

Furlan AD, Imamura M, et al. Massage for low-back pain (Review). Cochrane Database of Systematic Reviews 2008 Issue 4 Art. No. CD001929.

Design: Systematic review of controlled clinical trials

PICOS:

- **Patients:** Adults with nonspecific (not due to infection, tumor, osteoporosis, fracture, inflammation, or radicular syndrome) back pain between the 12th rib and inferior gluteal fold
- **Interventions:** Massage (soft-tissue manipulation using the hands or a mechanical device) to lumbar region or to whole body
 - o Four general categories of massage were described: relaxation massage, clinical massage, movement re-education, and energy work
- **Comparisons:** sham or placebo massage, other medical treatments, or no treatment
- **Outcomes:** pain, overall improvement, back-specific functional status, quality of life, and disability (activities of daily living, work absenteeism)
- **Study types:** Randomized clinical trials, quasi-randomized trials

Study search and selection:

- Databases included Cochrane Central Register of Controlled Trials, MEDLINE, CINAHL, EMBASE through 2008, HealthSTAR through 2006, hand search of reference lists in review articles and guidelines, and contact with experts in massage therapy and spine disorders
- Two authors assessed the risk of bias of each article, resolving disagreements through discussion or through discussion with a third author
 - o Risk of bias criteria included randomization, concealment of allocation; blinding of patient, provider, outcome assessor; description of dropouts, intention-to-treat analysis, similarity of groups at baseline, similar co-interventions, acceptable compliance in all groups, and similar timing of outcome assessment in all groups
 - o “Fatal flaws” were designated as dropout rates higher than 50% and clinically important baseline differences not accounted for in the analysis
- Levels of evidence were defined by study design, consistency of findings, directness (generalizability), precision of results, and risk of bias
- 13 trials (1596 participants) were included in the review; 7 were at high risk of bias and 6 at low risk of bias, but none had fatal flaws

Results:

- There were several massage techniques (acupressure, traditional Thai massage, Swedish massage, foot reflexology) and diverse control interventions; some studies compared massage to inert treatment, some compared massage to other active treatments, some studied the addition of massage to other therapies, and some compared two different types of massage

- The diversity of massage types and control comparisons limited the ability of the authors to pool effect sizes in a meta-analysis; most comparisons used only one study, and no comparison used more than 2 studies
- For the comparison of massage vs. sham treatment, using 2 studies (from different authors), the pooled standardized mean difference was 0.92 standard deviations in favor of massage (greater than 0.8 SD is considered a large effect) for short-term pain relief; for short-term functional status, the pooled SD was 1.76 in favor of massage
- For acupuncture vs. physical therapy, the pooled SD from 2 studies (by the same author) was 0.72 in favor of acupuncture for short-term pain intensity
- Other comparisons of massage with active treatment used single studies only; these comparisons were numerous (about 29 in all), and none showed a statistical disadvantage for massage compared with control
- Foot reflexology was not more beneficial when added to usual care than was usual care alone

Authors' conclusions:

- Massage may be beneficial for patients with subacute and chronic low back pain, especially if combined with exercise and delivered by a licensed therapist
- Massage is a global treatment and its effects are difficult to measure because of various confounding variables, such as the size of the massage area, the amount of pressure, and different types of maneuvers, duration, and number of treatment sessions

Comments:

- Many difficulties with judging the evidence for massage are acknowledged by the authors; the diversity of massage techniques and comparison treatments precluded doing a credible meta-analysis
- The authors have applied the GRADE approach to rating the quality of evidence, but some of the analyses do not appear to fit
 - o Most of the figures using the GRADE structure had only one study; in each figure, the column for "inconsistency" says that there is no serious inconsistency
 - o A rating for inconsistency can be meaningfully made only if there are several studies of the same issue; in the current context, the rating should have been "not applicable"
 - o In Figure 3, the criterion for "indirectness" is rated as "no serious indirectness;" the outcome for the study was pain intensity measured 5 minutes after the end of the massage
 - o This outcome is only remotely related to the outcomes that need to be considered for judging the effectiveness of massage, and should be rated as "serious indirectness"
- The comparison of massage to waiting list/usual care is easier than the comparison of massage to other active therapies, where the differences between treatment groups is expected to be smaller

- Figure 2 (Analysis 1.3) combines two studies of massage vs. sham treatment for back-specific functional status; although there is “no serious inconsistency” based on a statistical test for heterogeneity, the two interventions are markedly different
 - o Farasyn 2006 used a myofascial T-bar made of bronze (roptrotherapy), which appears not to be practiced significantly in the United States or Canada
 - o Preyde 2000 used hands-on massage and soft-tissue manipulation
 - o The statistical test for heterogeneity notwithstanding, the combination of the two studies does not provide a precise summary estimate of the effect of massage over sham treatment

Assessment: Adequate for some evidence that massage may be beneficial for low back pain, especially when combined with active exercise