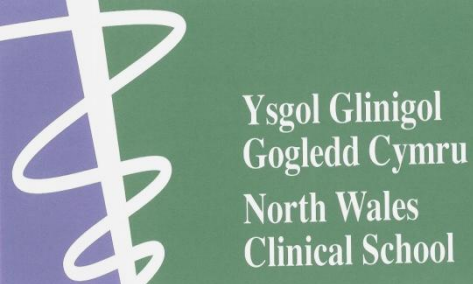


Management strategies for sciatica

Nefyn H Williams





Sciatica review team

North Wales Clinical School, Cardiff now Bangor University

Nefyn Williams, Ruth Lewis, (Co-PIs)

Hosam Matar, John Belcher, Nafees Ud Din, Clare Wilkinson

Swansea University

Ceri Phillips, Deborah Fitzsimmons

Leicester University

Alex Sutton

University of Huddersfield

Kim Burton

Hospital Trusts and Patient Representative

Rob Chakraverty, Ian Braithwaite, Ian Rickard

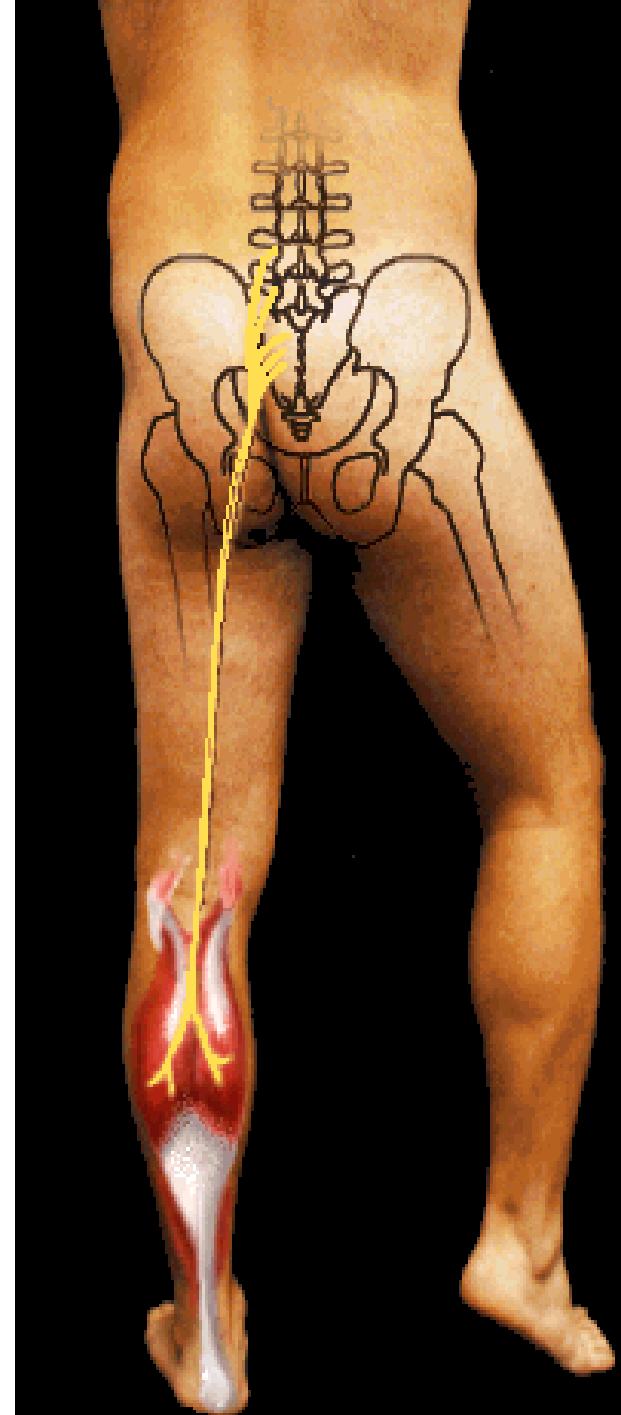


PRIFYSGOL
BANGOR
UNIVERSITY



Nerve root pain

- <5% of cases of back pain
- Sharp, shooting or burning pain radiating down posterior leg in segmental distribution
- Leg pain > back pain
- Aggravated by coughing or sneezing
- Associated with numbness or paraesthesia
- Examination- SLR, slump test, neurological deficit



Importance of sciatica to the NHS

- Common

Lifetime prevalence Sweden

5.3% men, 3.7% women

- Disabling

After 1 year 30% persistent,
troublesome symptoms

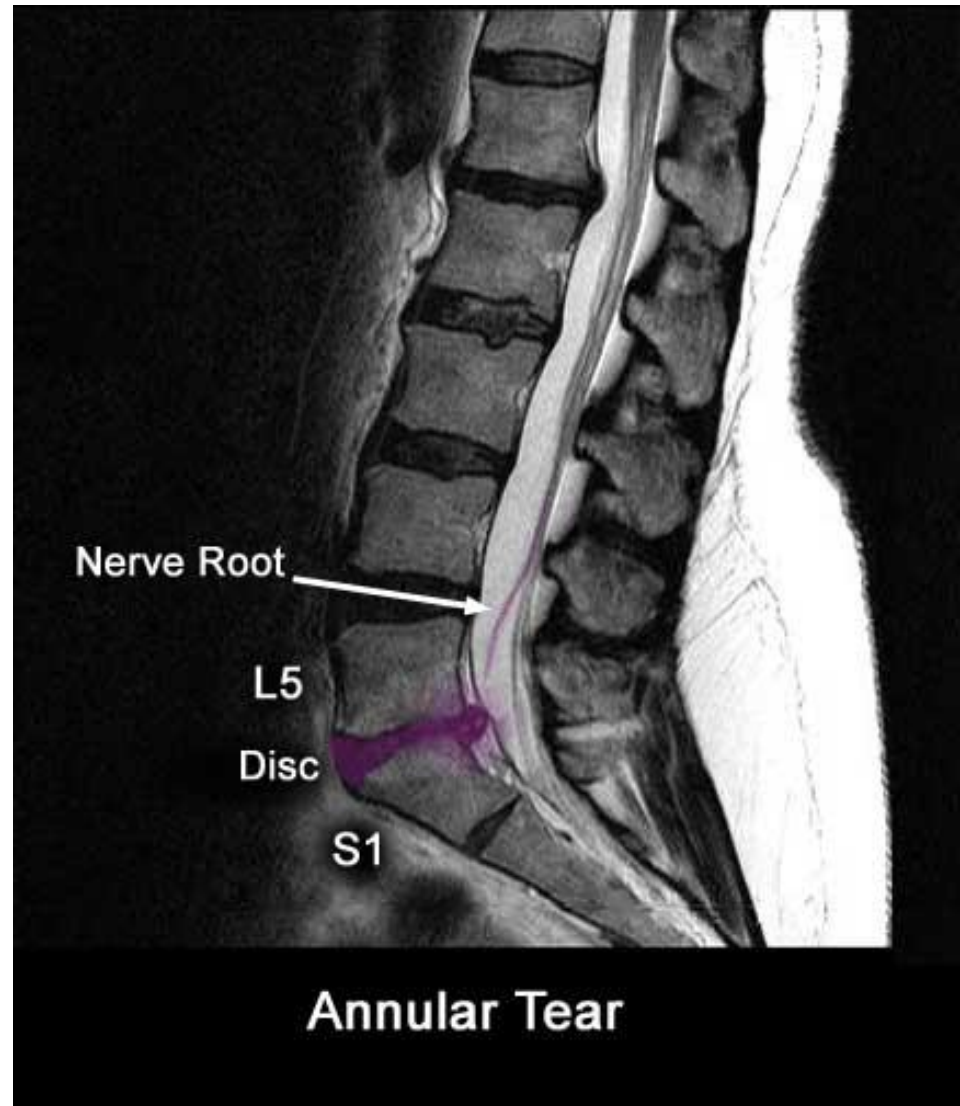
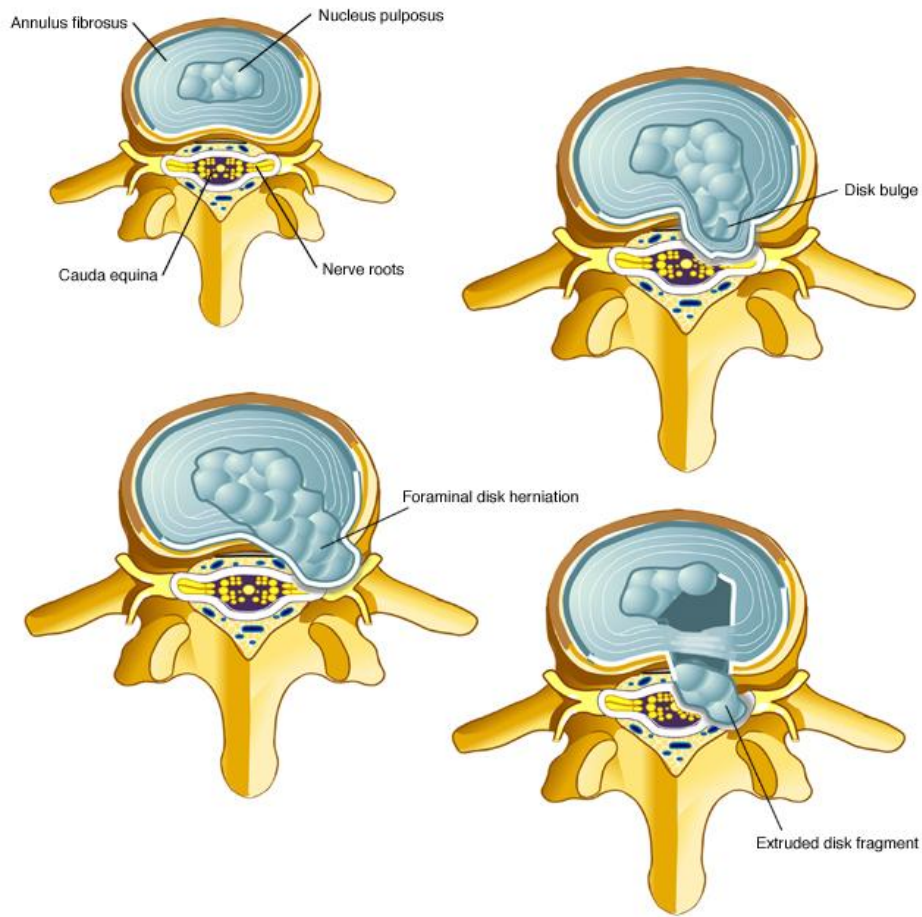
- Costly

5-15% treated by disc surgery
Netherlands (1991)

- US\$128M hospital care
- US\$730M absenteeism
- US\$708M disablement



Prolapsed Intervertebral Disc





Non-surgical treatments

- Main aim is pain reduction in acute phase
- Lack of evidence from previous systematic reviews
 - Bed rest compared to keeping active (equivocal)
 - NSAIDs (no evidence of efficacy)
 - Intra-muscular steroid (no evidence of efficacy)
 - Traction (no evidence of efficacy or effectiveness)
 - Spinal manipulation (some evidence of effectiveness)
 - Epidural steroids (moderate evidence of short-term efficacy)

Surgery

- Cauda equina absolute indication
- In 2005/06 8,683 lumbar discectomies performed in England
- Cochrane review
 - Surgical discectomy better than chemonucleolysis, which is better than placebo
 - No difference between microdiscectomy & standard discectomy, but both better than percutaneous discectomy
- Mortality 0.3%; infection 3%; ineffective 10-20%



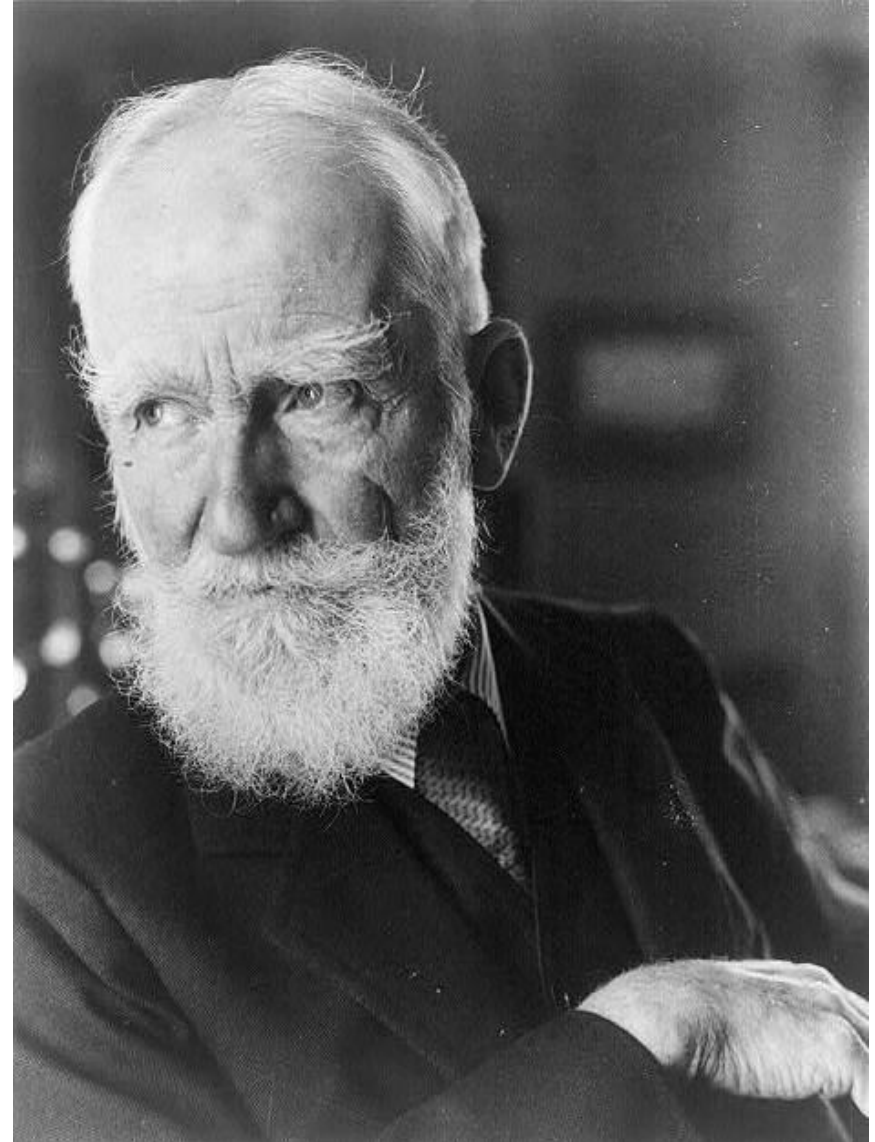
Dutch guidelines



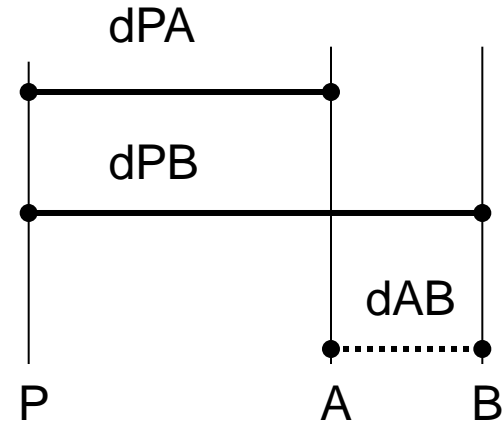
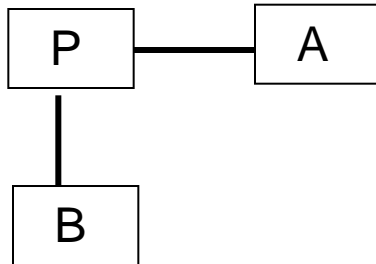
- Explain & reassure
- Advice to keep active; bed rest does not result in faster recovery
- Analgesic ladder (paracetamol; NSAIDs; tramadol or codeine; morphine)
- Urgent surgical referral (cauda equina; acute severe weakness; progressive weakness)
- Refer if intractable radicular pain >6-8 weeks

The Doctor's Dilemma

"It does happen exceptionally that a practising doctor makes a contribution to science...but it happens much oftener that he draws disastrous conclusions from his clinical experience because he has no conception of scientific method, and believes, like any rustic, that the handling of evidence and statistics needs no expertness."

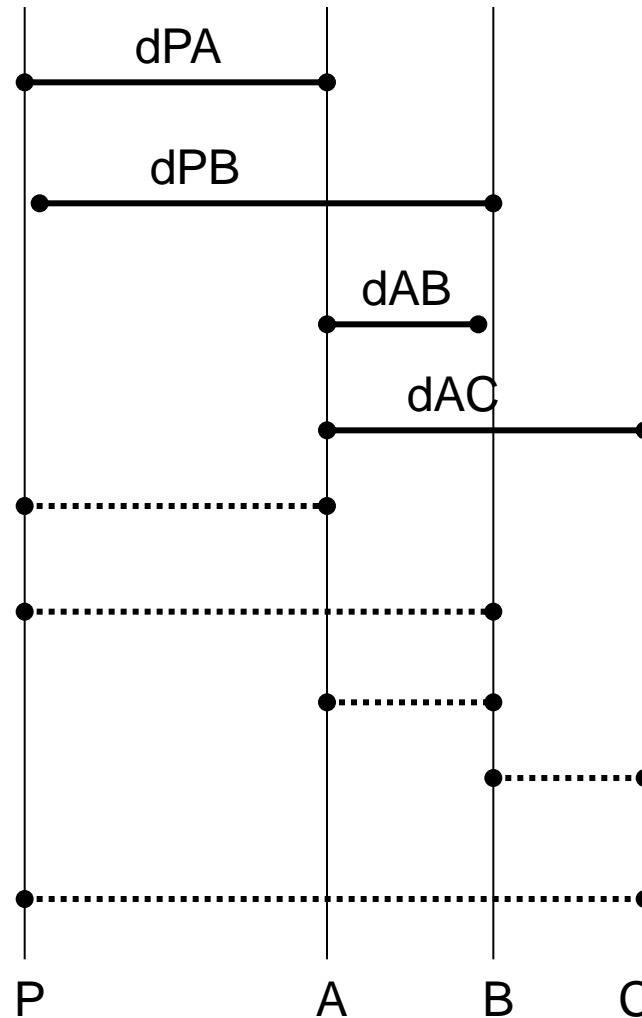
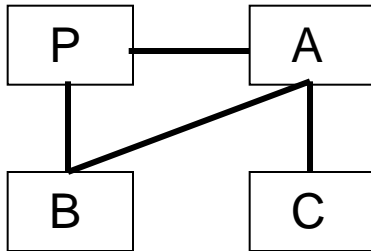


Mixed Treatment Comparisons 1



$$d_{AB} = d_{PB} - d_{PA}$$

Mixed Treatment Comparisons 2



$$d_{PA} = d_{PB} - d_{AB}$$

$$d_{PB} = d_{PA} + d_{AB}$$

$$d_{AB} = d_{PB} - d_{PA}$$

$$d_{BC} = d_{AC} - d_{AB}$$

$$d_{PC} = d_{PA} + d_{AC}$$

Results of MTC with random effects model

Comparison	Mean	95% CrI	
Methotrexate vs. placebo	-0.33	-0.73	0.06
Anti-TNF α vs. placebo	-0.35	-0.75	0.04
Anti-TNF α + methotrexate vs. placebo	-0.60	-1.06	-0.10
Anti-TNF α vs. methotrexate	-0.02	-0.42	0.37
Anti-TNF α + methotrexate vs. methotrexate	-0.27	-0.53	0.03
Anti-TNF α + methotrexate vs. anti-TNF α	-0.24	-0.70	0.26
P (placebo is best)	1%		
P (methotrexate is best)	1%		
P (anti-TNF α is best)	8%		
P (anti-TNF α + methotrexate is best)	90%		

Heterogeneity

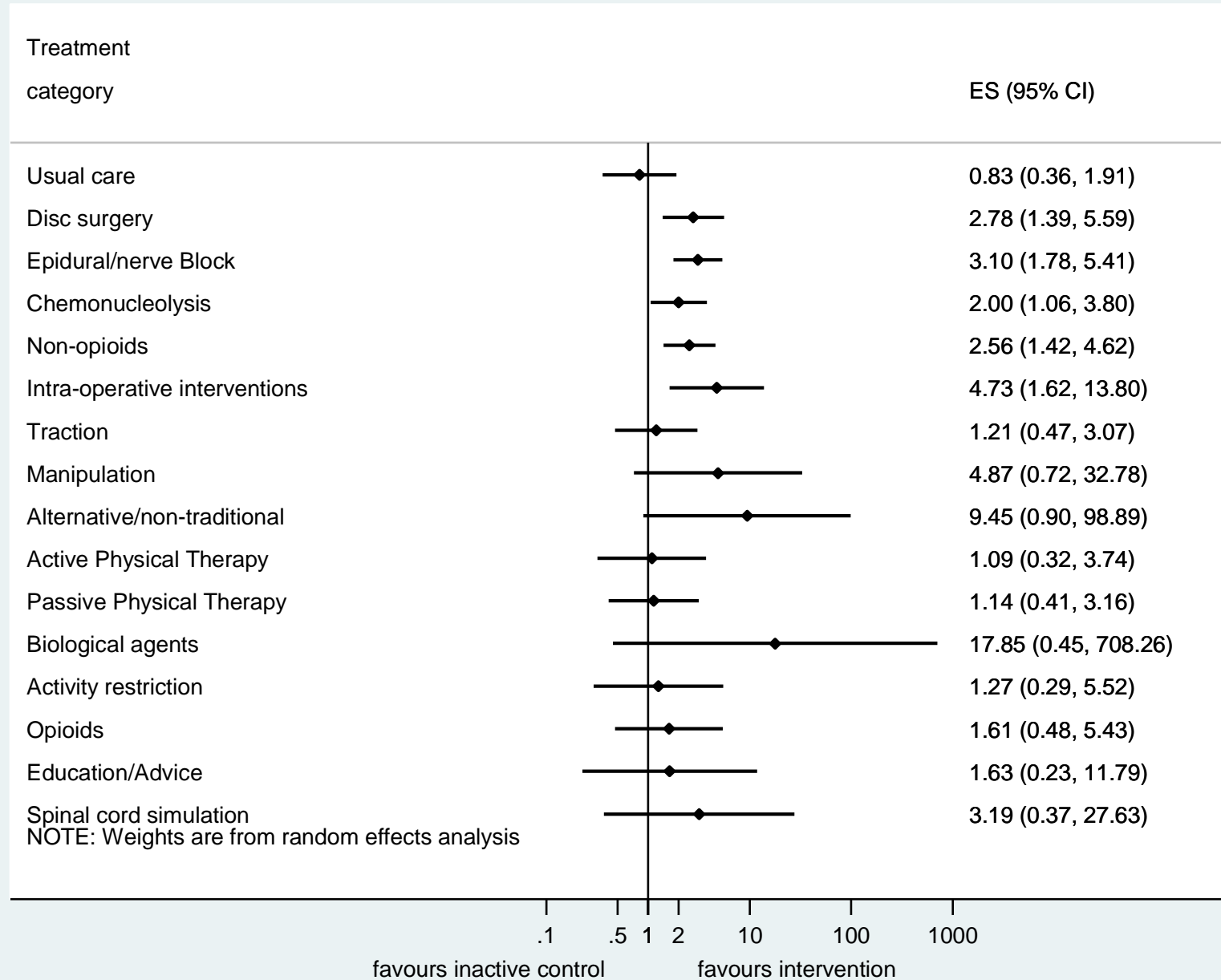


The clinical effectiveness and cost-effectiveness of management strategies for sciatica: systematic review and economic model

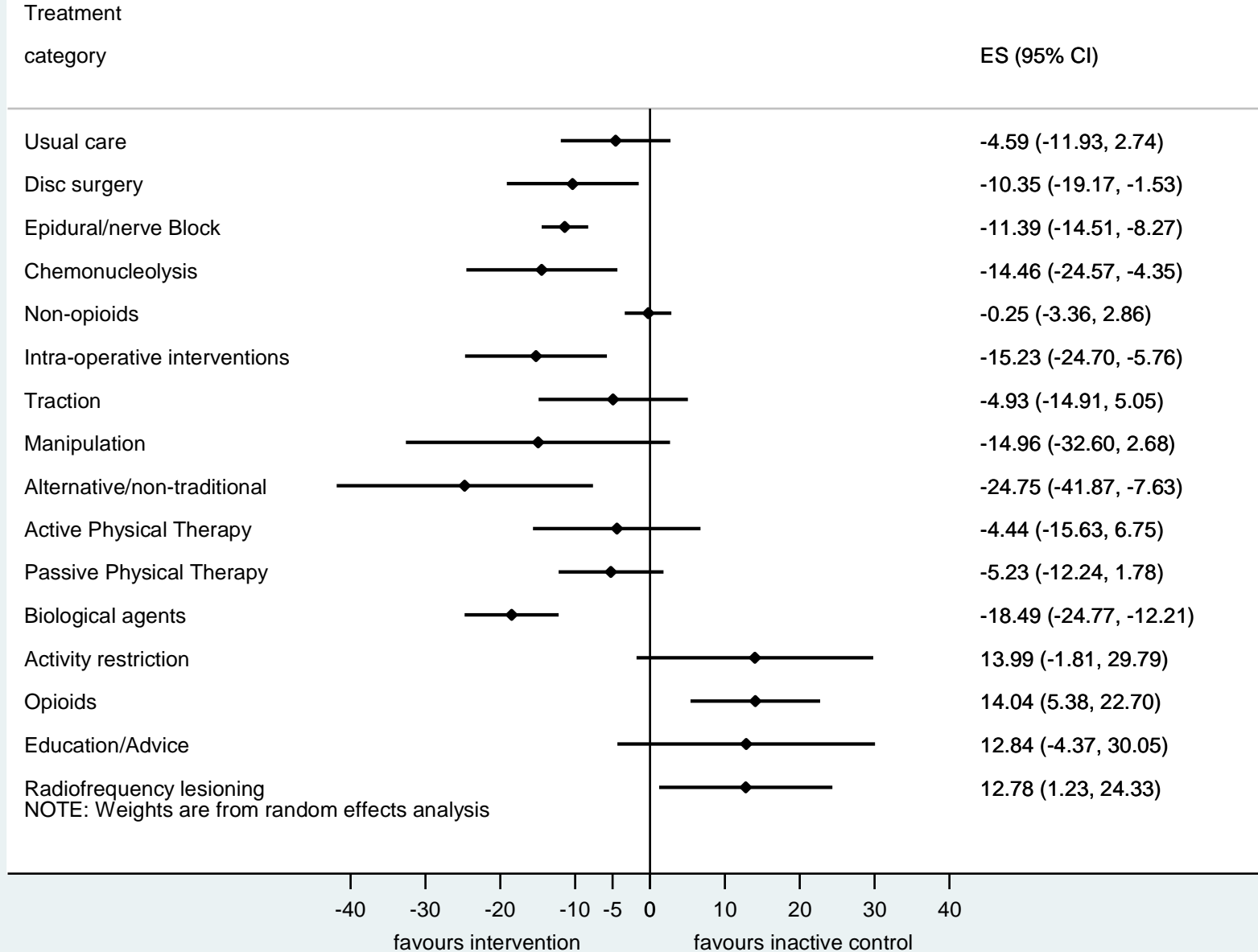
R Lewis, N Williams, HE Matar, N Din,
D Fitzsimmons, C Phillips, M Jones, A Sutton,
K Burton, S Nafees, M Hendry, I Rickard,
R Chakraverty and C Wilkinson



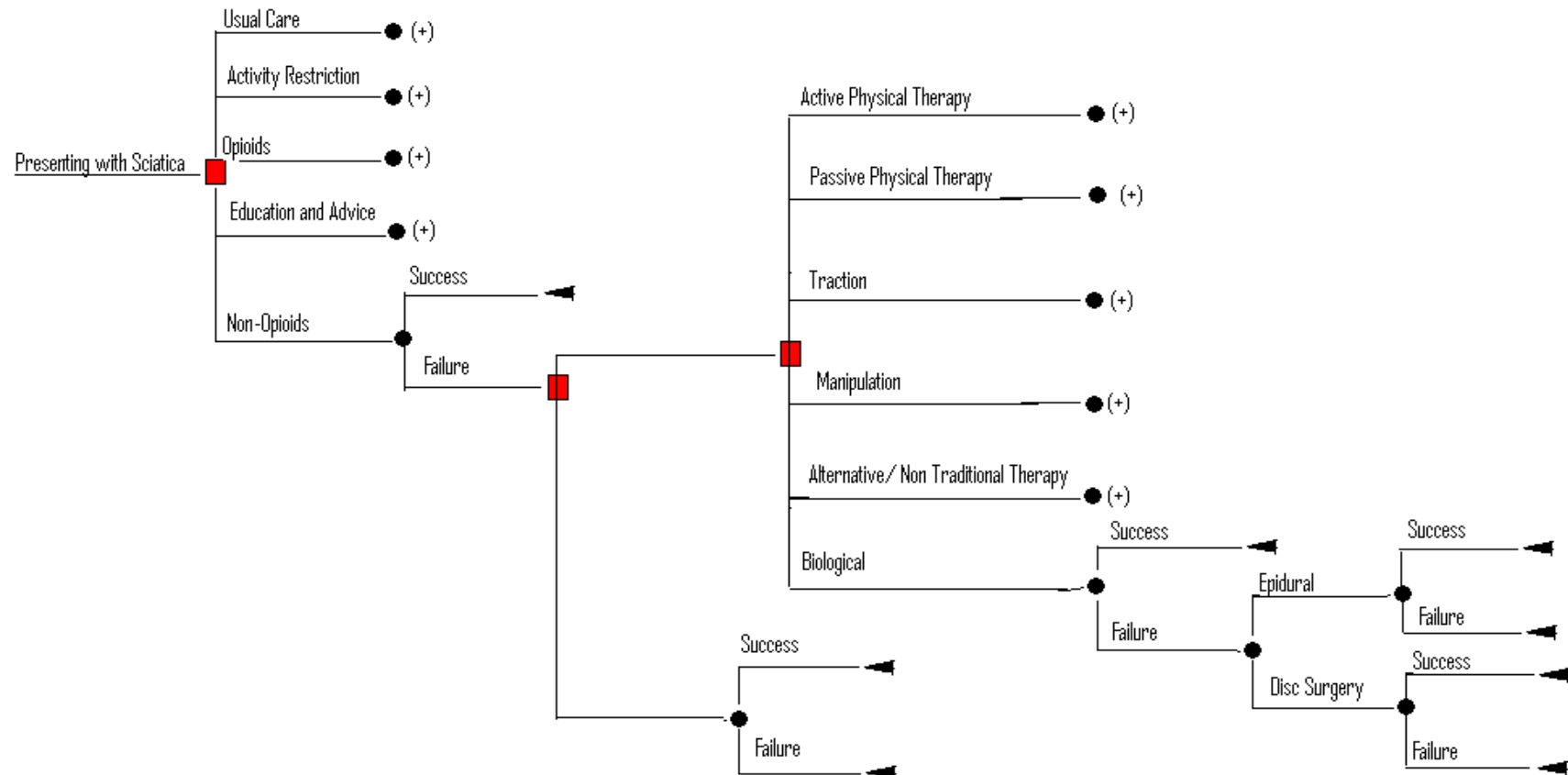
Global effect (RCTs/Q-RCTs)



Pain intensity (RCTs/Q-RCTs)



Decision tree for economic model



Economic model

- 1st treatment pathway probability of success

Non-opioids 0.613

- 2nd treatment pathway

Non-opioids/biological/epidural/disc surgery 0.996

- 3rd treatment pathway

Disc surgery 0.633

- 4 treatment strategies cost-effective

- Non-opioids/alternative
- Non-opioids/alternative/epidural
- Non-opioids/alternative/epidural/disc surgery
- Non-opioids/biological/epidural/disc surgery

Effective treatments

- non-opioid medication
- disc surgery
- epidural injections

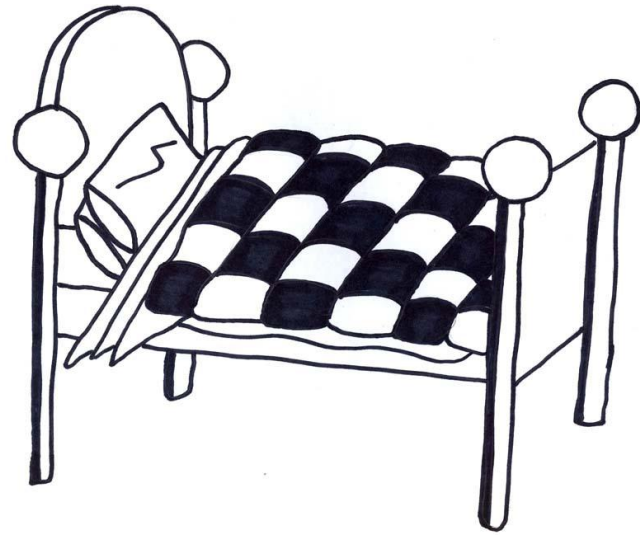


Ineffective treatments

- Opioids

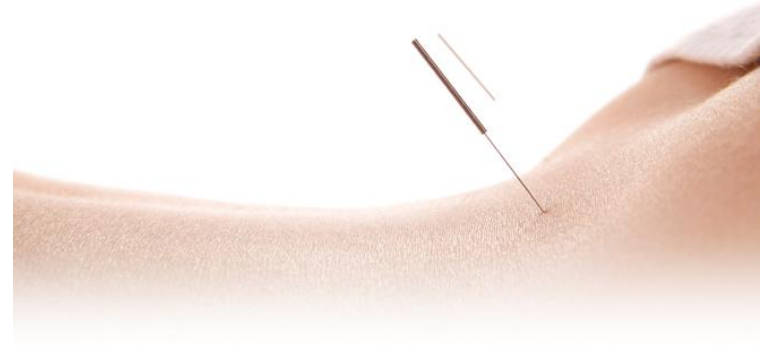


- Bed rest



Possible effective treatments

- Acupuncture



- Biological agents

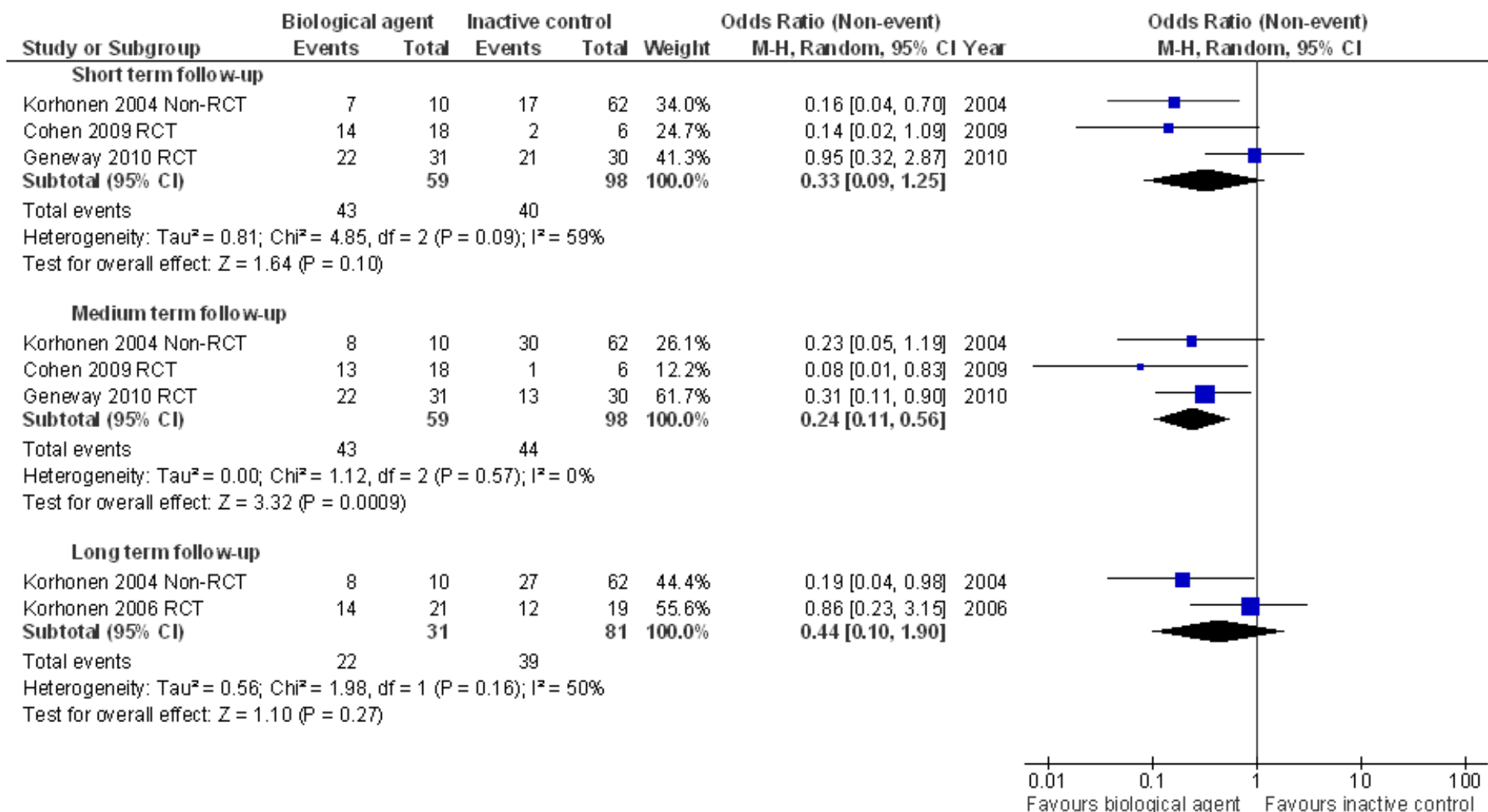


Stepped care

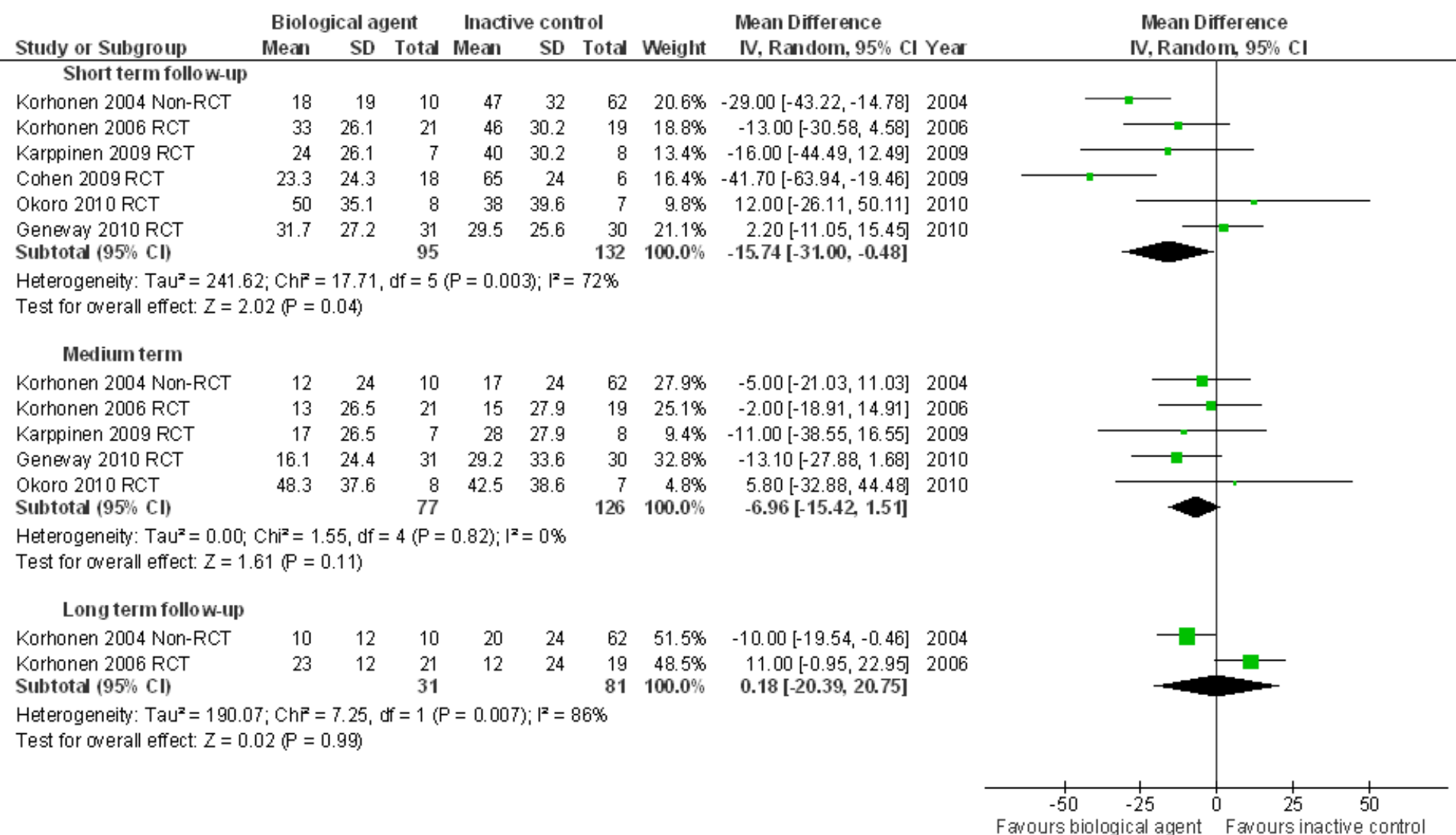
- Stepped care better than direct referral for surgery



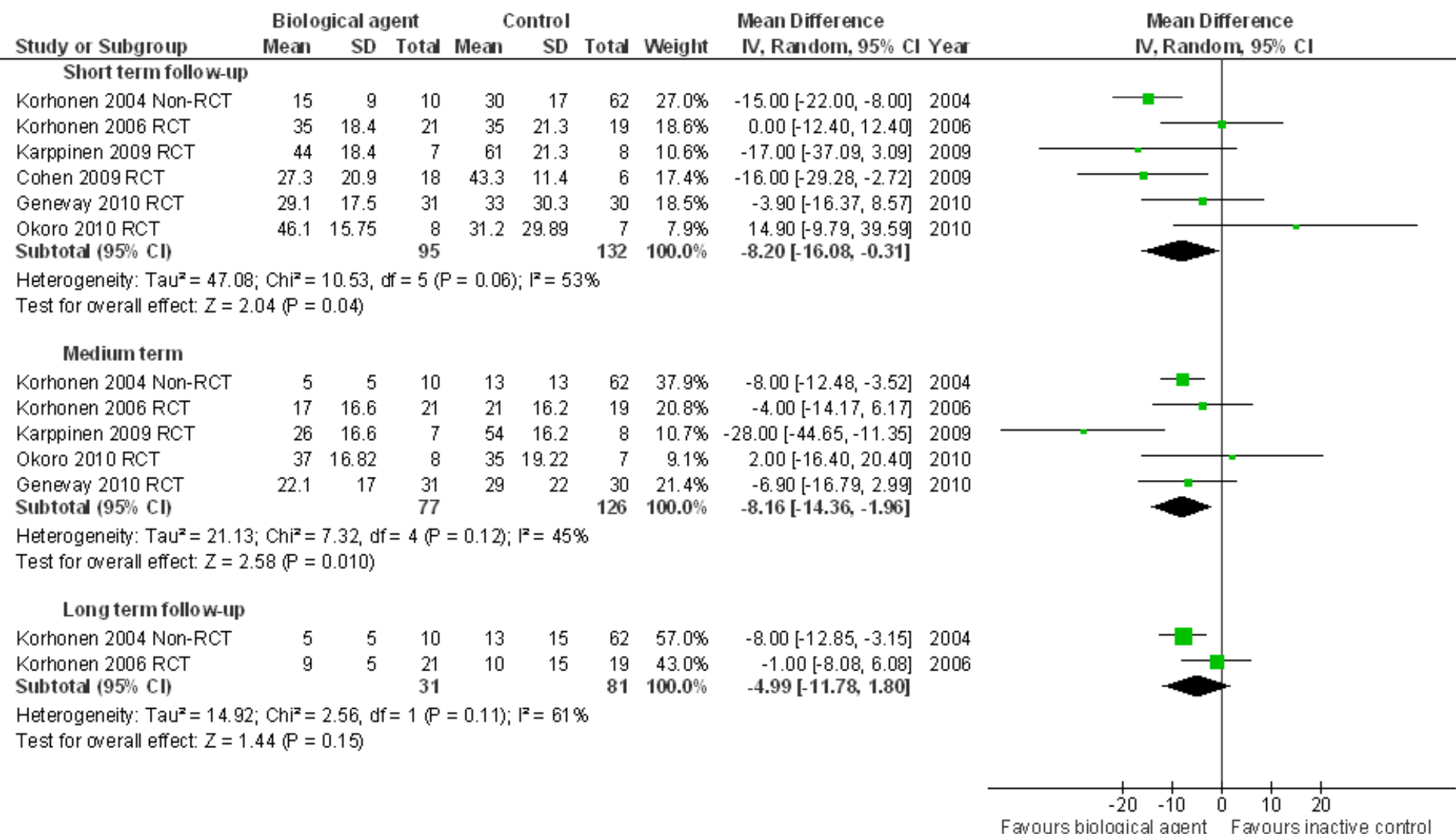
Global effects: biological agent versus placebo



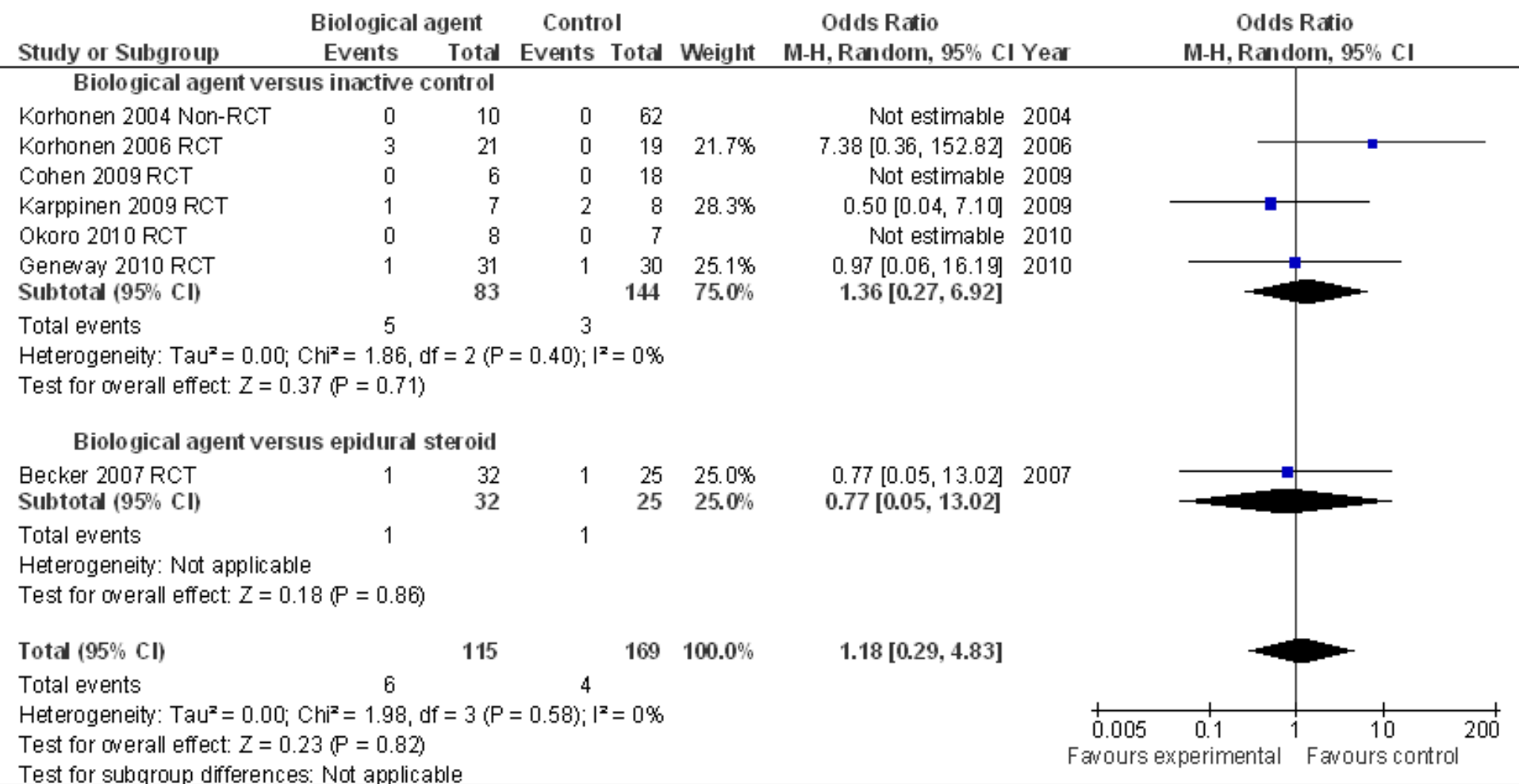
Leg pain intensity: biological agent versus placebo



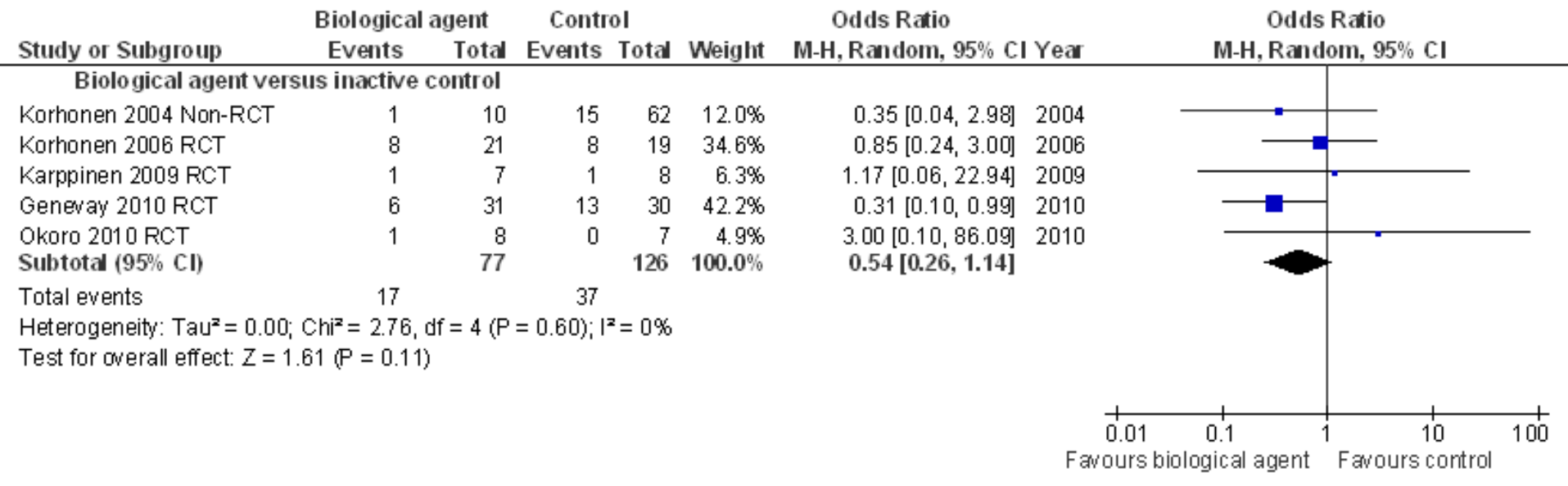
Oswestry Disability Index: biological agent versus placebo



Total number of adverse effects: biological agent versus placebo



Number of discectomies: biological agent versus placebo



Any questions?

