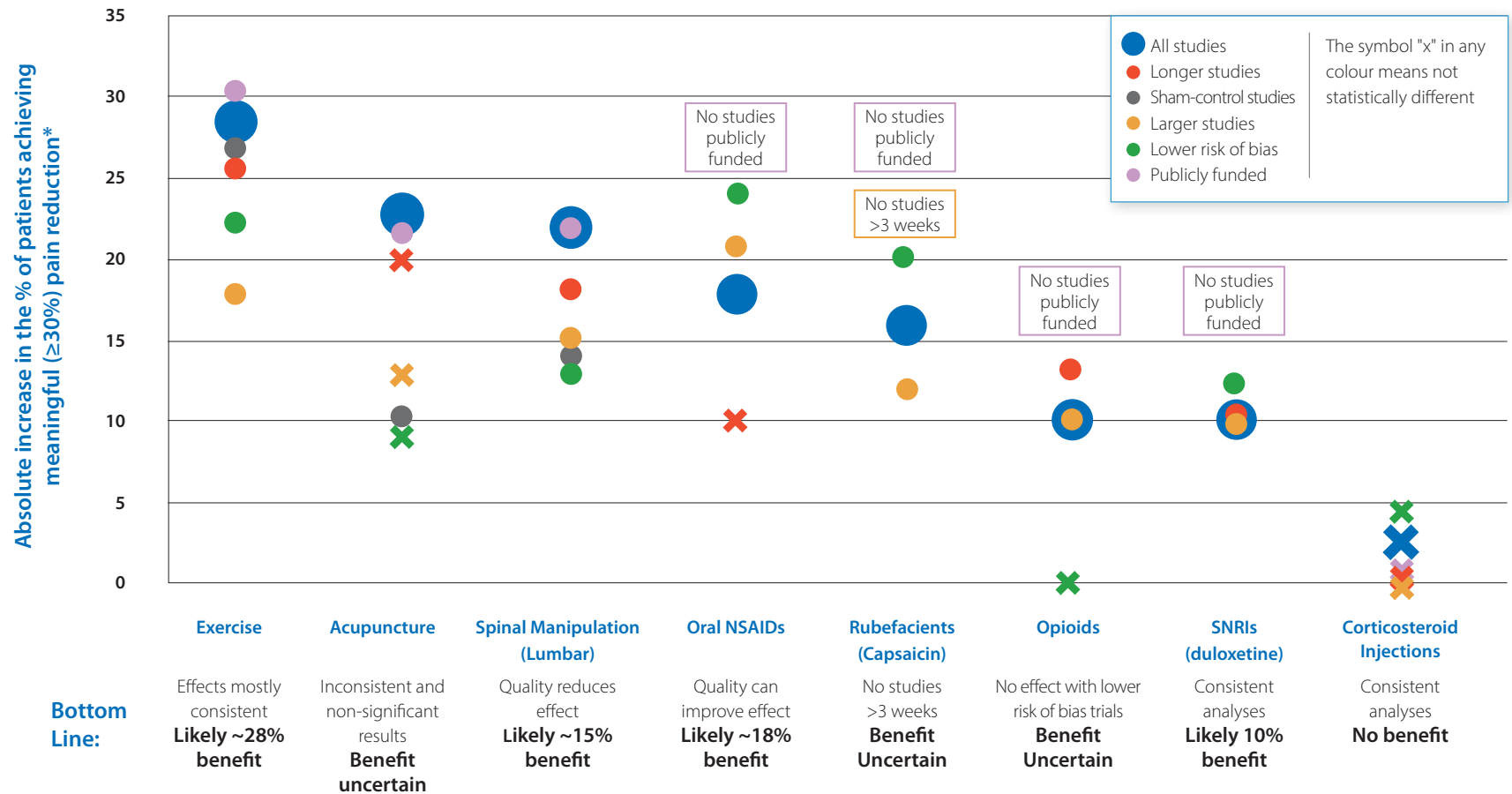


Figure 1 Impact of Study Quality on Treatment Effectiveness in Chronic Low Back Pain



\*Over control (assuming 40% of control have meaningful pain reduction)

Bottom Line:

Effects mostly consistent  
**Likely ~28% benefit**

Inconsistent and non-significant results  
**Benefit uncertain**

Quality reduces effect  
**Likely ~15% benefit**

Quality can improve effect  
**Likely ~18% benefit**

No studies >3 weeks  
**Benefit Uncertain**

No effect with lower risk of bias trials  
**Benefit Uncertain**

Consistent analyses  
**Likely 10% benefit**

Consistent analyses  
**No benefit**

Figure 2

# How many people will have their chronic back pain meaningfully improved (~30%) by different treatments?

## Exercise



## Oral NSAIDs



## Spinal Manipulation



## SNRIs (Duloxetine)



## Corticosteroid Injections



Legend:

- Green smiley face: Improve with treatment
- Orange smiley face: Improve with control
- Red smiley face: Do not improve

## Acupuncture\*



## Rubefaciants (Capsaicin)\*



## Opioids\*



**Inadequate responder data for:** acetaminophen, cannabinoids, muscle relaxants, anticonvulsants, tricyclic antidepressants, selective serotonin reuptake inhibitors, and topical NSAIDs.

\*Effect uncertain based on quality markers. To be reviewed by an upcoming guideline committee

Figure 3

# Treatment Options for Chronic Low Back Pain

| Benefits and Harms                                  | Treatment                    | Withdrawals Due to Adverse Events*    | Adverse Events (Examples)                                   | Cost               | Prescribing Comments   |
|---|------------------------------|---------------------------------------|---|--------------------|--|
| 😊<br>Benefits likely exceed harms                   | Exercise                     | Not reported                          | Mild muscle soreness, joint pain, injuries                  | \$ to \$\$\$\$     | Benefits consistent across trials. May provide continued pain relief beyond study period. Type of exercise likely doesn't matter.  |
|   | Spinal Manipulation (Lumbar) | Not reported                          | Unknown   | \$\$\$ to \$\$\$\$ | Degree of benefit is uncertain. Case reports have associated neck manipulation with stroke. <sup>2</sup>   |
| 😐<br>Benefits may not exceed harms in some patients | Oral NSAIDs                  | Similar to placebo                    | Gastrointestinal, renal, and cardiovascular adverse effects | \$ to \$\$         | Consider naproxen or ibuprofen. Diclofenac and COX-2 Inhibitors may increase cardiovascular disease risk. <sup>3</sup>   |
|   | SNRIs (Duloxetine)           | 18% for SNRI versus 9% for placebo    | Nausea, dizziness, somnolence                               | \$\$               | Most trials studied duloxetine 60 – 120mg once daily. The number of people who benefit over placebo (about 10%) is similar to the number who stop for adverse events (about 9%). |
| 😞<br>No benefit                                     | Corticosteroid Injections    | Not reported                          | Infection, post-dural puncture headache                     | \$\$               | Effects are not statistically different from placebo.  |
| 😞<br>Harms likely exceed benefits                   | Opioids                      | 27% for opioids versus 5% for placebo | Dependency, constipation, overdose, nausea, dizziness       | \$\$ to \$\$\$     | Lower risk of bias trials show no effect in chronic back pain but the risk of harm remains.  |
| 😐<br>Unclear benefits                               | Acupuncture                  | Similar to placebo                    | None consistently reported                                  | \$\$\$ to \$\$\$\$ | Efficacy of acupuncture disappears in trials >4 weeks and in higher quality studies.   |
|   | Rubefacients (Capsaicin)     | Not reported                          | Heat or burning sensation, mild or moderate local erythema  | \$ to \$\$         | The absence of trials that last longer than 3 weeks makes it difficult to extrapolate for a chronic condition.   |

Cost approximates dollars per month: \$ = <25, \$\$ = 25-50, \$\$\$ = 50-100, \$\$\$\$ = >100

**NSAIDs:** Non-Steroidal Anti-Inflammatory Drugs, **SNRI:** Serotonin Norepinephrine Reuptake Inhibitors

**Note:** Insufficient responder data for acetaminophen, muscle relaxants, selective serotonin reuptake inhibitors, cannabinoids, tricyclic antidepressants, anticonvulsants, and topical NSAIDs to judge whether or not they are effective.

\*Percents reported are statistically different from placebo