Evidence Based Medicine

報告日期：101/06/04

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Clinical Scenario

- Patient profile: 42-year-old male
- Underlying diseases: Nil
- CC: Severe low back pain with radiation to right side for one week
- PI: Low back pain for one year, and it got more severe in one week. Character : sharp, intermittent, aggrevated by walking, relived by rest. He came to our ER
- Admission for L-spine MRI survey. Result: L45 intervertebral disc prolaspse.

Asking Background Questions

- What are red flag signs of low back pain?

Answer of Background question

- 資料出處：DynaMed
- Cauda equina Syndrome
  - **progressive motor or sensory deficit**
  - saddle anesthesia
  - **bilateral sciatica or leg weakness**
  - difficulty urinating, including retention
  - fecal incontinence
  - **additional indicators of nerve root problems**
    - unilateral leg pain > LBP
    - pain radiates to foot or toes
    - numbness and paresthesia in same distribution
    - straight leg raising test induces more leg pain
    - localized neurologic findings (limited to one nerve root

- specific causes (spinal pathology)
  - onset at age < 20 years old or > 55 years old
  - pain that is
    - unrelenting at night
    - unrelated to time or activity (nonmechanical)
    - thoracic
  - widespread neurologic symptoms
  - unexplained weight loss
  - feeling unwell, fever or chills
  - significant trauma
  - penetrating wound near spine
  - structural spinal deformity
  - previous history of
    - osteoporosis
    - cancer, or strong suspicion of current cancer
    - recent infection, including urinary tract infection
    - HIV
    - immunosuppression
  - IV drug use
  - previous history of steroid use
  - substance abuse
  - failure to improve after 4-6 weeks of conservative therapy

Apply

- This patient with low back pain developed acute onset symptoms of radiculopathy
- Herniated intervertebral disc rupture with nerve root compression may be suspected

Asking Foreground Questions

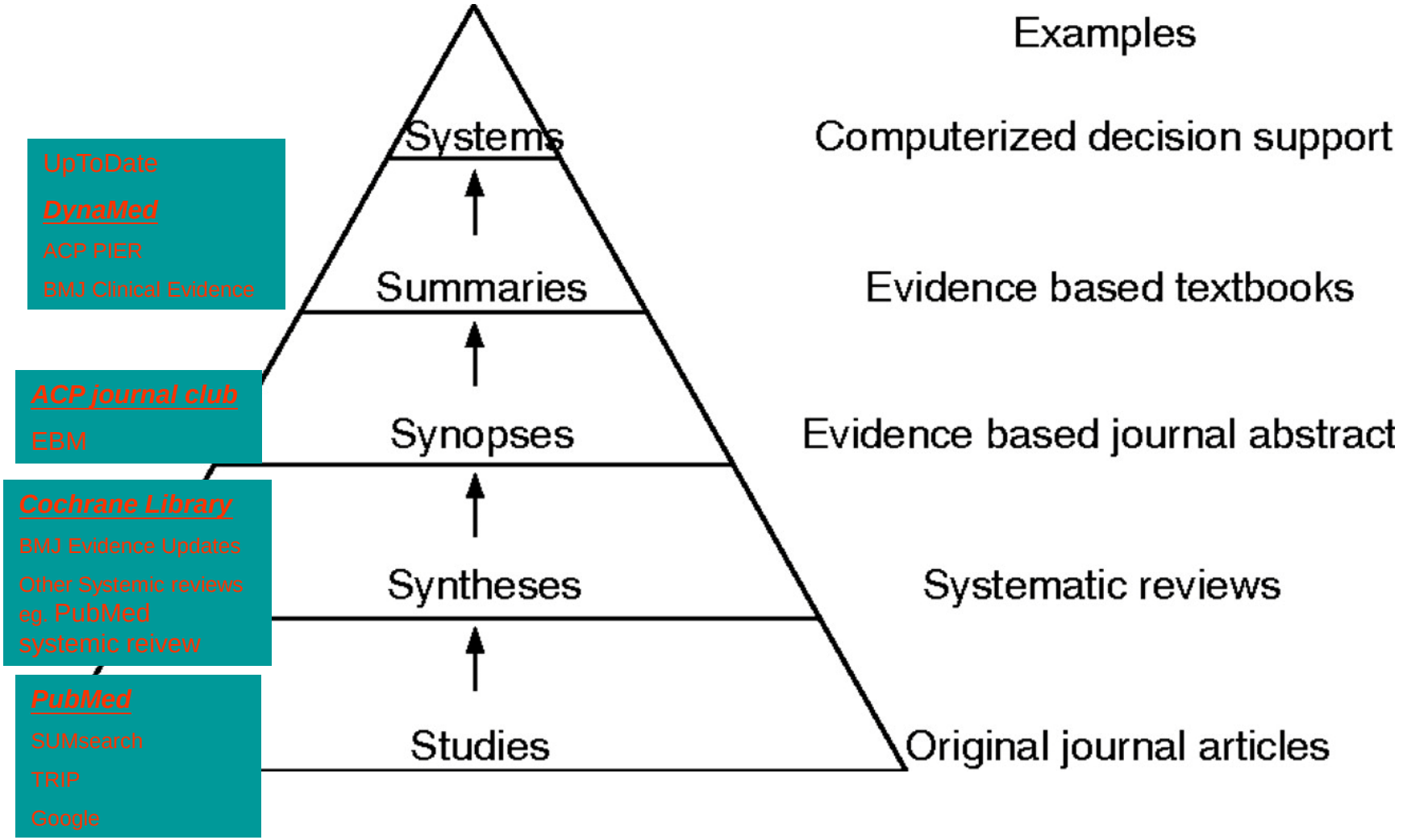
- Do surgery improve the patient's symptoms compared to conservative treatment?

PICO

P	Patient with prolapsed intervertebral disc
I	Operation
C	Conservative treatment
O	Pain relief

Searching for useful Database

The "5S" levels of organisation of evidence from healthcare research



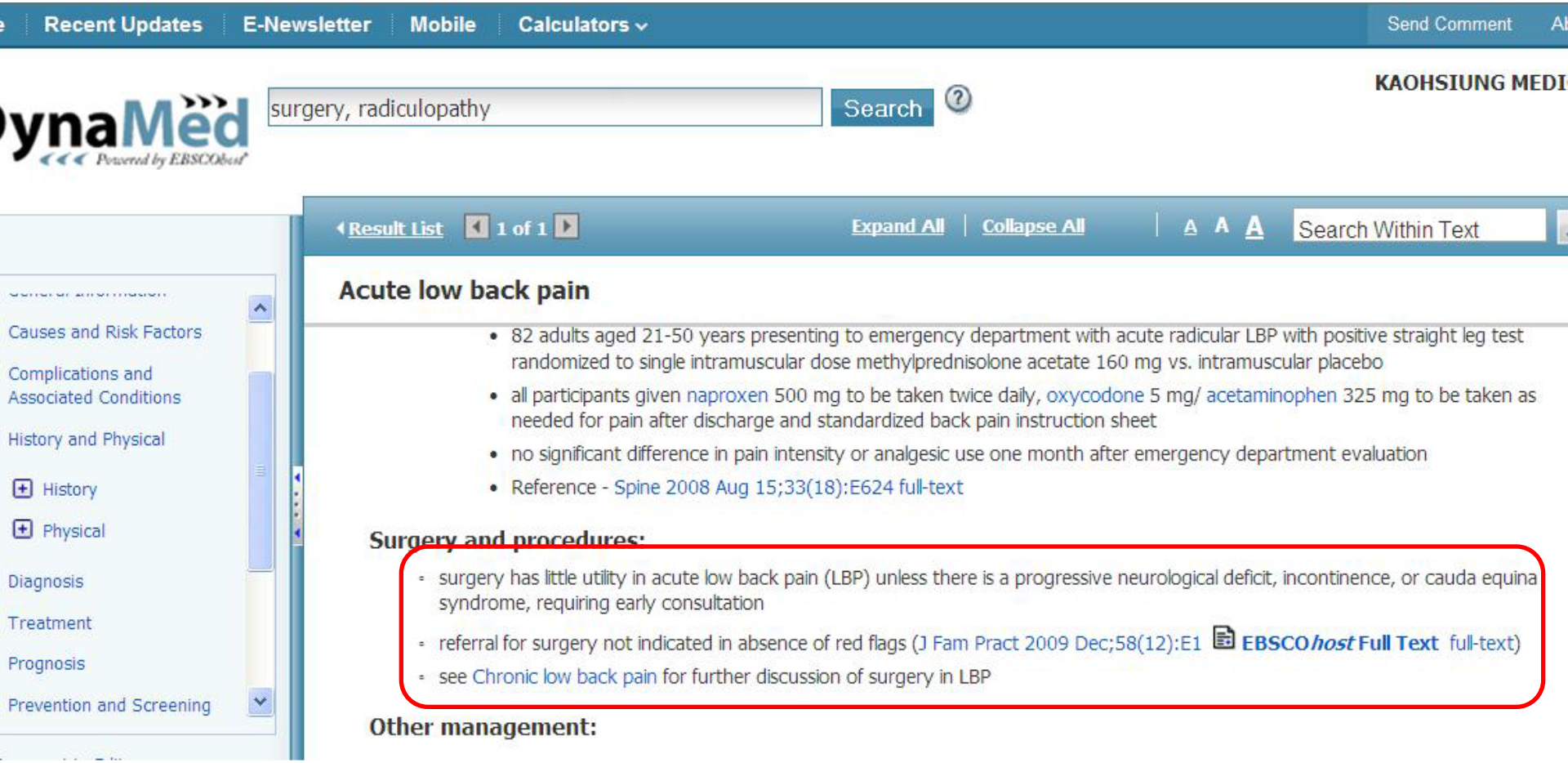
Keywords from PICO item

- MeSH terms: Low back pain, Radiculopathy, Herniated intervertebral disc disease, Prolapsed intervertebral disc disease, Operation, Disckectomy

Summary

出處：

Key word: Low back pain, Prolapsed intervertebral disc disease, Operation



Surgery has little utility in acute low back pain unless there is a neurologic deficit, Incontinence, or cauda equina syndrome

Referral for surgery, not indicated in absence of red flags

Synopses

出處：ACP Journal Club℠
The Best New Evidence for Patient Care

Key word: Surgery, low back pain

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2001 - More women with the pelvic girdle syndrome than with ...

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2011 - Corticosteroid injections improved short-term but not ...

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Therapeutics

Review: Evidence for the effectiveness of surgery for low back pain, radiculopathy, and spinal stenosis is limited

GIM/FP/GP	★★★★★★	Neurology	★★★★★★
Phys Med & Rehab	★★★★★★	Rheumatology	★★★★★★

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ACP Journal Club. 2009 Oct 20;151:JC4-11.

Chou R, Baisden J, Carragee EJ, et al. **Surgery for low back pain: a review of the evidence for an American Pain Society clinical practice guideline.** Spine. 2009;34:1094-109. [PubMed ID: 19363455]

Table 3. Trials of Discectomy *Versus* Nonsurgical Therapy for Radiculopathy With Prolapsed Lumbar Disc

Author, Year Population Evaluated	Surgical Intervention	No. of Patients Duration of Follow-up	Main Results	Quality*
Osterman, 2006[47] Radiculopathy for 6 to 12 wk with imaging-confirmed lumbar disc prolapse	Micro-discectomy	n = 58 2 yr	Microdiscectomy *vs.* nonoperative treatment (intention-to-treat, mean differences at 2 yr, positive values favor microdiscectomy) Leg pain (0–100 scale): 9 (95% CI = −1–+20) Back pain (0–100 scale): 7 (95% CI = −3–+17) ODI (0–100 scale): 3 (95% CI = −4–+10) 15D Health-related quality of life (0–1.0 scale): 0.03 (−0.01–+0.07) Subjective work ability (0–100 scale): 5 (95% CI = −7–+18) At 6 wk, only leg pain superior in microdiscectomy group: mean score 12 *vs.* 25 On-treatment analyses (including 11 patients who crossed over to surgery): No differences for any outcomes	6/9

Osterman,2006
High quality trial,
Microdiscectomy moderately superior to nonsurgical treatment (isometric exercises) for leg pain (but not back pain, the ODI, or other outcomes) at 6 weeks, but no difference on any outcome assessed at 3 months to 2 years.

Peul, 2007[48] and 2008[49] Radiculopathy for 6 to 12 wk with imaging-confirmed lumbar disc prolapse	Micro-discectomy	n = 283 2 yr	Microdiscectomy *vs.* nonoperative treatment (mean difference, negative values favor surgery except for SF-36 where positive values favor surgery) RDQ: −3.1 (95% CI = −4.3-−1.7) at 8 wk, −0.8 (95% CI = −2.1-+0.5) at 26 wk, −0.4 (95% CI = −1.7-+0.9) at 1 yr, and −0.5 at 2 yr (95% CI = −1.8-+0.8) VAS score for leg pain (0–100): −17.7 (95% CI = −23.1-−12.3) at 8 wk, −6.1 (95% CI = −10.0-−2.2) at 26 wk, 0 (95% CI = −4.0-+4.0) at 1 yr, and +2 at 2 yr (95% CI = −2.0-+6.0) VAS score for back pain (0–100): −11.3 (95% CI = −17.4-−5.6) at 8 wk, −2.3 (95% CI = −8.2-+3.6) at 26 wk, −2.3 (95% CI = −8.2-+3.6) at 1 yr, and −1.4 (95% CI = −6.3-+4.5) at 2 yr SF-36 Bodily Pain: +8.4 (95% CI = +3.2–+13.5) at 8 wk, +3.3 (−1.8-+8.4) at 26 wk, +2.7 (95% CI = −2.6-+7.9) at 1 yr, SF-36 Physical Functioning: +9.3 (95% CI = +4.4-+14.2) at 8 wk, +1.5 (95% CI = −3.4-+6.4) at 26 wk, +2.2 (95% CI = −2.8-+7.2) at 1 yr, −1.3 (95% CI = −6.3-+3.7) at 2 yr Recovery (defined as complete or nearly complete disappearance of symptoms as measured on a 7-point Likert scale): 81% *vs.* 36% at 8 wk, 77% *vs.* 71% at 26 wk, 86% *vs.* 82% at 1 yr, 81% *vs.* 79% at 2 yr (hazards ratio 1.97, 95% CI = +1.7–+2.2, at 1 yr)	7/9

Peul, 2007
High quality trial,
Patients assigned to initial surgery reported **a faster rate of perceived recovery at 1 year** (hazard ratio 1.97, 95% CI 1.72–2.22), but **differences in the proportion experiencing recovery were only present at 8-week follow-up** (81% *vs. 36%*). *By 26* weeks, recovery rates were similar (79% *vs. 78%).*

Weber, 1983[58] Radiculopathy unresponsive to 2 wk of nonsurgical inpatient treatment and with imaging-confirmed lumbar disc prolapse	Open discectomy	n = 126 10 yr	Discectomy *vs.* initial nonsurgical treatment "Good" result (patient completely satisfied): 65% (39/60) *vs.* 36% (24/66) at 1 yr, 67% (40/60) *vs.* 52% (34/66) after 4 yr, 58% (35/60) *vs.* 56% (37/66) after 10 yr "Poor" or "bad" results: 8% (5/60) *vs.* 21% (14/66) at 1 yr (OR = 0.34, 95% CI = 0.12–1.02), 14% (8/57) *vs.* 12% (8/66) after 4 yr (OR = 1.21, 95% CI = 0.42–3.46), and 7% (4/55) *vs.* 6% (4/66) after 10 yr (OR = 1.22, 95% CI = 0.29–5.10) Proportion with no low back pain: 60% (36/57) *vs.* 58% (38/66) at 4 yr, 84% (43/51) *vs.* 79% (52/66) at 10 yr Proportion with no radiating pain: 79% (45/57) *vs.* 68% (45/66) at 4 yr, 98% (54/55) *vs.* 98% (65/66) at 10 yr	4/9

Weber, 1983

Lower quality trial (n 126)

Standard open discectomy associated with a lower likelihood of poor results compared to nonsurgical therapy after 1 year (OR 0.38,95% CI0.14–0.99), **but not after 4 or 10 years**(OR1.21, 95% CI 0.42 to 3.45 and OR 1.21, 95% CI 0.29–5.10, respectively)

Weinstein, 2006[59] Spine Outcomes Research Trials Radiculopathy for >6 wk with imaging-confirmed lumbar disc prolapse	Open discectomy	n = 501 2 yr	Standard open discectomy vs. nonoperative treatment, intention-to-treat analyses (mean difference, negative values favor surgery) SF-36 bodily pain (0–100): −2.9 (95% CI = −8.0–+2.2) at 3 mo; −3.2 (−8.4–+2.0) at 2 yr SF-36 physical function (0–100): −2.8 (95% CI = −8.1–2.5) at 3 mo; 0 (95% CI = −5.5–+5.4) at 2 yr ODI: −4.7 (95% CI = −9.3–−0.2) at 3 mo; −2.7 (95% CI = −7.4–+1.9) at 2 yr Sciatica Bothersomeness Index (0–24): −2.1 (95% CI = −3.4–+0.9) at 3 mo; −1.6 (95% CI = −2.9–−0.3) at 2 yr Work status, satisfaction with symptoms, satisfaction with care: No significant differences SF-36 bodily pain scale: on-treatment analyses −15.0 (95% CI = −19.2–−10.9) at 1 yr SF-36 physical function scale: −17.5 (95% CI = −21.5–−13.6) at year ODI: −15.0 (95% CI = −18.3–−11.7) Sciatica Bothersomeness Index: −3.2 (95% CI = −3.2–−2.1)	6/9

Weinstein, 2006

The large (n 501), multicenter, higher-quality Spine Outcomes Research Trial (SPORT)133

No differences between standard open discectomy or microdiscectomy (technique left to discretion of the surgeon) *versus* nonsurgical therapy based on an intention-to-treat analysis.

Interpretation of these findings is complicated by low rates of adherence to treatment assignments

In on-treatment analyses adjusted for potential confounders, surgery was moderately superior by about 15 points on ODI scores and SF-36 bodily pain and physical function scales after 1 year, and differences remained statistically significant through 2 years

Table 5. Summary of Evidence on Surgery for Low Back Pain

Intervention	Population	No. Trials of Surgery *vs.* Nonsurgical Therapy (No. Rated Higher-Quality)	No. Trials of Surgery *vs.* Nonsurgical Therapy With >100 Patients	Total No. Trials	Net Benefit*	Effective *vs.* Nonsurgical Therapy	Inconsistency†	Directness of Evidence	Overall Quality of Evidence	Comments
Lumbar interbody fusion	Nonradicular low back pain with common degenerative changes	4 (4)	2	18	Small to moderate *vs.* standard physical therapy supplemented by other nonsurgical therapies, no benefit *vs.* intensive rehabilitation	Yes *vs.* standard physical therapy (1 trial), no *vs.* intensive rehabilitation (3 trials)	Some inconsistency (see comments)	Direct	Fair	Inconsistency between trials may be related to use of different comparator interventions
Artificial disc replacement	Nonradicular low back pain with single-level degenerative disc disease	2 (1)‡	2‡	2	No difference *vs.* fusion	No trials	No	Direct	Fair	One trial of the Prodisc II and one trial of the CHARITÉ Artificial Disc
Standard open discectomy or microdiscectomy	Lumbar disc prolapse with radiculopathy	4 (4)	3	35	Moderate	Yes (4 trials)	No	Direct	Good	Benefits associated with surgery diminish or no longer present after 3 mo follow-up
Laminectomy (with or without fusion)	Spinal stenosis with or without degenerative spondylolisthesis	4 (4)	2	17	Moderate	Yes (4 trials)	No	Direct	Good	Benefits associated with surgery present through 1 to 2 yr follow-up
Interspinous spacer device	One- or 2-level spinal stenosis with symptoms relieved by forward flexion	2 (1)	1	2	Moderate to substantial (pain relief) slight to moderate (function)	Yes (2 trials)	No	Direct	Fair	Two trials of the X STOP interspinous spacer device

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Standard open discectomy or micro-discectomy	Lumbar disc prolapse with radiculopathy	4 (4)	3	35	Moderate	Yes (4 trials)	No	Direct	Good	Benefits associated with surgery diminish or no longer present after 3 mo follow-up

Moderate benefit defined as10 to 20 points on a VAS for pain, 2–5 points on the RDQ, 10 to 20 points on the ODI, or a SMD of 0.5 to 0.8.

Benefits associated surgery diminish or no longer present after 3 months follow up

Syntheses

出處：

Key word: Surgery, low back pain

Search Results

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Review

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Shona Charlton, Allan M Cyna, Philippa Middleton, James D Griffiths
December 2010
Review

☐ Sub-Tenon's anaesthesia versus topical anaesthesia for cataract surgery
Marc Davison, Sara Padroni, Catey Bunce, Heinrich Rüschen
June 2010
Review

☐ Spinal cord stimulation for chronic pain
Angela Mailis-Gagnon, Andrea D Furlan, MD PhD, Juan Alberto Sandoval, Rod S Taylor
January 2009
Review

☐ Single or double-level anterior interbody fusion techniques for cervical degenerative disc disease
Wilco Jacobs, Paul C Willems, Jacques van Limbeek, Ronald Bartels, Paul Pavlov, Patricia G Anderson, F Cumhur Oner
March 2011
Review

☐ Surgical interventions for lumbar disc prolapse
JN Alastair Gibson, Gordon Waddell
October 2008
Review

☐ Incision and drainage of perianal abscess with or without treatment of anal fistula
Ali Irqam Malik, Richard L Nelson, Samson Tou

[Intervention Review]

Surgical interventions for lumbar disc prolapse

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ABSTRACT

Background

Disc prolapse accounts for five percent of low-back disorders but is one of the most common reasons for surgery.

Objectives

The objective of this review was to assess the effects of surgical interventions for the treatment of lumbar disc prolapse.

Search methods

We searched the Cochrane Central Register of Controlled Trials, MEDLINE, PubMed, Spine and abstracts of the main spine society meetings within the last five years. We also checked the reference lists of each retrieved articles and corresponded with experts. All data found up to 1 January 2007 are included.

Selection criteria

Randomized trials (RCT) and quasi-randomized trials (QRCT) of the surgical management of lumbar disc prolapse.

Data collection and analysis

Two review authors assessed trial quality and extracted data from published papers. Additional information was sought from the authors if necessary.

Main results

Forty RCTs and two QRCTs were identified, including 17 new trials since the first edition of this review in 1999. Many of the early trials were of some form of chemonucleolysis, whereas the majority of the later studies either compared different techniques of discectomy or the use of some form of membrane to reduce epidural scarring.

Analysis 11.1. Comparison 11 DISCECTOMY V. CONSERVATIVE ± DISCECTOMY, Outcome 1 Poor/bad result at 1 yr - surgeon rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 11 DISCECTOMY V. CONSERVATIVE DISCECTOMY

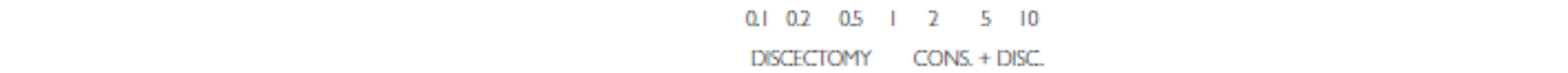
Outcome: 1 Poor/bad result at 1 yr - surgeon rated

Study or subgroup	DISCECTOMY n/N	CONSERVATIVE + DISC. n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Weber 1983	5/59	14/66		100.0 %	0.34 [0.12, 1.02]
Total (95% CI)	**59**	**66**		**100.0 %**	**0.34 [0.12, 1.02]**

Total events: 5 (DISCECTOMY), 14 (CONSERVATIVE + DISC.)

Heterogeneity: not applicable

Test for overall effect: Z = 1.92 (P = 0.055)



Analysis 11.2. Comparison 11 DISCECTOMY V. CONSERVATIVE ± DISCECTOMY, Outcome 2 Poor/bad result at 4 yrs - surgeon rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 11 DISCECTOMY V. CONSERVATIVE DISCECTOMY

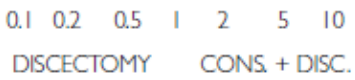
Outcome: 2 Poor/bad result at 4 yrs - surgeon rated

Study or subgroup	DISCECTOMY n/N	CONSERVATIVE + DISC. n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Weber 1983	8/56	8/66		100.0 %	1.21 [0.42, 3.46]
Total (95% CI)	**56**	**66**		**100.0 %**	**1.21 [0.42, 3.46]**

Total events: 8 (DISCECTOMY), 8 (CONSERVATIVE + DISC.)

Heterogeneity: not applicable

Test for overall effect: Z = 0.35 (P = 0.72)



Analysis 11.3. Comparison 11 DISCECTOMY V. CONSERVATIVE ± DISCECTOMY, Outcome 3 Poor/bad result at 10 yrs - surgeon rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 11 DISCECTOMY V. CONSERVATIVE DISCECTOMY

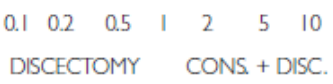
Outcome: 3 Poor/bad result at 10 yrs - surgeon rated

Study or subgroup	DISCECTOMY n/N	CONSERVATIVE + DISC. n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Weber 1983	4/55	4/66		100.0 %	1.22 [0.29, 5.10]
Total (95% CI)	**55**	**66**		**100.0 %**	**1.22 [0.29, 5.10]**

Total events: 4 (DISCECTOMY), 4 (CONSERVATIVE + DISC.)

Heterogeneity: not applicable

Test for overall effect: Z = 0.27 (P = 0.79)



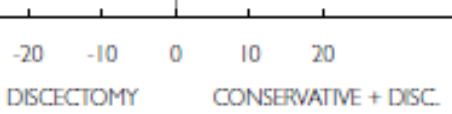
Analysis 11.4. Comparison 11 DISCECTOMY V. CONSERVATIVE ± DISCECTOMY, Outcome 4 Oswestry disability index.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 11 DISCECTOMY V. CONSERVATIVE DISCECTOMY

Outcome: 4 Oswestry disability index

Study or subgroup	DISCECTOMY N	Mean(SD)	CONSERVATIVE + DISC. N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 3 months							
Greenfield 2003	44	25.2 (18.4)	44	37.4 (18.4)		100.0 %	-12.20 [-19.89, -4.51]
Subtotal (95% CI)	**44**		**44**			**100.0 %**	**-12.20 [-19.89, -4.51]**
Heterogeneity: not applicable							
Test for overall effect: Z = 3.11 (P = 0.0019)							
2 12 months							
Greenfield 2003	44	17.9 (15)	44	28.5 (17.6)		100.0 %	-10.60 [-17.43, -3.77]
Subtotal (95% CI)	**44**		**44**			**100.0 %**	**-10.60 [-17.43, -3.77]**
Heterogeneity: not applicable							
Test for overall effect: Z = 3.04 (P = 0.0024)							
3 24 months							
Greenfield 2003	44	16.4 (16.9)	44	21.7 (19.1)		100.0 %	-5.30 [-12.84, 2.24]
Subtotal (95% CI)	**44**		**44**			**100.0 %**	**-5.30 [-12.84, 2.24]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.38 (P = 0.17)							



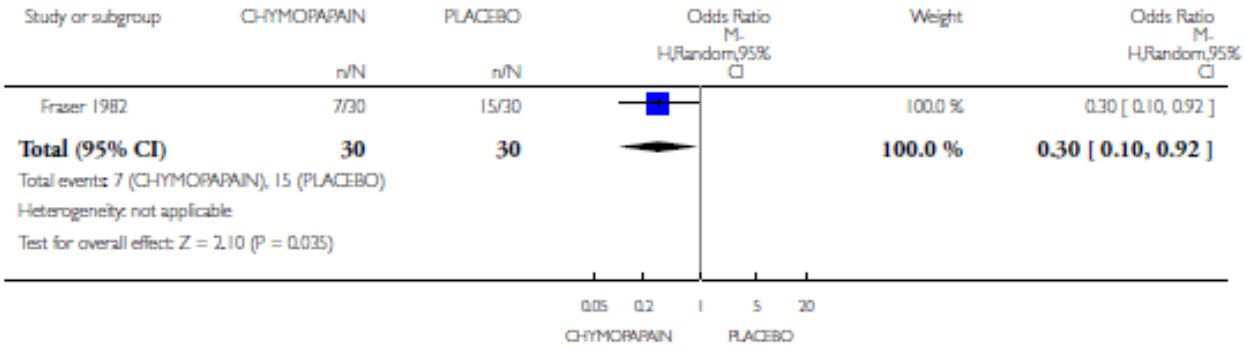
- We believe that this is an inaccurate interpretation of the results (See also Bessette 1996 for a critique of this trial).
- Weber (Weber 1983) actually reported on a subgroup of patients with uncertain indications for surgery:
- Total series of 280 patients
- 67 have definite indications for surgery,
- 87 patients improved with conservative management,
- Only the intermediate 126 were randomised in the trial.

Analysis 1.2. Comparison 1 CHYMOPAPAIN V. PLACEBO, Outcome 2 No success at 6 mths - patient rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 1 CHYMOPAPAIN V. PLACEBO

Outcome: 2 No success at 6 mths - patient rated



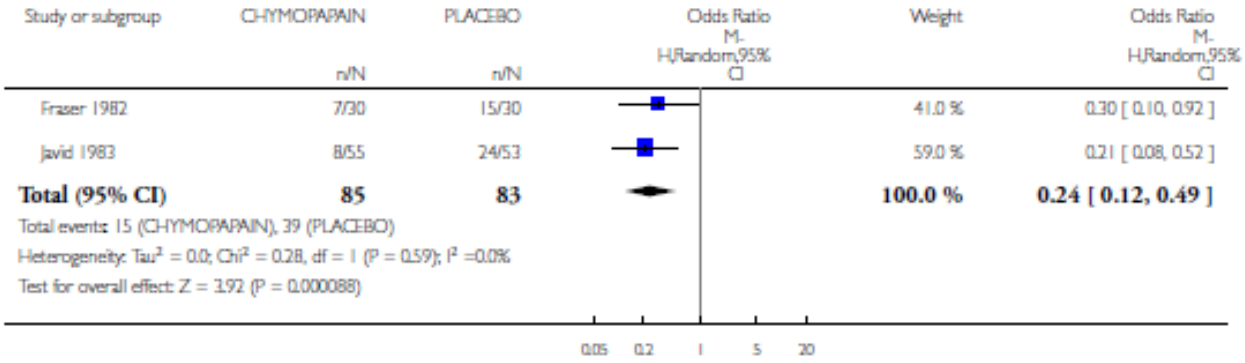
Chemonucelosis VS Placebo

Analysis 1.3. Comparison 1 CHYMOPAPAIN V. PLACEBO, Outcome 3 No success at 1 yr plus - patient rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 1 CHYMOPAPAIN V. PLACEBO

Outcome: 3 No success at 1 yr plus - patient rated



Analysis 1.4. Comparison 1 CHYMOPAPAIN V. PLACEBO, Outcome 4 No success at 2 yrs - patient rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 1 CHYMOPAPAIN V. PLACEBO

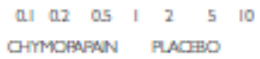
Outcome: 4 No success at 2 yrs - patient rated

Study or subgroup	CHYMOPAPAIN n/N	PLACEBO n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Fraser 1982	8/30	16/30		100.0 %	0.32 [0.11, 0.94]
Total (95% CI)	**30**	**30**		**100.0 %**	**0.32 [0.11, 0.94]**

Total events: 8 (CHYMOPAPAIN), 16 (PLACEBO)

Heterogeneity: not applicable

Test for overall effect: Z = 2.08 (P = 0.038)



Chemonucelosis VS Placebo

Analysis 1.5. Comparison 1 CHYMOPAPAIN V. PLACEBO, Outcome 5 No success at 10 yrs - patient rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 1 CHYMOPAPAIN V. PLACEBO

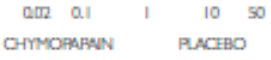
Outcome: 5 No success at 10 yrs - patient rated

Study or subgroup	CHYMOPAPAIN n/N	PLACEBO n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Fraser 1982	3/14	8/12		100.0 %	0.14 [0.02, 0.79]
Total (95% CI)	**14**	**12**		**100.0 %**	**0.14 [0.02, 0.79]**

Total events: 3 (CHYMOPAPAIN), 8 (PLACEBO)

Heterogeneity: not applicable

Test for overall effect: Z = 2.23 (P = 0.026)



Disckectomy VS chemonucelosis

Analysis 2.5. Comparison 2 DISCECTOMY V. CHYMOPAPAIN, Outcome 5 2nd procedure needed within 1 yr.

Review: Surgical Interventions for lumbar disc prolapse

Comparison: 2 DISCECTOMY V. CHYMOPAPAIN

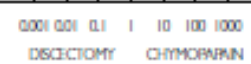
Outcome: 5 2nd procedure needed within 1 yr

Study or subgroup	DISCECTOMY n/N	CHYMOPAPAIN n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Crawshaw 1984	1/26	11/24		21.6 %	0.05 [0.01, 0.41]
Ejeskar 1983	0/14	8/15		11.3 %	0.03 [0.00, 0.60]
Muralikuttan 1992	1/46	9/46		22.5 %	0.09 [0.01, 0.75]
van Alphen 1989	2/78	18/73		44.5 %	0.08 [0.02, 0.36]
Total (95% CI)	**164**	**158**		**100.0 %**	**0.07 [0.02, 0.18]**

Total events: 4 (DISCECTOMY), 46 (CHYMOPAPAIN)

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.51$, df = 3 (P = 0.92); $I^2 = 0.0\%$

Test for overall effect: Z = 5.31 (P < 0.00001)



Analysis 2.6. Comparison 2 DISCECTOMY V. CHYMOPAPAIN, Outcome 6 2nd procedure needed within 2 yrs.

Review: Surgical Interventions for lumbar disc prolapse

Comparison: 2 DISCECTOMY V. CHYMOPAPAIN

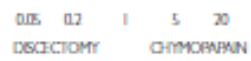
Outcome: 6 2nd procedure needed within 2 yrs

Study or subgroup	DISCECTOMY n/N	CHYMOPAPAIN n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Lavignolle 1987	4/182	19/176		100.0 %	0.19 [0.06, 0.56]
Total (95% CI)	**182**	**176**		**100.0 %**	**0.19 [0.06, 0.56]**

Total events: 4 (DISCECTOMY), 19 (CHYMOPAPAIN)

Heterogeneity: not applicable

Test for overall effect: Z = 3.00 (P = 0.0027)



Analysis 2.7. Comparison 2 DISCECTOMY V. CHYMOPAPAIN, Outcome 7 2nd procedure within 1-2 years.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 2 DISCECTOMY V. CHYMOPAPAIN

Outcome: 7 2nd procedure within 1-2 years

Study or subgroup	DISCECTOMY n/N	CHYMOPAPAIN n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Crawshaw 1984	1/26	11/24		11.8 %	0.05 [0.01, 0.41]
Ejeskar 1983	0/14	8/15		6.2 %	0.03 [0.00, 0.60]
Lavignolle 1987	4/182	19/176		45.4 %	0.19 [0.06, 0.56]
Muralikuttan 1992	1/46	9/46		12.3 %	0.09 [0.01, 0.75]
van Alphen 1989	2/78	18/73		24.3 %	0.08 [0.02, 0.36]
Total (95% CI)	**346**	**334**		**100.0 %**	**0.11 [0.05, 0.22]**

Total events: 8 (DISCECTOMY), 65 (CHYMOPAPAIN)

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 2.37$, df = 4 (P = 0.67); $I^2 = 0.0\%$

Test for overall effect: Z = 5.95 (P < 0.00001)

0.001 0.01 0.1 1 10 100 1000

DISCECTOMY CHYMOPAPAIN

Disckectomy VS chemonucelosis

Analysis 3.1. Comparison 3 DISCECTOMY V. CHYMOPAPAIN PLUS DISCECTOMY IF NECESSARY, Outcome 1 Unsatisfactory at 1 yr without second surgery - patient rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 3 DISCECTOMY V. CHYMOPAPAIN PLUS DISCECTOMY IF NECESSARY

Outcome: 1 Unsatisfactory at 1 yr without second surgery - patient rated

Study or subgroup	DISCECTOMY n/N	CHYO. + DISC. n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
van Alphen 1989	17/78	27/73		100.0 %	0.47 [0.23, 0.97]
Total (95% CI)	**78**	**73**		**100.0 %**	**0.47 [0.23, 0.97]**

Total events: 17 (DISCECTOMY), 27 (CHYO. + DISC.)

Heterogeneity: not applicable

Test for overall effect: Z = 2.03 (P = 0.042)

0.1 0.2 0.5 1 2 5 10

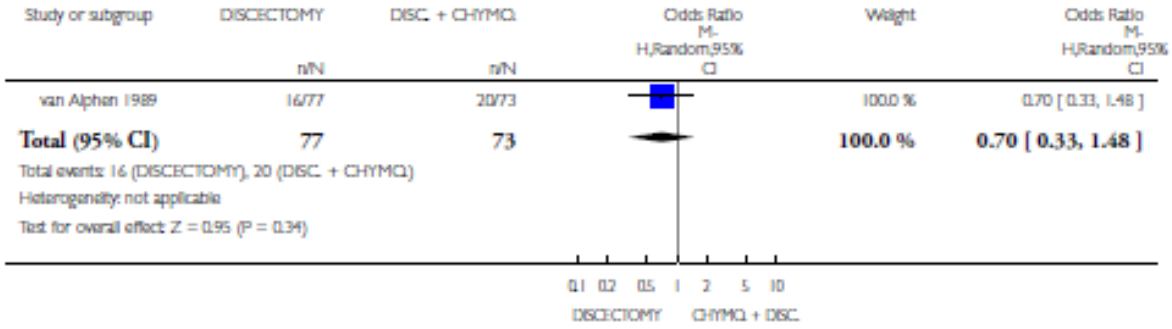
DISCECTOMY CHYMO. + DISC.

Analysis 3.2. Comparison 3 DISCECTOMY V. CHYMOPAPAIN PLUS DISCECTOMY IF NECESSARY, Outcome 2 Unsatisfactory at 1 year after all treatments - patient rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 3 DISCECTOMY V. CHYMOPAPAIN PLUS DISCECTOMY IF NECESSARY

Outcome: 2 Unsatisfactory at 1 year after all treatments - patient rated



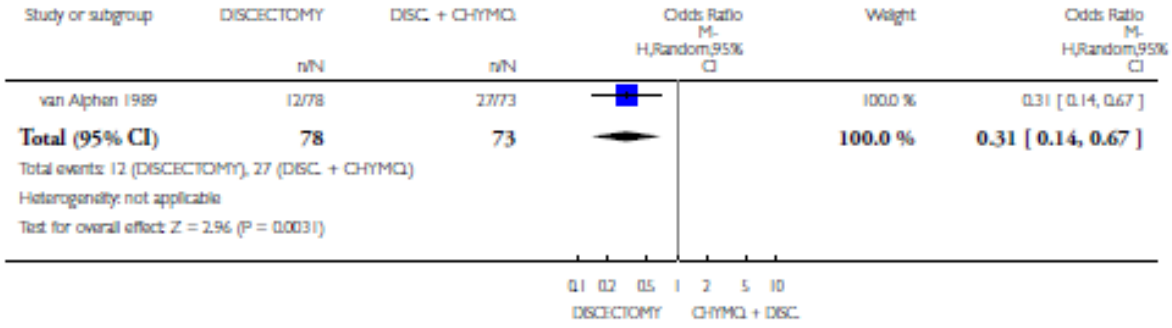
Disckectomy VS chemonucelosis

Analysis 3.3. Comparison 3 DISCECTOMY V. CHYMOPAPAIN PLUS DISCECTOMY IF NECESSARY, Outcome 3 Unsatisfactory at 1 year without second surgery - physician rated.

Review: Surgical interventions for lumbar disc prolapse

Comparison: 3 DISCECTOMY V. CHYMOPAPAIN PLUS DISCECTOMY IF NECESSARY

Outcome: 3 Unsatisfactory at 1 year without second surgery - physician rated



- There is strong evidence that discectomy is more effective than chemonucleolysis
- Chemonucleolysis is more effective than placebo
- Discectomy is more effective than placebo.

Appraisal (嚴格評讀）

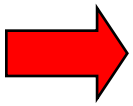
使用AAMPICOT model來評讀文獻

Item	Criteria for prognosis appraisal	Comments (評論並說明你的根據)
Answer	此文獻有沒有回答我的問題？	有
Authors	作者群是這領域的專家嗎？	是
	有沒有利益衝突？	沒有利益衝突(they have no conflict of interest)
Method	本文獻研究設計是屬於以下那一類SR,RCT,Cohort,Case-contro,Case series or report,Expert opinion	Systemic Review

Population	取樣是否爲隨機取樣？	是
	取的樣本是否具代表性？其特性是否接近我的病人？	是
	分組是否是隨機分組？	是
	分組是否採用盲法？	是
Intervention	給予實驗組的處置是否描述清楚，並且是臨床可行的？	是
Comparison	給予對照組的處置是否描述清楚，並且是臨床可行的？	是

Outcome	測量了那些結果？結果爲何？	•VAS(Visaual analog scale) •ODI(OSWESTRY Disibility Index)
	這些結果是否有臨床重要性？	是
	是否用客觀的方式測量？是什麼方法？	是
	做了那些去除bias的動作？	是
	是否呈現結果的「數值」，「p值」，「信賴區間」，「檢力」？	是(呈現數值和信賴區間)
Time	測量結果的時間點是否合宜？	是
	追蹤時間是否夠長？	是
	文獻發表時間？	2009.11

Grades of Recommendation



A	consistent level 1 studies
B	consistent level 2 or 3 studies or extrapolations from level 1 studies
C	level 4 studies or extrapolations from level 2 or 3 studies
D	level 5 evidence or troublingly inconsistent or inconclusive studies of any level

Apply
將EBM結果應用到病人身上

一、結合實證醫學的結果、臨床專業經驗給予病人建議以去學術化的語言給予病人建議

二、結合病人價值(生活品質、社會經濟脈絡)， 幫助病人做出最後的決定

醫療現況	病人意願
對於急性下背痛目前治療原則是先用藥物，若未能改善，即實施手術。	此病人願意接受手術治療
生活品質	社會脈絡
即早手術治療降低疼痛，可讓病人及早回到工作岡位，回復生活機能	醫者應充分告知接受治療的利與弊，讓病人做最適當的選擇

Audit
（自我評估）

在「提出臨床問題」方面的自我評估

- 我提出的問題是否具有臨床重要性？有，
- 我是否明確的陳述了我的問題？
  - 我的foreground question 是否可以清楚的寫成PICO？是
  - 我的background question是否包括what, when, how, who等字根？有
- 我是否清楚的知道自己問題的定位？（亦即可以定位自己的問題是屬於診斷上的、治療上的、預後上的或流行病學上的），並據以提出問題？知道(治療)
- 對於無法立刻回答的問題，我是否有任何方式將問題紀錄起來以備將來有空時再找答案？有

關於「嚴格評讀文獻」方面的自我評估

- 我是否盡全力做評讀了？是
- 我是否了解Number need to treat 的意義？是
- 我是否了解worksheet每一項的意義？是
- 評讀後，我是否做出了結論？是

關於「應用到病人身上」的自我評估

- 我是否將搜尋到的最佳證據應用到我的臨床工作中？是
- 我是否能將搜尋到的結論如NNT, LR用病人聽得懂的方式解釋給病人聽？可
- 當搜尋到的最佳證據與實際臨床作為不同時，我如何解釋？以實證醫學的結果來做解釋

效率評估

- 這篇報告，我總共花了多少時間？10 hours
- 我是否覺得這個進行實證醫學的過程是值得的？值得，對查詢EBM有概念多了。
- 我還有那些問題或建議？無

Thank you for your attention.

Thanks for your attention~~