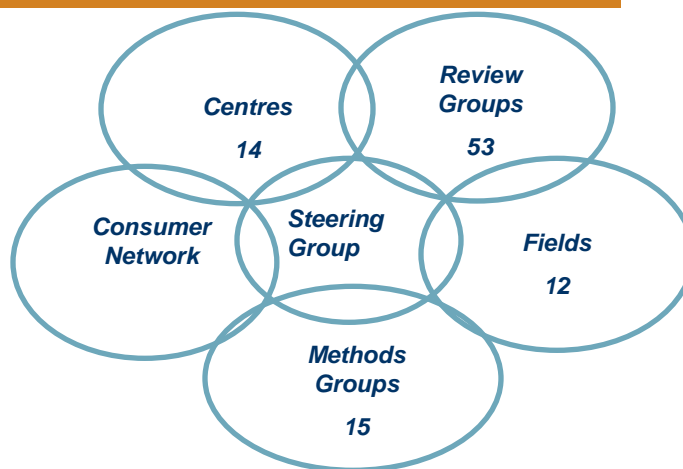


## The Cochrane Collaboration

- Not for profit, independent research organization
- Global
- Over 28,000 individuals  
(consumers, professionals, policy makers, and researchers)
- From 109 countries
- Working together, most as volunteers



## Global Cochrane Structure



## Cochrane Fields

- Represents a population, group, or type of care that overlaps multiple review group areas
- E.g., primary care, health promotion and public health, health care of older people
- Ensures that their priorities are reflected in the work of review groups
- Child Health Field and the Health Equity Field are located in Canada

14



## Cochrane Methods Groups

- Develops methodology and advise the Collaboration on how the validity and precision of systematic reviews can be improved
- Examples: Statistical Methods, Non-Randomized Studies, Information Retrieval
- Reporting Bias Methods Group is located in Canada

15





## Cochrane Consumer Network (CCNet)

- Facilitates the dissemination of information to patients, their families, friends and advocates throughout the world
- Plays an integral part to all activities within The Cochrane Collaboration
- Supports the role of consumers within The Cochrane Collaboration

16



## The Cochrane Consumer Network

- Supports role of consumers within Cochrane
- Facilitates the dissemination of information to patients & families



17



## Support for consumers

- Consumer workshops at Symposium
- Financial support to attend Symposia and Colloquia
- Feedback on Cochrane protocols & reviews
- Involved in projects with CCNet
- Hand search journals



18



## Canadian Cochrane Centre

- Regional sites (18)
- Partner Organizations (26)
  - Practitioner associations
  - Patient groups
  - Health research
- Bias Methods Group
- Fields (2)
  - Child health
  - Equity



## Canadian Cochrane Centre: regional sites

- Network sites across the country help provide a regional or provincial presence
- Located at the 16 health sciences centres across the country, plus 2 additional sites
- Recruit and support people in Canada wishing to participate in the Collaboration within each network site
- Promote local and regional awareness



20



## Canadian Cochrane Centre Partners

- Representatives from 26 healthcare professional organizations and consumer groups
- Advise The Canadian Cochrane Centre on future directions and activities
- Promote the awareness, appreciation, distribution and use of Cochrane systematic reviews among their members



21



## Partner Organizations - sample

- Canadian Medical Association
- Canadian Nurses Association
- Canadian Physiotherapy Association
- Arthritis Society
- Canadian Association of Occupational Therapists
- Canadian Women's Health Network
- Canadian Cancer Society
- Canadian Chiropractic Association
- Canadian Agency for Drugs and Technologies in Health
- Canadian Dental Association
- Canadian Health Libraries Association
- WorksafeBC, Evidence Based Practice Group

22



## Activities with Partners

- Information sessions
- Training workshops:
  - Conference, webinars
- Cochrane Corners on websites
- Abstracts with commentary in journals
- Highlight reviews in newsletters
- Plain language summaries on website

23



## Cochrane Review Groups

- 53 review groups based around the world
- Each group focuses on a health topic (e.g. Heart, wounds, stroke groups)
- Work to prepare and maintain systematic reviews of the prevention, treatment, and rehabilitation of specified health care problems



## Cochrane Review Groups

- Consist of an international group of experts with an interest in a health problem area
- Work to prepare and maintain systematic reviews of the prevention, treatment, and rehabilitation of specified health care problems
- Willing and able to review all relevant research on specified health care problems
- Worldwide there are 53 registered review groups



## Review Groups in Canada

- 🍁 Back Review Group
- 🍁 Effective Practice and Organization of Care Review Group
- 🍁 Hypertension Review Group
- 🍁 Inflammatory Bowel Disease and Functional Bowel Disorders Review Group
- 🍁 Musculoskeletal Review Group
- 🍁 Upper Gastrointestinal and Pancreatic Diseases Review Group



## Why research evidence matters!

Why is understanding  
and  
using research  
important?



## Why research evidence matters!

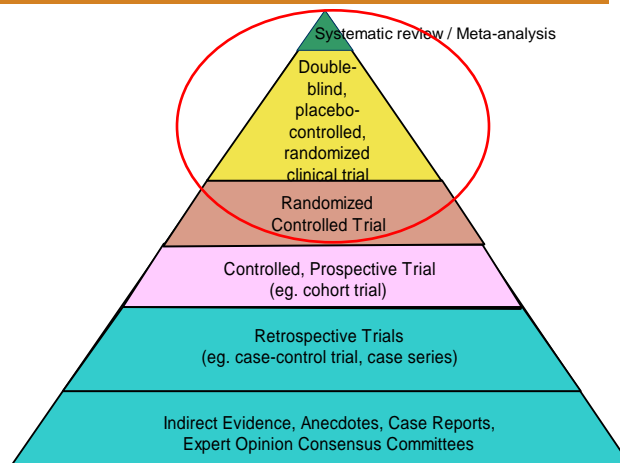
- Outdated practice
  - 30-40% of patients do not receive care that is based on the most recent evidence
- Inappropriate practice
  - 20-25% of care provided to patients is either unnecessary or potentially harmful

- Schuster MA, McGlynn EA, Brook RH. How good is the quality of health care in the United States? *Milbank Quarterly*. 1998;76(4):517-63.
- Grol R. Successes and Failures in the Implementation of Evidence-Based Guidelines for Clinical Practice. *Medical Care*. 2001;39(8 Supp 2):46-54.

28



## Research: Different qualities



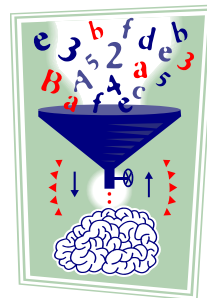
## Risks of single study reporting

- Randomized trials are the building blocks of knowledge about the benefits and harms of healthcare treatments
- Single studies rarely by themselves provide sufficient evidence to give a complete picture of the effectiveness of a treatment
- Decisions should be informed by the **totality** of global evidence



## Knowledge syntheses – a solution

- Summarizes information
- Saves time
- More reliable results
- Responds to a large scope of clinical questions & provides practice guidance





## Knowledge syntheses

- Knowledge syntheses summarise evidence from a broad range of research methods addressing different questions.
  - Does changing X change Y? (effectiveness)
  - Is X associated with Y? (relationships)
  - How/why does changing X change Y? (mechanisms)
  - How are X or Y viewed or experienced? (meanings)

32



## The Systematic Review

A review of a **clearly formulated question**  
that uses  
**systematic and explicit methods**  
to  
identify, select, and **critically appraise**  
relevant research,  
and  
to collect and analyse data from the studies  
that are included in the review.

Cochrane Collaboration (2005) *Glossary of Terms in The Cochrane Collaboration*



## Another Definition...

- “Systematic” search for all articles to answer a focused clinical question
- Systematic/ standard organized way to collect data  
(including search methods, data extraction and analysis)
- Methods are transparent and reproducible



34



## Look for systematic reviews!

- Saves you time!
- Synthesizes existing best information to give a picture of what is currently known
- Provides more reliable results than individual studies
- Cover a wide range of topics – alternative medicine, vaccines, drugs, service delivery



35



## Where can I find Systematic Reviews?

### The Cochrane Library

- The Cochrane Library is the main product produced by the Cochrane Collaboration
- Contains over 700,000 records
- Several data bases of evidence
- Quarterly updates

36



## Cochrane Library; Issue 2, 2011

Cochrane Reviews	4544 reviews 2000 protocols
Other reviews	14,018
Clinical trials	641,406
Methodology studies	14, 095
Health technology assessments	9,393
Economic evaluations	29,219

37



## Example

Mme. Dupuis has had arthritis in her knee for about 2 years now. She's heard about GLUCOSAMINE on the news, from her neighbour and in magazines. She sees it in the store and can buy it in bulk for pennies a pill. She's wondering if maybe she should try it. She asks you whether this might work for her.

38



## Study # 1

### Randomised, Double-Blind, Parallel, Placebo-Controlled Study of Oral Glucosamine, Methylsulfonylmethane and their Combination in Osteoarthritis

P.R. Usha and M.U.R. Naidu

Department of Clinical Pharmacology and TI  
Hyderabad, India

#### Abstract

**Objective:** Glucosamine (Glu), is an amino sugar (MSM), the isoxid

were the pain index, the swelling index, visual analogue scale pain intensity, 12m walking time, the Lequesne index, and consumption of rescue medicine.

**Results:** Glu, MSM and their combination significantly improved signs and symptoms of osteoarthritis compared with placebo. There was a statistically significant decrease in mean ( $\pm$  SD) pain index from  $1.74 \pm 0.47$  at baseline to  $0.65 \pm 0.71$  at week 12 with Glu ( $p < 0.001$ ). MSM significantly decreased the mean pain index from  $1.53 \pm 0.51$  to  $0.74 \pm 0.65$ , and combination treatment resulted in a more significant decrease in the mean pain index ( $1.7 \pm 0.47$  to  $0.36 \pm 0.33$ ;  $p < 0.001$ ). After 12 weeks, the mean swelling index significantly decreased with Glu and MSM, while the decrease in swelling index with combination therapy was greater ( $1.43 \pm 0.63$  to  $0.14 \pm 0.35$ ;  $p < 0.05$ ) after 12 weeks. The combination produced a statistically significant decrease in the Lequesne index. All treatments were well tolerated.

**Conclusion:** Glu, MSM and their combination produced an analgesic and anti-inflammatory effect in osteoarthritis. Combination therapy showed better efficacy in reducing pain and swelling and in improving the functional ability of joints than the individual agents. All the treatments were well tolerated. The onset of analgesic and anti-inflammatory activity was found to be more rapid with the combination than with Glu. It can be concluded that the combination of MSM with Glu provides better and more rapid improvement in patients with osteoarthritis.

39



## Study #2

### Randomized, Double-Blind, Placebo-Controlled Glucosamine Discontinuation Trial in Knee Osteoarthritis

JOLANDA CIBERE,<sup>1</sup> JACEK A. KOPEC,<sup>1</sup> ANONA THORNE,<sup>2</sup> JOEL SINGER,<sup>3</sup> JANICE CANVIN,<sup>4</sup> DAVID B. ROBINSON,<sup>5</sup> JANET POPE,<sup>6</sup> PAUL HONG,<sup>7</sup> ERIC GRANT,<sup>8</sup> AND JOHN M. ESDAILE<sup>1</sup>

**Objective.** To assess the efficacy of glucosamine sulfate in knee osteoarthritis (OA).

**Methods.** A 4-center, 6-month, randomized, double-blind, placebo-controlled glucosamine discontinuation trial was conducted in 137 current users of glucosamine with knee OA who had experienced at least moderate improvement in knee pain after starting glucosamine. Study medication dosage was equivalent to the dosage of glucosamine taken prior to the study (maximum 1,500 mg/day). Followup continued for 6 months or until disease flare, whichever occurred first. The primary outcome was the proportion of disease flares in the glucosamine and placebo groups using an intent-to-treat analysis. Secondary outcomes included time to disease flare; analgesic medication use; severity of disease flare; and change in pain, stiffness, function and quality of life in the glucosamine and placebo groups.

**Results.** Disease flare was seen in 28 (42%) of 66 placebo patients and 32 (45%) of 71 glucosamine patients (difference -3%; 95% confidence interval [95% CI] -19, 14;  $P = 0.76$ ). In the Cox regression analysis, after adjustment for sex, study site, and OA radiographic severity, time to disease flare was not significantly different in the glucosamine compared with placebo group (hazard ratio of flare = 0.8; 95% CI 0.5, 1.4;  $P = 0.45$ ). At final study visit, acetaminophen was used in 27% and 21% of placebo and glucosamine patients, respectively ( $P = 0.40$ ). Nonsteroidal antiinflammatory drugs were used in 29% and 36% ( $P = 0.92$ ), and both were used in 20% and 21% ( $P = 0.84$ ). No differences were found in severity of disease flare or other secondary outcomes between placebo and glucosamine patients.

**Conclusion.** In patients with knee OA with at least moderate subjective improvement with prior glucosamine use, this study provides no evidence of symptomatic benefit from continued use of glucosamine sulfate.

**KEY WORDS.** Glucosamine; Knee osteoarthritis; Randomized discontinuation trial.

40



## Conflicting results – Now what?

There are 10 other studies that vary in:

- Quality of study design
- Number of people tested
- Publication date (some from 80's)
- Brand of glucosamine studied
- How pain is measured

How to make the decision?

41



## Cochrane review

### Glucosamine therapy for treating osteoarthritis (Review)

Towheed TE, Maxwell L, Anastassiades TP, Shea B, Houpt J, Robinson V, Hochberg MC, Wells G

**This record should be cited as:**

Towheed TE, Maxwell L, Anastassiades TP, Shea B, Houpt J, Robinson V, Hochberg MC, Wells G. Glucosamine therapy for treating osteoarthritis. *The Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD002946.pub2. DOI: 10.1002/14651858.CD002946.pub2.

**This version first published online:** 20 April 2005 in Issue 2, 2005.

**Date of most recent substantive amendment:** 23 February 2005

#### Conclusions:

- Updated review contains 20 studies with 2570 patients
- High quality studies shows little improvement in pain or function
- Frequency of side effects similar in treatment & control groups

42



## Interpretation

- Is this the question I am looking for?
- Quality of included studies
- Clinical judgement (watch out for bias)

43



## LAST SLIDE WEBINAR 1

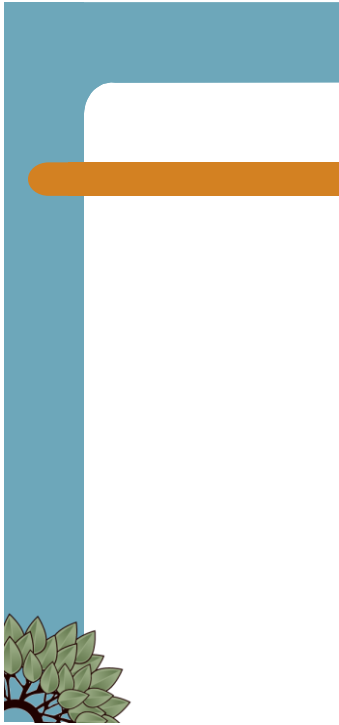


44



45





46



## Cochrane Library

**Cochrane Library is a great resource for high quality evidence to use in practice**

Includes:

- Cochrane Review abstracts & full-text
- more than Cochrane Reviews
- six other databases that provide excellent, high quality information
- health technology assessments & economic evaluations





## Cochrane reviews answer questions

- What is my risk of disease?
- How can I reduce my risk of disease?
- When should I access health care services?
- How is the disease diagnosed?
- **What treatment options do I have?**
- **What are the benefits and harms of different treatment options?**
- What is my prognosis?



## Cochrane systematic reviews

- Effects of healthcare interventions, including diagnostics
- All have the same structure & format
- Start as a Protocol and become Review
- Summarize evidence
- Help people understand evidence
- Keep audience in mind while writing
- Careful not to impose own values, preferences, local context



## Browsing the Cochrane Library

Can Browse the Cochrane Reviews by:


- **Topic** – Broad subject areas with narrower subtopics
- **New Reviews and Updated Reviews**
- **A-Z Listings**
- **Review Group** – Most useful for looking at reviews that have been undertaken by Review Groups



## Steps of evidence-based approach

1. Precisely define a patient problem
2. Search and critically appraise relevant information
3. Decide whether, and how to use this information
4. Evaluate the effects of your decision




**THE COCHRANE LIBRARY**  
 Independent high-quality evidence for health care decision making

from The Cochrane Collaboration

**SEARCH THE COCHRANE LIBRARY**  
 Title, Abstract or Keyw ▾  
 enteral nutrition

or try an [Advanced Search](#)

**ABOUT THE COCHRANE LIBRARY**  

The Cochrane Library is a collection of six databases that contain different types of high-quality, independent evidence to inform healthcare decision-making, and a seventh database that provides information about groups in The Cochrane Collaboration.

- [Cochrane Database of Systematic Reviews](#)
- [Cochrane Central Register of Controlled Trials](#)
- [Cochrane Methodology Register](#)
- [Database of Abstracts of Reviews of Effects](#)
- [Health Technology Assessment Database](#)
- [NHS Economic Evaluation Database](#)
- [About The Cochrane Collaboration](#)



**Editor in Chief**  


Dr David Tovey is the first Editor in Chief of *The Cochrane Library* (since 2009) and oversees the CDSR content. Dr Tovey is based in the Cochrane Editorial Unit, along with Dr Harriet MacLachose (Senior Editor) and Mr Toby Lasserson (Scientific Editor). You can contact the Editor in Chief via email at [editorial-unit@cochrane.org](mailto:editorial-unit@cochrane.org). Other contact details are available on the [Cochrane Editorial Unit website](#).

**Publisher**  

John Wiley & Sons, Ltd. publishes *The Cochrane Library*. Deborah Pentescu-Gilbert, publisher, can be contacted at: John Wiley & Sons, Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK. Email: [dpentesci@wiley.com](mailto:dpentesci@wiley.com).

**COCHRANE DATABASE OF SYSTEMATIC REVIEWS**


**THE COCHRANE LIBRARY**  
 Independent high-quality evidence for health care decision making

from The Cochrane Collaboration

**BROWSE**  
 Cochrane [By Topic](#) | [New Reviews](#) | [Updated Reviews](#) | [A-Z](#) | [By Review Group](#)  
 Reviews:  
 Other [Other Reviews](#) | [Clinical Trials](#) | [Methods Studies](#) | [Technology Assessments](#) | [Economic Evaluations](#)

**SEARCH**  
 Enter search term  Title, Abstract or Keyw ▾   
[Advanced Search](#) | [MeSH Search](#) | [Search History](#) | [Saved Searches](#)

**Search Results**  
 Show Results in:  
**Cochrane Reviews [48]** | [Other Reviews \[73\]](#) | [Clinical Trials \[2284\]](#) | [Methods Studies \[2\]](#) | [Technology Assessments \[12\]](#) | [Economic Evaluations \[74\]](#) | [Cochrane Groups \[0\]](#)  
 There are **48** results out of **6544** records for "enteral nutrition in Title, Abstract or Keywords in Cochrane Database of Systematic Reviews"

View: **1-25** | [26-48](#)

Record Information	Issue: <a href="#">Current</a>   <a href="#">All</a>	Restrict to: <a href="#">Reviews</a>   <a href="#">Protocols</a>	Sort by: <a href="#">Record Title</a>   <a href="#">Match %</a>   <a href="#">Date</a>
<input type="checkbox"/> <a href="#">Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications</a> Henning Keinke Andersen, Stephen J Lewis, Steve Thomas February 2011 <a href="#">New search</a> <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Enteral tube feeding for amyotrophic lateral sclerosis/motor neuron disease</a> Hans Dieter Kitzberg, Michael Benatar January 2011 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Nutritional support in children and young people with cancer undergoing chemotherapy</a> Leanne Jones, Ruth M Watling, Simone Wilkins, Barry Pizer January 2011 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Avoidance of bottles during the establishment of breast feeds in preterm infants</a> Carmel T Collins, Maria Makrides, Jennifer Gillis, Andrew J McPhee November 2010 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Early discharge with home support of gavage feeding for stable preterm infants who have not established full oral feeds</a> Carmel T Collins, Maria Makrides, Andrew J McPhee November 2010 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Effect of taurine supplementation on growth and development in preterm or low birth weight infants</a> Allison M Mearns, William McQuinn, John Stanbury, Pravin			

http://www2.cochrane.org/reviews/en/ab004080.html

Google | cochrane collaboration

Early enteral nutrition within 24h of col...

The Cochrane Collaboration  
Cochrane Reviews

Explore | New + Updated | Other languages | Full Text: The Cochrane Library

search & browse | by topic | full list of all reviews | by country of author

Audio summaries | Evidence Aid summaries | Cochrane Methodology abstracts

Home  
About us  
Cochrane Reviews  
News  
Events  
Training  
Multimedia  
Contact

### Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications

Andersen HK, Lewis SJ, Thomas S

Bookmark this:  
more...  
Email this page

#### Summary

**Early enteral nutrition within the first 24 hours post colorectal surgery seems to lower complications and enhance recovery.**

There is no obvious advantage in keeping patients 'nil by mouth' following gastrointestinal surgery, and this review support the notion on early commencement. The review implicated lower incidence of several post operative complications. The immediate advantage of caloric intake could be a faster recovery with fewer complications. Length of hospital stay was reduced in nine out of fourteen studies. Overall reduction corresponded to about a day, which is both clinically and economically important. Reduction in complication rates may explain this observation as might faster return of gastrointestinal function upon early commencement of enteral feeding.

This is a Cochrane review abstract and plain language summary, prepared and maintained by The Cochrane Collaboration, currently published in The Cochrane Database of Systematic Reviews 2011 Issue 2, Copyright © 2011 The Cochrane Collaboration. Published by John Wiley and Sons, Ltd. The full text of the review is available in [The Cochrane Library](#) (ISSN 1464-780X).

This record should be cited as: Andersen HK, Lewis SJ, Thomas S. Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications. Cochrane Database of Systematic Reviews 2006, Issue 4. Art. No.: CD004080. DOI: 10.1002/14651858.CD004080.pub2

Editorial Group: [Colorectal Cancer Group](#)

This version first published online: October 18, 2006  
Last assessed as up-to-date: January 10, 2011

Internet | Protected Mode: Off | 100%

- Other examples throughout the text



## The Cochrane Library

- Content updated quarterly and available on CD ROM and the Internet at:
- [www.thecochranelibrary.com](http://www.thecochranelibrary.com)
- Abstracts of reviews available for free from
- The Cochrane Collaboration website at:
- [www.cochrane.org/reviews](http://www.cochrane.org/reviews)
- Training guides for The Cochrane Library are available on The Cochrane Collaboration website at:
- [www.cochrane.org/resources/training.htm](http://www.cochrane.org/resources/training.htm)

56



- END!!!!

57



extras



58



How can 'good' information be recognized?



59



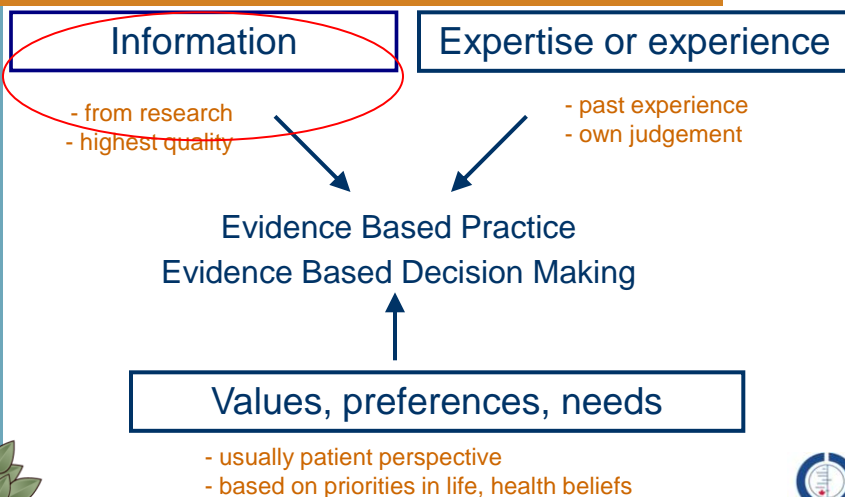
## Evidence-based practice

Evidence-based medicine  
is the conscientious,  
explicit and judicious use  
of current best evidence  
in making decisions  
about the care of individual patients.

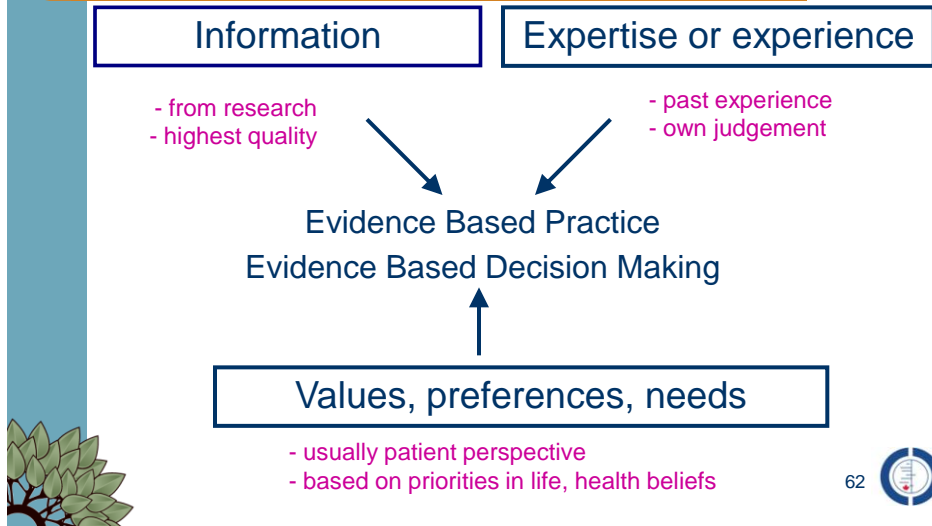
Sackett D. et al. BMJ 1996;312:71-2



## Evidence-based practice



## Evidence-based practice / decisions



## Research indicates.....





## Now...

- You felt cautious about ....
- You would like to learn more....where would you go for more information?

64



## New information changes practice

### **eg. Research conclusions (Cochrane review):**

Resting wrists of clients with arthritis who have received an intra-articular steroid injection should be avoided.



Led to abandoning the existing practice of splinting or casting an injected wrist immediately after injection.

*Wallen, M. & Gillies, D. (2006). Intra-articular steroids and splints/rest for children with juvenile idiopathic arthritis and adults with rheumatoid arthritis.*



## New information changes practice

### eg. Research conclusions (Cochrane review):

Combined chiropractic interventions slightly improved pain and disability in the short term and pain in the medium term for acute and subacute low-back pain.



Led to abandoning the existing practice of splinting or casting an injected wrist immediately after injection.



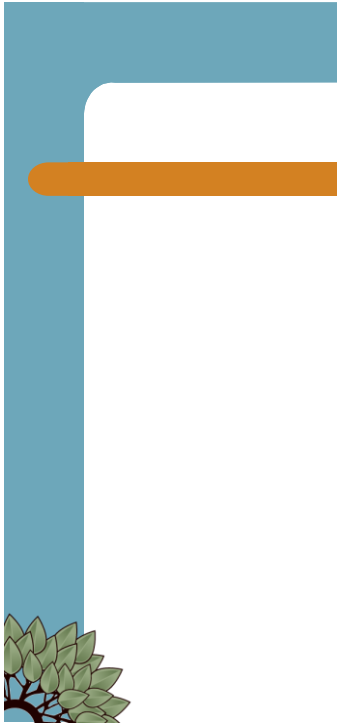
*Walker, BF, French SD, Grant W, Green S, (2010). Combined chiropractic interventions for low back pain*

66



67





68



## Why are RCT Important?

- RCTs best for assessing safety/efficacy of a treatment or intervention
- Benefits of RCTs is everyone has an equal chance of getting the treatment or control
- Equally balances the known and unknown
  - (if the sample size is large enough)
  - So differences in outcome between groups are likely due to differences in treatment
- kkk



69



## What is a Systematic Review?

- “Systematic” search for all articles to answer a focused clinical question
- Systematic/ standard organized collection of data (search methods, data extraction and analysis)
- Methods are transparent and reproducible



70



## Why are Systematic Reviews Important?

- Use systematic methods to look at studies
- Look at all trials for a particular question
- Answer questions about conflicting results
- All evidence is in one place
- Transparent, inclusion & exclusion criteria
- This Limits the probability of missing important trials by searching for all possible trials
- Important to use a combination both the best level of evidence (RCTs) and rigorous methodology

TIP: Systematic reviews that include non-randomized studies will be questionable as the bias from non-randomized data weakens the reliability of the data



71



## What is a Meta-Analysis?

- Data from several trials are pooled together
  - using specific statistical methodology
  - Data trails must have similar clinical questions (PICOS)
- Why pool data?
  - Increase statistical power to ensure the result is unlikely to have happened by chance



72



## Downsides of SRs

- If SR aligns with question seeking to answer then ok
- Retrospective all clinical trails have problems
- Garbage in/garbage out RCT missing info/bias ascertained
- Old vs new studies ie other therapies that are used over time (ppol low vs high dose use of ASA)
- Interpretation difficult if different things are compared (male/female,



73



## Forest Plot

- It is the visual representation of the effect of an intervention

74



## PICOS – formulating the clinical question

4 PICO Components:

**P**atient/Problem - description

**I**ntervention -

**C**omparison Intervention

**O**utcome

**S**tudy design

75



## Formulating the clinical question



76



## The Search

- Minimum of 2 electronic basis
- No language restrictions
- Needs to be sensitive
- Old & new searches



77



## Questions to ask about trials?

- How many trial were found?
- What was excluded? Why? (detailsNB)
- What was the final selection?
- Data extraction ( $\geq 2$  people)
- Trial Quality
  - describe the trial quality
  - determine if the quality trials impact results
- kk

78



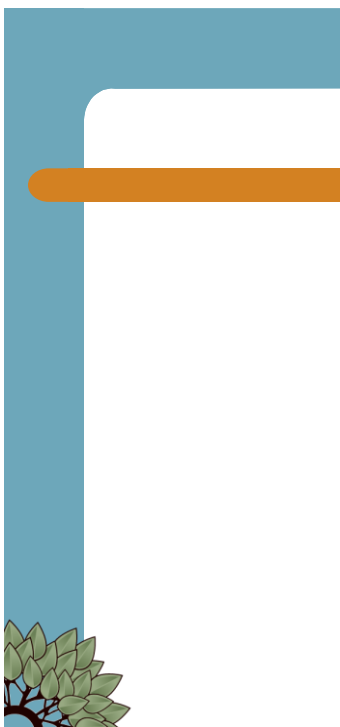
## Cochrane Versus non-Cochrane Reviews

- Cochrane updates every 2 years
- All details of the trials included
- Risk of bias assessment
- Summary of finds tables
- Plain language summary

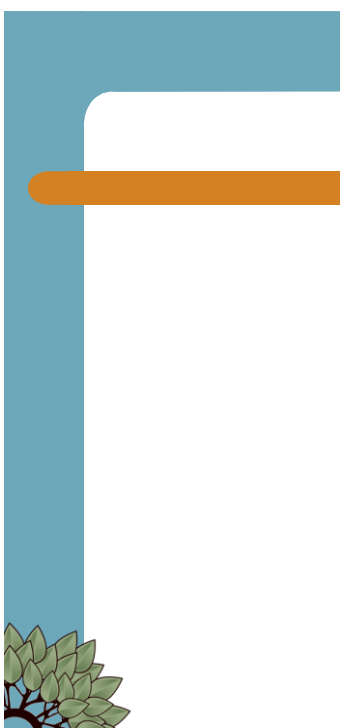
79





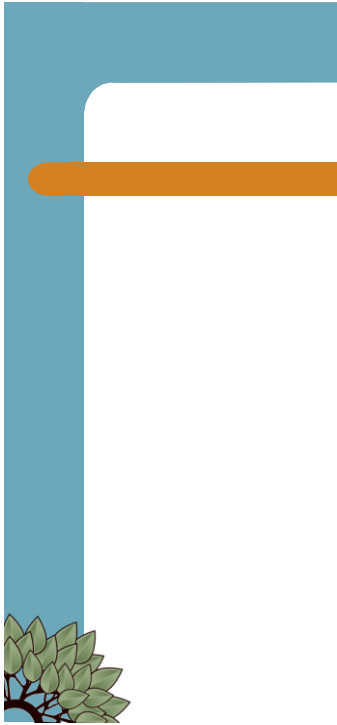


80



81





82



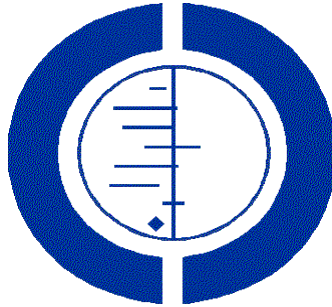
## Presentation Outline



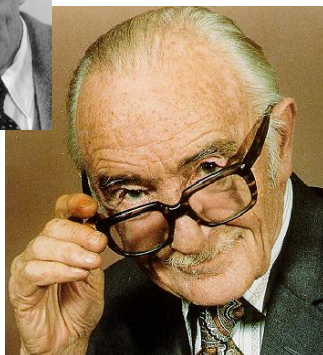
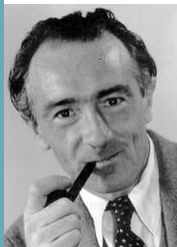
1. The Cochrane Collaboration
2. Evidence-based Practice
3. Introducing Systematic Reviews
4. *The Cochrane Library*
5. ...
6. ....
7. ...
8. Opportunities to collaborate



## 4. What is The Cochrane Collaboration?



## Archie Cochrane



**“It is surely a great criticism of our profession that we have not organised a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials”.**

**Archie Cochrane, 1979**



## The Cochrane Collaboration

The Cochrane Collaboration is a unique worldwide organization that aims to **help people make well informed decisions about health care** by preparing, maintaining and promoting the accessibility of ***systematic reviews of the effects of health care interventions***

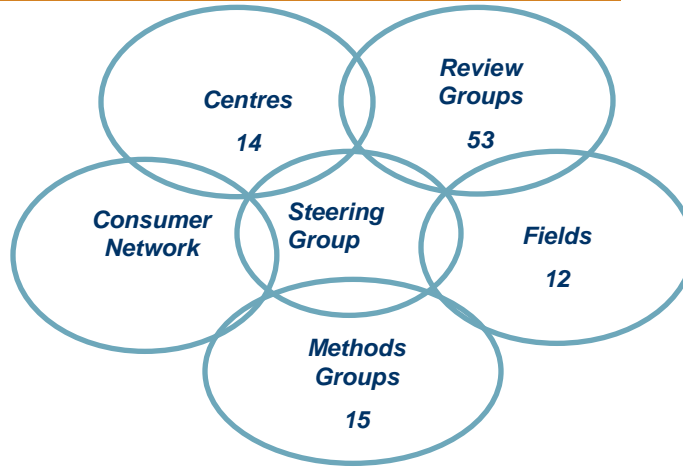


## The Cochrane Collaboration

- Not for profit, independent research organization
- Global
- Over 28,000 individuals  
(consumers, professionals, policy makers, and researchers)
- From 109 countries
- Working together, most as volunteers for Cochrane



## Global Cochrane Structure



## Cochrane Review Groups

- Consist of an international group of experts with an interest in a health problem area
- Work to prepare and maintain systematic reviews of the prevention, treatment, and rehabilitation of specified health care problems
- Willing and able to review all relevant research on specified health care problems
- Worldwide there are 53 registered review groups

## Canadian Cochrane Centre

- Regional sites (18)
- Partner Organizations (26)
  - Practitioner associations
  - Patient groups
  - Health research
- Bias Methods Group
- Fields (2)
  - Child health
  - Equity



## Review Groups in Canada

- 🍁 Back Review Group
- 🍁 Effective Practice and Organization of Care Review Group
- 🍁 Hypertension Review Group
- 🍁 Inflammatory Bowel Disease and Functional Bowel Disorders Review Group
- 🍁 Musculoskeletal Review Group



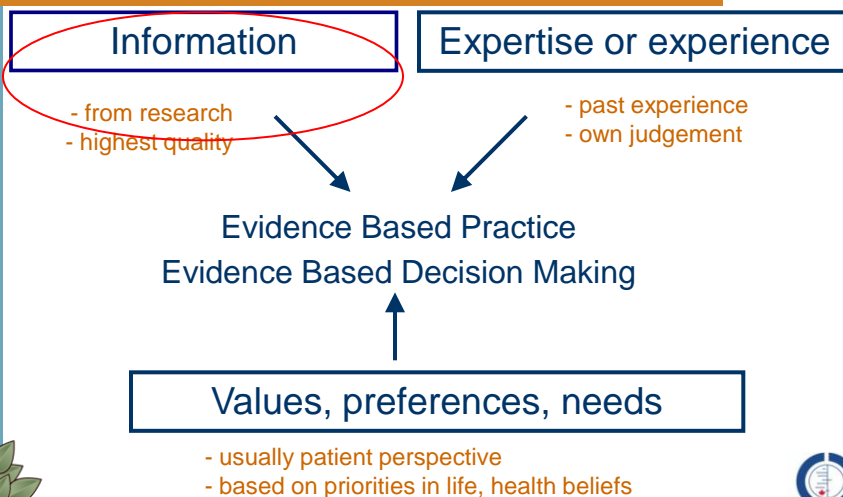
## Evidence-based practice

Evidence-based medicine  
is the conscientious,  
explicit and judicious use  
of current best evidence  
in making decisions  
about the care of individual patients.

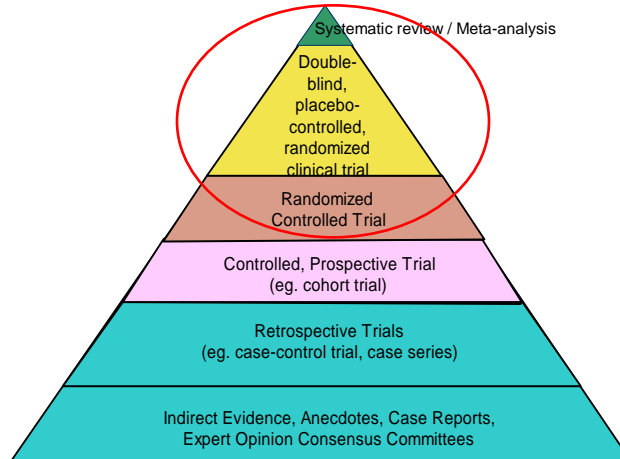
Sackett D. et al. BMJ 1996;312:71-2



## Evidence-based practice



## Research: Different qualities



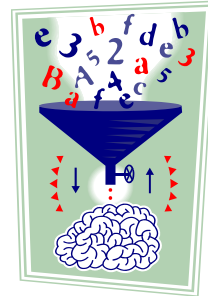
## Risks of single study reporting

- Randomized trials are the building blocks of knowledge about the benefits and harms of healthcare treatments
- Single studies rarely by themselves provide sufficient evidence to give a complete picture of the effectiveness of a treatment
- Decisions should be informed by the **totality** of global evidence



## Knowledge syntheses – a solution

- Summarizes information
- Saves time
- More reliable results
- Responds to a large scope of clinical questions & provides practice guidance



## The Systematic Review

A review of a **clearly formulated question**  
that uses  
**systematic and explicit methods**  
to  
identify, select, and **critically appraise**  
relevant research,  
and  
to collect and analyse data from the studies  
that are included in the review.

Cochrane Collaboration (2005) *Glossary of Terms in The Cochrane Collaboration*



## Why Systematic Reviews?

### Useful to:

- Resolve conflicting evidence
- Clarify uncertainty in practice
- Variations in practice
- Confirm appropriateness of current practice
- Highlight need for future research



## Cochrane systematic reviews

Produces and disseminates  
“gold standard”  
systematic reviews  
of  
“what works”  
in health care interventions



## Cochrane systematic reviews

- Rigour of methodology
- Broad scope of literature included
- Updated and maintained
- Inclusiveness of perspectives
- Plain language summaries
- Independence from commercial interests



**STEP 1:** Define the problem & formulate a question

**STEP 2:** Write protocol with eligibility criteria for which studies to be included

**STEP 3:** Identify and select studies applying criteria

**STEP 4:** Data collection: study characteristics, risk of bias, outcome data, other information

**STEP 5:** Analyze and present results

**STEP 6:** Interpret results and write review

**STEP 7:** Update review



## Cochrane reviews answer questions

- What is my risk of disease?
- How can I reduce my risk of disease?
- When should I access health care services?
- How is the disease diagnosed?
- **What treatment options do I have?**
- **What are the benefits and harms of different treatment options?**
- What is my prognosis?



## Cochrane systematic reviews

- Effects of healthcare interventions, including diagnostics
- All have the same structure & format
- Start as a Protocol and become Review
- Summarize evidence
- Help people understand evidence
- Keep audience in mind while writing
- Careful not to impose own values, preferences, local context



## Cochrane Strengths

- Provide 'big picture' of existing research
- Broad topic range
- Rigorous methods for systematic reviews
- Uses critical appraisal skills
- Prevents duplication
- Identify gaps in research
- Identify research questions
- Independent from commercial interests



## The Cochrane Library

- The Cochrane Library is main product produced by the Collaboration
- Contains several databases of evidence over 700,000 records
- Updated quarterly



## The Cochrane Library

*"Every day someone, somewhere  
searches*

*The Cochrane Library **every second**,  
reads an abstract **every two seconds**  
and  
downloads a full-text article **every three  
seconds.**"*

The Cochrane Library usage data 2009



## Cochrane Library; Issue 2, 2011

Cochrane Reviews	4544 reviews 2000 protocols
Other reviews	14018
Clinical trials	641406
Methodology studies	14095
Health technology assessments	9292
Economic evaluations	29219



## Cochrane Library

- Includes more than Cochrane Reviews
- Includes six other databases that provide excellent, high quality information
- Unique in including health technology assessments and economic evaluations
- Cochrane Review abstracts & full-text
- Cochrane Library is a great resource for high quality evidence to use in practice



## Cochrane Library - 6 databases

### 1. Database of Systematic Reviews (Cochrane Reviews)

- 6,544 reviews

### 2. Database of Abstracts of Reviews of Effects (DARE)

- 14,018 reviews
- Abstracts of systematic reviews (other than Cochrane) that have been quality-assessed. Each abstract includes a summary of the review together with a critical commentary about the overall quality.

### 3. Central Register of Controlled Trials (Central)

- 641,406 trials
- Details of published articles taken from bibliographic databases (notably MEDLINE and EMBASE), and other published and unpublished sources.



## Cochrane Library: 6 databases

### 4. Cochrane Methodology Register

- 14,095 Articles
- Contains studies of methods used in reviews and more general methodological studies which could be relevant to anyone preparing systematic reviews.

### 5. Health Technology Assessment Database

- 9,393 HTAs
- Details of completed and ongoing health technology assessments (studies of the medical, social, ethical and economic implications of healthcare interventions) from around the world.

### 6. NHS Economic Evaluation Database

- 29,219 Evaluations
- Identifies economic evaluations from around the world, appraises their quality and highlights their relative strengths and weaknesses.




## Browsing the Cochrane Library

Can Browse the Cochrane Reviews by:

- **Topic** – Broad subject areas with narrower subtopics
- **New Reviews and Updated Reviews**
- **A-Z Listings**
- **Review Group** – Most useful for looking at reviews that have been undertaken by Review Groups






**THE COCHRANE LIBRARY**  
 Independent high-quality evidence for health care decision making

from The Cochrane Collaboration

**SEARCH THE COCHRANE LIBRARY**  
 Title, Abstract or Keyw ▾  
 enteral nutrition

or try an [Advanced Search](#)

**ABOUT THE COCHRANE LIBRARY**  

The *Cochrane Library* is a collection of six databases that contain different types of high-quality, independent evidence to inform healthcare decision-making, and a seventh database that provides information about groups in The Cochrane Collaboration.

- [Cochrane Database of Systematic Reviews](#)
- [Cochrane Central Register of Controlled Trials](#)
- [Cochrane Methodology Register](#)
- [Database of Abstracts of Reviews of Effects](#)
- [Health Technology Assessment Database](#)
- [NHS Economic Evaluation Database](#)
- [About The Cochrane Collaboration](#)



**Editor in Chief**  


Dr David Tovey is the first Editor in Chief of *The Cochrane Library* (since 2009) and oversees the *CDSR* content. Dr Tovey is based in the Cochrane Editorial Unit, along with Dr Harriet MacLachose (Senior Editor) and Mr Toby Lasserson (Scientific Editor). You can contact the Editor in Chief via email at [editorial-unit@cochrane.org](mailto:editorial-unit@cochrane.org). Other contact details are available on the [Cochrane Editorial Unit website](#).

**Publisher**  

John Wiley & Sons, Ltd. publishes *The Cochrane Library*. Deborah Pentescu-Gilbert, publisher, can be contacted at: John Wiley & Sons, Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK. Email: [dpentesci@wiley.com](mailto:dpentesci@wiley.com).

**COCHRANE DATABASE OF SYSTEMATIC REVIEWS**


**THE COCHRANE LIBRARY**  
 Independent high-quality evidence for health care decision making

from The Cochrane Collaboration

**BROWSE**  
 Cochrane [By Topic](#) | [New Reviews](#) | [Updated Reviews](#) | [A-Z](#) | [By Review Group](#)  
 Reviews:  
 Other [Other Reviews](#) | [Clinical Trials](#) | [Methods Studies](#) | [Technology Assessments](#) | [Economic Evaluations](#)

**SEARCH**  
 Enter search term  Title, Abstract or Keyw ▾   
[Advanced Search](#) | [MeSH Search](#) | [Search History](#) | [Saved Searches](#)

**Search Results**  
 Show Results in:  
**Cochrane Reviews [48]** | [Other Reviews \[73\]](#) | [Clinical Trials \[2284\]](#) | [Methods Studies \[2\]](#) | [Technology Assessments \[12\]](#) | [Economic Evaluations \[74\]](#) | [Cochrane Groups \[0\]](#)  
 There are **48** results out of **6544** records for "enteral nutrition in Title, Abstract or Keywords in Cochrane Database of Systematic Reviews"

View: **1-25** | [26-48](#)

Record Information	Issue: <a href="#">Current</a>   <a href="#">All</a>	Restrict to: <a href="#">Reviews</a>   <a href="#">Protocols</a>	Sort by: <a href="#">Record Title</a>   <a href="#">Match %</a>   <a href="#">Date</a>
<input type="checkbox"/> <a href="#">Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications</a> Henning Keinke Andersen, Stephen J Lewis, Steve Thomas February 2011 <a href="#">New search</a> <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Enteral tube feeding for amyotrophic lateral sclerosis/motor neuron disease</a> Hans Dieter Kitzberg, Michael Benatar January 2011 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Nutritional support in children and young people with cancer undergoing chemotherapy</a> Leanne Jones, Ruth M Watling, Simone Wilkins, Barry Pizer January 2011 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Avoidance of bottles during the establishment of breast feeds in preterm infants</a> Carmel T Collins, Maria Makrides, Jennifer Gillis, Andrew J McPhee November 2010 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Early discharge with home support of gavage feeding for stable preterm infants who have not established full oral feeds</a> Carmel T Collins, Maria Makrides, Andrew J McPhee November 2010 <a href="#">Review</a>			
<input type="checkbox"/> <a href="#">Effect of taurine supplementation on growth and development in preterm or low birth weight infants</a> Allison M Mearns, William McQuinn, John Stanbury, Pravin			

http://www2.cochrane.org/reviews/en/ab004080.html

Google | cochrane collaboration | Search | Share | Bookmarks | Check | Translate | AutoFill | eileen... | Page | Tools

Early enteral nutrition within 24h of col...

The Cochrane Collaboration  
Cochrane Reviews

Explore | New + Updated | Other languages | Full Text: The Cochrane Library

search & browse | by topic | full list of all reviews | by country of author

Audio summaries | Evidence Aid summaries | Cochrane Methodology abstracts

Home  
About us  
Cochrane Reviews  
News  
Events  
Training  
Multimedia  
Contact

### Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications

Andersen HK, Lewis SJ, Thomas S

Bookmark this:  
more...  
Email this page

**Summary**

**Early enteral nutrition within the first 24 hours post colorectal surgery seems to lower complications and enhance recovery.**

There is no obvious advantage in keeping patients 'nil by mouth' following gastrointestinal surgery, and this review support the notion on early commencement. The review implicated lower incidence of several post operative complications. The immediate advantage of caloric intake could be a faster recovery with fewer complications. Length of hospital stay was reduced in nine out of fourteen studies. Overall reduction corresponded to about a day, which is both clinically and economically important. Reduction in complication rates may explain this observation as might faster return of gastrointestinal function upon early commencement of enteral feeding.

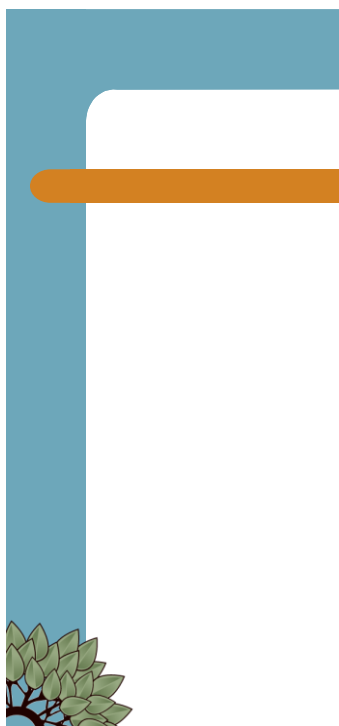
This is a Cochrane review abstract and plain language summary, prepared and maintained by The Cochrane Collaboration, currently published in The Cochrane Database of Systematic Reviews 2011 Issue 2, Copyright © 2011 The Cochrane Collaboration. Published by John Wiley and Sons, Ltd. The full text of the review is available in [The Cochrane Library](#) (ISSN 1464-780X).

This record should be cited as: Andersen HK, Lewis SJ, Thomas S. Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications. Cochrane Database of Systematic Reviews 2006, Issue 4. Art. No.: CD004080. DOI: 10.1002/14651858.CD004080.pub2

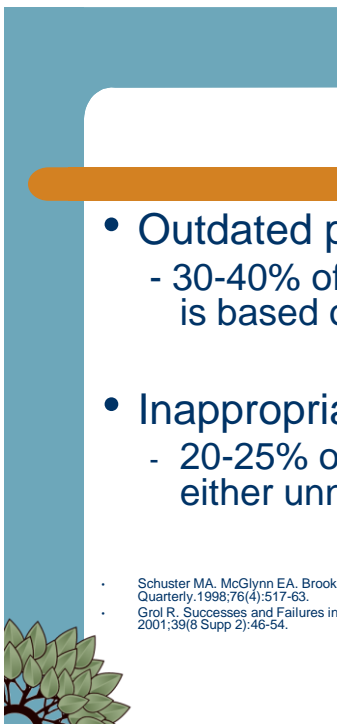
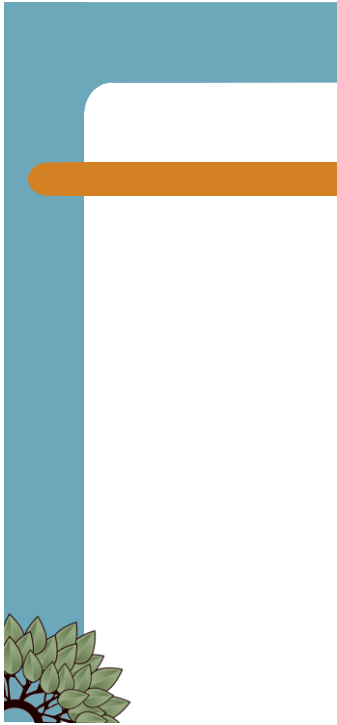
Editorial Group: [Colorectal Cancer Group](#)

This version first published online: October 18, 2006  
Last assessed as up-to-date: January 10, 2011

Internet | Protected Mode: Off | 100%







- Outdated practice
  - 30-40% of patients do not receive care that is based on the most recent evidence
- Inappropriate practice
  - 20-25% of care provided to patients is either unnecessary or potentially harmful

- Schuster MA, McGlynn EA, Brook RH. How good is the quality of health care in the United States? *Milbank Quarterly*. 1998;76(4):517-63.
- Grol R. Successes and Failures in the Implementation of Evidence-Based Guidelines for Clinical Practice. *Medical Care*. 2001;39(8 Supp 2):46-54.

