

# Grading and the GRADE instrument

G-I-N meeting

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Professional good intentions and plausible theories are **insufficient** for selecting policies and practices for protecting, promoting and restoring health.

Iain Chalmers

How can we judge the extent of our confidence that adherence to a recommendation will do more good than harm?

# GRADE

Grades of Recommendation  
Assessment, Development and  
Evaluation

# Why bother about grading?

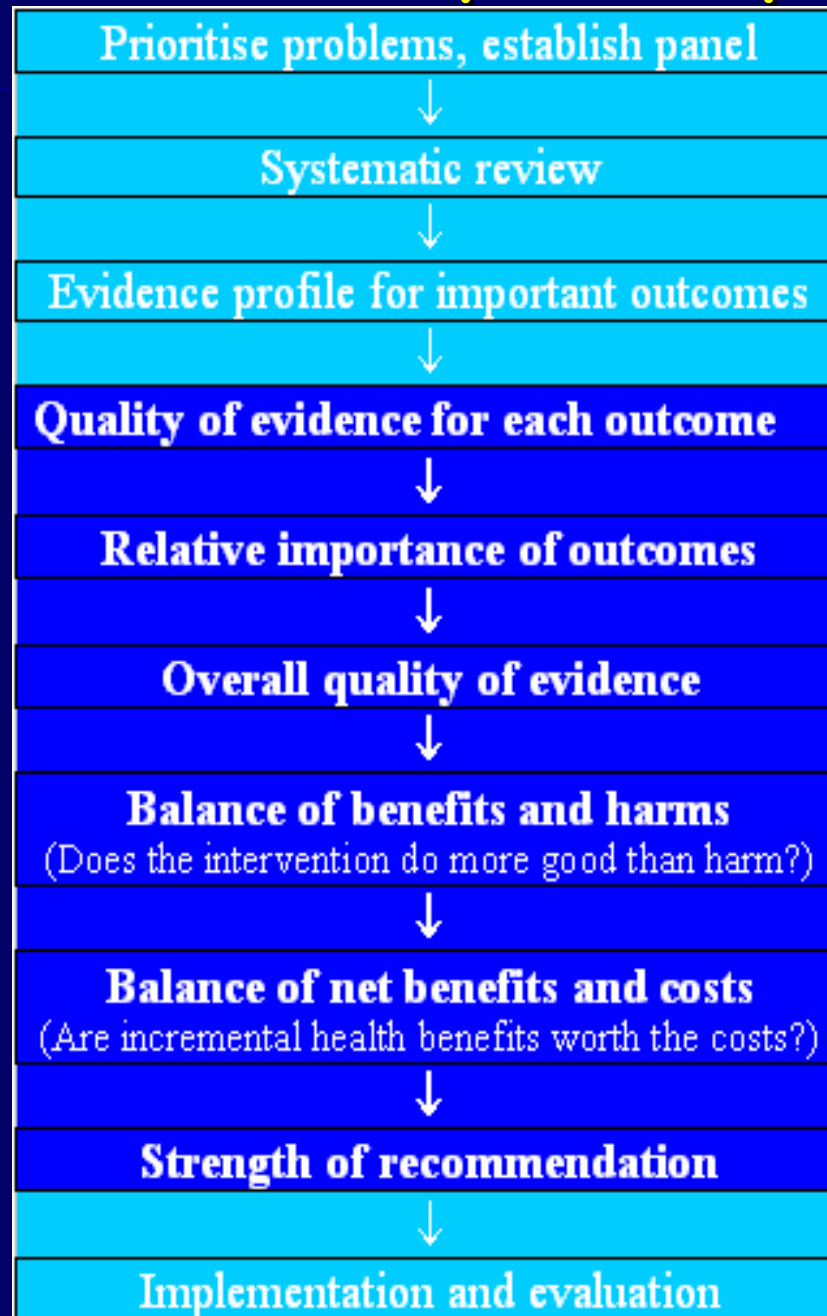
- People draw conclusions about the
  - quality of evidence
  - strength of recommendations
- Systematic and explicit approaches can help
  - protect against errors
  - resolve disagreements
  - facilitate critical appraisal
  - communicate information
- However, there is wide variation in currently used approaches

# Confused?

Recommendation for use of oral anticoagulation in patients with atrial fibrillation and rheumatic mitral valve disease

Evidence	Recommendation	Organization
■ B	Class I	➤ AHA
■ C+	1	➤ ACCP
■ IV	C	➤ SIGN

# Guideline development process



# Quality of evidence

The extent to which one can be confident that an estimate of effect or association is correct.

It depends on the:

- **study design** (e.g. RCT, cohort study)
- **study quality/limitations** (protection against bias; e.g. concealment of allocation, blinding, follow-up)
- **consistency of results**
- **directness of the evidence** including the
  - **populations** (those of interest versus similar; for example, older, sicker or more co-morbidity)
  - **interventions** (those of interest versus similar; for example, drugs within the same class)
  - **outcomes** (important versus surrogate outcomes)
  - **comparison** (A - C versus A - B & C - B)

# Quality of evidence

The quality of the evidence (i.e. our confidence) may also be REDUCED when there is:

- ↓ Sparse or imprecise data
- ↓ Reporting bias

The quality of the evidence (i.e. our confidence) may be INCREASED when there is:

- ↑ A strong association
- ↑ A dose response relationship
- ↑ All plausible confounders would have reduced the observed effect
- ↑ All plausible biases would have increased the observed lack of effect

# Quality assessment criteria

Quality of evidence	Study design	Lower if	Higher if
High	Randomised trial	<b>Study quality:</b> -1 Serious limitations -2 Very serious limitations  -1 Important <b>inconsistency</b>  <b>Directness:</b> -1 Some uncertainty -2 Major uncertainty  -1 <b>Sparse or imprecise data</b>  -1 High probability of <b>reporting bias</b>	<b>Strong association:</b> +1 Strong, no plausible confounders +2 Very strong, no major threats to validity  +1 Evidence of a <b>Dose response gradient</b>  +1 All plausible <b>confounders</b> would have reduced the effect
Moderate			
Low	Observational study		
Very low	Any other evidence		

# Categories of quality

- **High:** Further research is very unlikely to change our confidence in the estimate of effect.



- **Moderate:** Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.



- **Low:** Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.



- **Very low:** Any estimate of effect is very uncertain.



# Judgements about the overall quality of evidence

- most systems just use evidence about primary benefit/outcome
- but what about other outcomes (downsides)?
- options:
  - ignore all but primary outcome
  - base it on the evidence for benefits
  - some blended approach
  - having separate grades for benefits and harms
  - weakest of any outcome

# Strength of recommendation

The extent to which one can be confident that adherence to a recommendation will do more good than harm.

- **trade-offs** (the relative value attached to the expected benefits, harms and costs)
- **quality of the evidence**
- **translation of the evidence** into practice in a specific setting
- **uncertainty about baseline risk**

# Judgements about the balance between benefits and harms

- Before considering cost and making a recommendation
- For a specified setting, taking into account issues of translation into practice

# Clarity of the trade-offs between benefits and the harms

- the estimated size of the effect for each main outcome
- the precision of these estimates
- the relative value attached to the expected benefits and harms
- important factors that could be expected to modify the size of the expected effects in specific settings; e.g. proximity to a hospital

# Balance between benefits and harm

- Net benefits: The intervention does more good than harm.
- Trade-offs: There are important trade-offs between the benefits and harms.
- Uncertain net benefits: It is not clear whether the intervention does more good than harm.
- Not net benefits: The intervention does not do more good than harm.

# Judgements about recommendations

This should include considerations of costs; i.e. "Is the net gain (benefits-harms) worth the costs?"

- Do it

- Probably do it

No recommendation

- Probably don't do it

- Don't do it

# GRADE for diagnostic tests

Quality of evidence	Study design	Lower if *
<b>High</b>	Cross-sectional (or cohort) studies of patients with diagnostic uncertainty with direct comparison	<b>Study limitations</b> (including representativeness of population, choice of gold standard, incomplete performance of tests, independence of test interpretation)
<b>Moderate</b>		-1 Serious limitations -2 Very serious limitations
<b>Low</b>	Anything else	-1 <b>Important inconsistency</b>
<b>Very low</b>		<b>Directness</b> -1-Some uncertainty -2-Major uncertainty  -1 <b>Sparse or imprecise data</b>  -1 <b>High probability of reporting bias</b>

# GRADE profiler (GRADEpro)

GRADE Profiler 2005 - [Profile: Oestrogen + progestin in healthy asymptomatic women]

File Tools Development Window GRADE Help

Grade Profiles

- Oestrogen + progestin in h
- CHD
- Hip Fracture
- Colorectal Cancer
- Breast Cancer
- Stroke
- Venous Thrombosis
- Gall Bladder Disease

Question format

Should [intervention] be used in [population] ?

Intervention: oestrogen + progestin

Population: healthy asymptomatic wo

Question

Should oestrogen + progestin be used in healthy asymptomatic women?

Short profile name

**Oestrogen + progestin in healthy asymptomatic women**

Author(s)

GRADE working group

Date of last minor update: Friday, October 01, 200

Date of last substantive update: Friday, October 01, 200

Setting

Primary prevention

Patients or population

healthy asymptomatic postmenopausal women

Systematic review(s)

Someone do it quickly

Save Close

Oestrogen + progestin in health

# Separation by outcomes

GRADE Profiler 2005 - [Outcome: CHD]

File Tools Development Window GRADE Help

Grade Profiles

- Oestrogen + progestin in h
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- Gall Bladder Disease

Quality Assessment  Other considerations  Summary of findings

Quality assessment

Outcome	How was the outcome assessed?
CHD	
Number of studies	0
Footnote	
Design	Randomised trials
Footnote	
Limitations	No limitations
Footnote	
Consistency	No important inconsistency
Footnote	
Directness	No uncertainty
Footnote	

Other considerations

- NONE

CHD

# Work in groups of two

- take a pencil (and paper)
- write down the most important issues/questions you have about *GRADE*

# Small group sessions

- find a group
- select spokes person
- take 30 minutes to complete the task
- be prepared to criticise

# Summary

What is good about GRADE?

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- 

What is most challenging?

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- 
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What do we need to do next?

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