Translating evidence into patient information

- challenges and possible solutions when extracting and presenting the results of Cochrane reviews

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www.backinfo.no

BackInfo's goal

- To develop patient information based on Cochrane reviews about the effects of back pain treatment

Objectives

To describe the challenges we encountered when extracting and presenting information from Cochrane reviews according to the principles of:

- relevance
- consistency
- ease of understanding

- To describe the implications of these challenges for review authors and review groups

Who we are

- International, multidisciplinary team of researchers and health care practitioners
- Norwegian Knowledge Centre for the Health Services/NbNCC
- Norwegian Back Pain Association
- The Cochrane Back Group

What did we do?

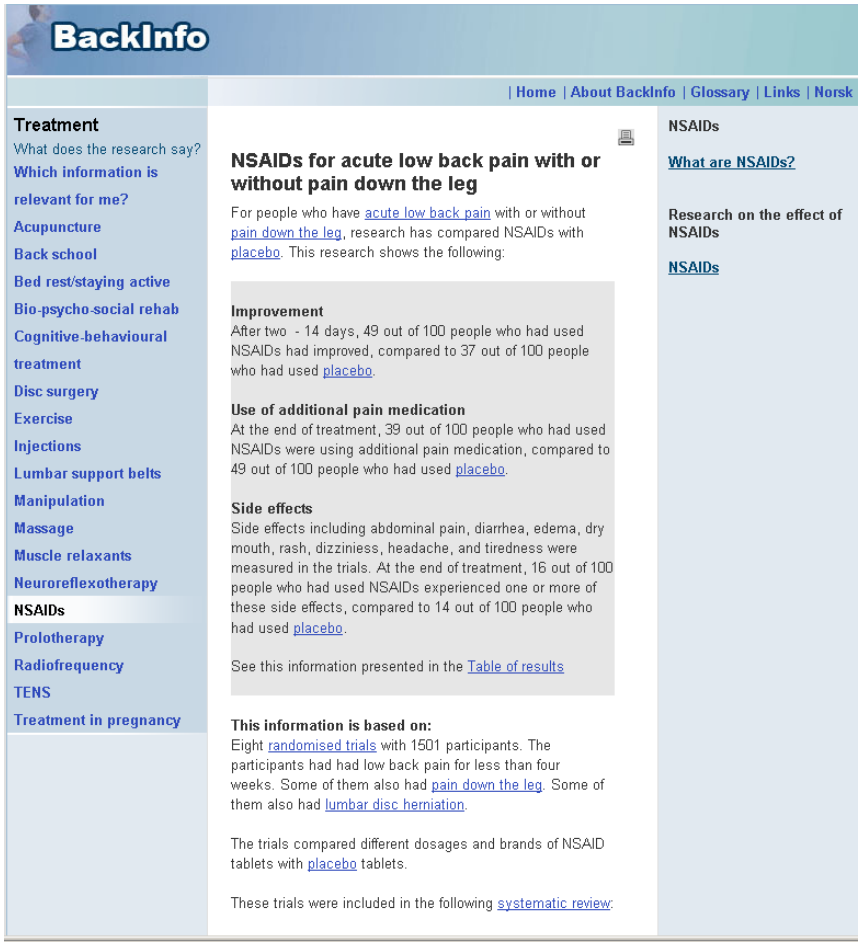
1. We extracted information from 18 Cochrane reviews
2. We evaluated the quality of the data using GRADE (a standardised approach to assessing quality of review data)
3. We used the GRADE evidence profiles to develop standardised information
4. We asked review authors and Norwegian clinicians to referee the information
5. We pilot tested the information among back pain sufferers

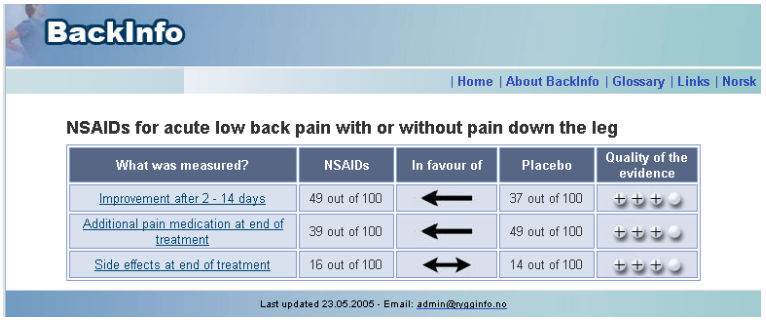
BackInfo's contents – treatment information

BackInfo presents information about 22 treatments for back pain

- What is the treatment?
- When is it used?
- What happens before, during, after treatment?
- Side effects

BackInfo's contents – effect of treatment





- Information in text and table
- Information provided about each outcome
- Glossary links

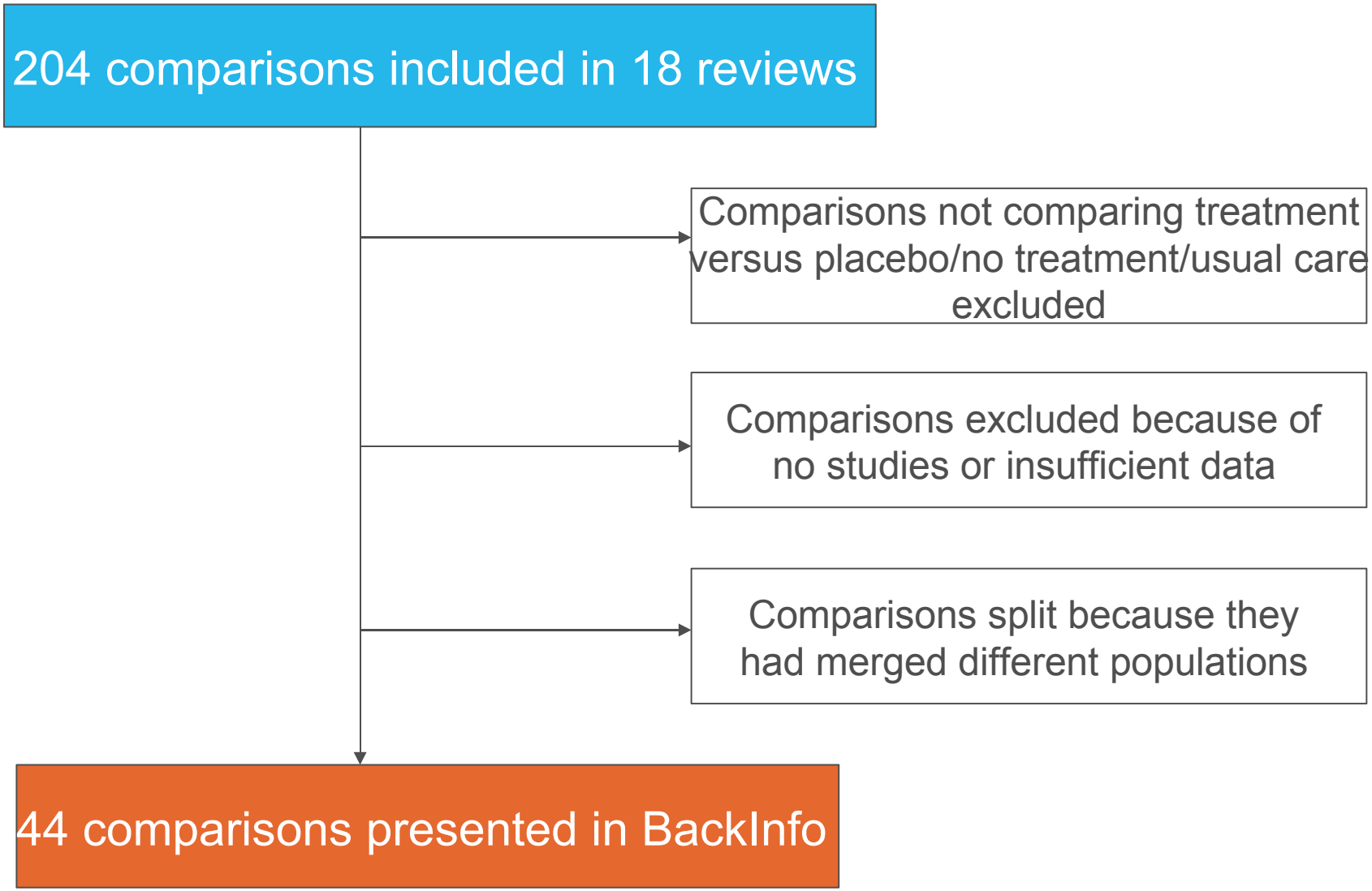
Main challenges

1. Large numbers of comparisons and outcomes

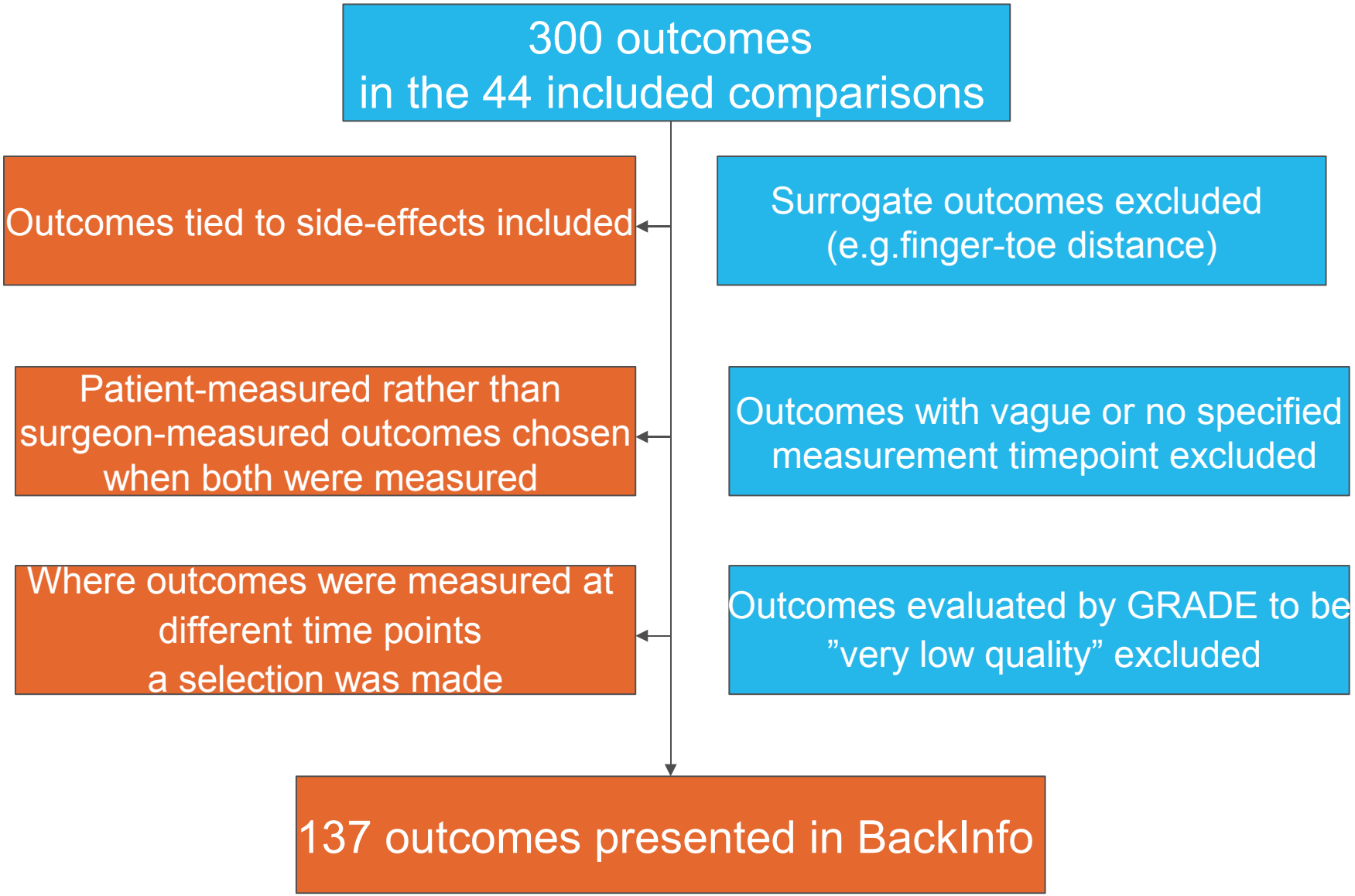
2. Variations in the manner in which effect was measured and presented

3. Missing information about side effects

1. Large amounts of data: Comparisons



1. Large amounts of data: Outcomes



2. Variations in the measurement and presentation of effect

The Cochrane reviews used:

Relative risk
Relative risk reduction
Qualitative presentations
Odds ratios
Weighted Mean Difference
Standard Mean Difference
Numbers Needed to Treat
Percentages

The evidence suggests that:

- Some presentation types bias treatment decisions (RRR)
- Qualitative presentations interpretated differently by different people
- Event rates are easier to understand than probabilities

How did we present effect – dichotomous outcomes

For dichotomous outcomes we translated results into proportions:

Cochrane:
"The pooled Relative Risk for global improvement after 2- 14 days was 0.79 (0.69, 0.91)"

BackInfo:
"After two -14 days, 49 out of 100 people who had used NSAIDs had improved, compared to 37 out of 100 people who had used placebo."

How did we present effect – continuous outcomes

For continuous outcomes (apart from days) we used standardised phrases.

Cochrane:
Studies showed small differences in functional status
[Weighted Mean Difference (on a 0-100 scale) 6.0 (95% CI: 1.5, 10.5)]
in favour of staying active compared to advice to stay in bed.

BackInfo:
"The people who were advised to stay active were, on average,
slightly more able to perform everyday activities
than the people who were advised to stay in bed."

NB! Qualitative presentations interpreted differently by different people.

Negative or positive framing?

Should we present the number of people that experienced a desired effect or that did not experience a desired effect? For instance:

- *Less than moderate sleep improvement/sleep improvement*
- *Pain/pain relief*

Cochrane reviews used both negative and positive framing for the same outcomes.

Implications:

- Negative framing led to misunderstandings among readers
- Difficult to compare outcomes when differently framed

Negative or positive framing?

BackInfo rules of thumb:

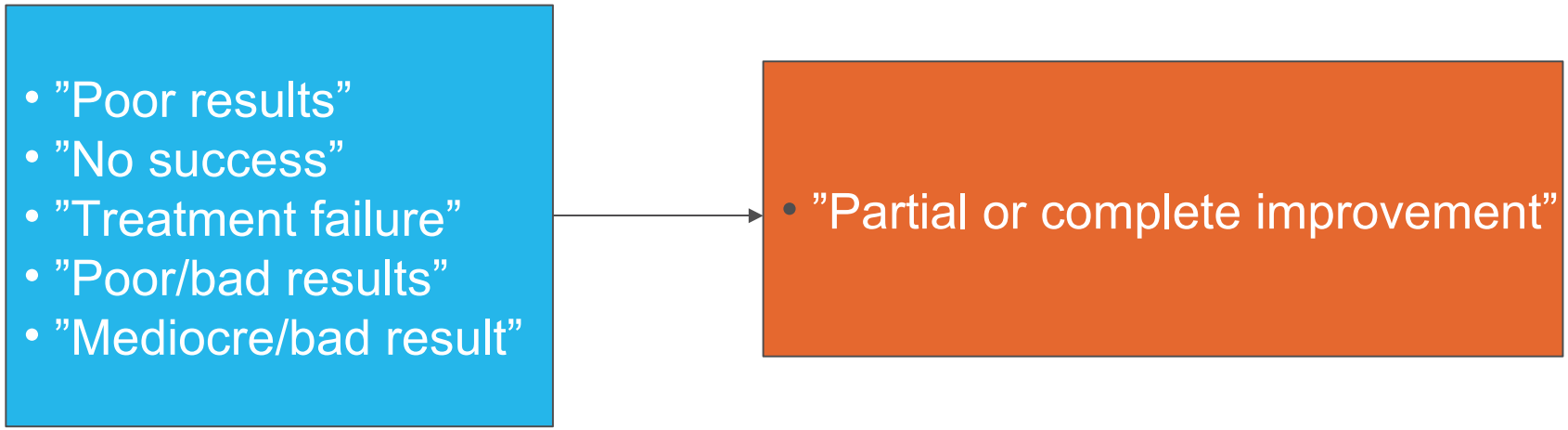
- Positive framing when the aim is to improve the patient's condition (for instance, pain and function)
- Negative framing when the aim is to avoid a worsening (for instance, side effects, relapses)

NB!

- Not always possible to turn results around without full insight into the scales used.

How were outcomes phrased in the reviews?

Cochrane: The same or similar outcomes phrased differently:



NB! Danger that the meaning is distorted, particularly if reviewers have already re-phrased outcomes.

3. Missing information about side effects

Cochrane reviews

- 6 out of 141 outcomes referred to side effects

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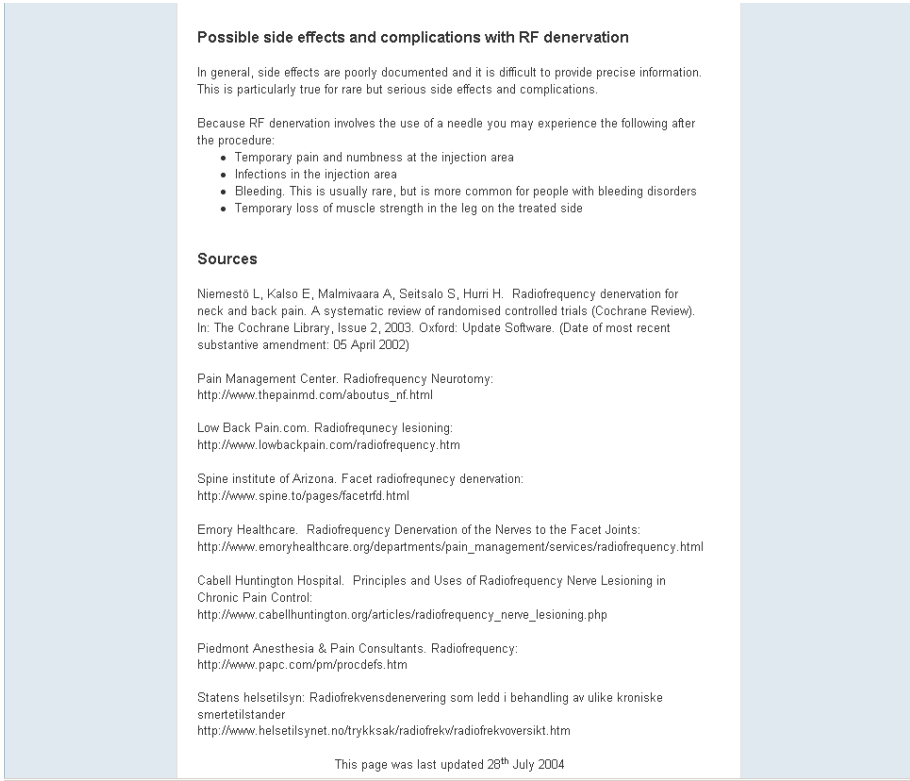
- Additional information about possible side effects were gathered from other sources, both evidence-based (Bandolier, Therapeutics Initative); and elsewhere.

NB! Time-consuming, harder to keep up-to-date, and possibly unreliable.



Possible side effects and complications with RF denervation

In general, side effects are poorly documented and it is difficult to provide precise information. This is particularly true for rare but serious side effects and complications.

Because RF denervation involves the use of a needle you may experience the following after the procedure:

- Temporary pain and numbness at the injection area
- Infections in the injection area
- Bleeding. This is usually rare, but is more common for people with bleeding disorders
- Temporary loss of muscle strength in the leg on the treated side

Sources

Niemestö L, Kalso E, Malmivaara A, Seitsalo S, Hurri H. Radiofrequency denervation for neck and back pain. A systematic review of randomised controlled trials (Cochrane Review). In: The Cochrane Library, Issue 2, 2003. Oxford: Update Software. (Date of most recent substantive amendment: 05 April 2002)

Pain Management Center. Radiofrequency Neurotomy:
http://www.thepainmd.com/aboutus_nf.html

Low Back Pain.com. Radiofrequnecy lesioning:
http://www.lowbackpain.com/radiofrequency.htm

Spine institute of Arizona. Facet radiofrequnecy denervation:
http://www.spine.to/pages/facetrfd.html

Emory Healthcare. Radiofrequency Denervation of the Nerves to the Facet Joints:
http://www.emoryhealthcare.org/departments/pain_management/services/radiofrequency.html

Cabell Huntington Hospital. Principles and Uses of Radiofrequency Nerve Lesioning in Chronic Pain Control:
http://www.cabellhuntington.org/articles/radiofrequency_nerve_lesioning.php

Piedmont Anesthesia & Pain Consultants. Radiofrequency:
http://www.papc.com/pm/procdefs.htm

Statens helsetilsyn: Radiofrekvensdenervering som ledd i behandling av ulike kroniske smertetilstander
http://www.helsetilsynet.no/trykksak/radiofrekv/radiofrekvoversikt.htm

This page was last updated 28th July 2004

Conclusions

We succeeded in:

- decreasing the information amount
- focusing on relevant information
- increasing comprehension

However, our methods may have led to some distortion of the original data

- Some of these problems could have been avoided if reviews had made other choices.

Recommendations

The Cochrane Collaboration could:

- develop methods for incorporating information about the likelihood of side effects
- give recommendations about the presentation of effect

Cochrane review groups could:

- standardise the framing of typical outcomes
- standardise which patient groups are merged
- agree upon standard outcomes for use across reviews

Cochrane reviewers could:

- be more critical to which outcomes are included
- increase background information about possible side effects