Heymans MW, van Tulder ME et al. Back schools for non-specific low back pain. Cochrane Database of Systematic Reviews 2004;Issue 4, Article # CD000261.

Reviewed, no change to conclusions January 2017

Design: Systematic review of randomized clinical trials

PICOS:

- Patient population: patients age 16-70 with nonspecific low back pain
    - Defined as pain below scapulae and above cleft of buttocks, with no detectable specific cause such as infection, osteoporosis, fracture, tumor, or inflammatory process
    - Subacute pain lasted 12 weeks or less; chronic pain lasted longer than 12 weeks
- Intervention: Back school consisting of an educational and skills acquisition program, including exercises, in which all lessons are delivered to groups of participants and supervised by a paramedical therapist or medical specialist
    - Programs which did not include exercises were not considered to be back schools and were excluded
- Comparison intervention: Interventions which could be contrasted clearly with back school
    - For example, if the comparison was between multidisciplinary program with and without a back school, the study was included
    - If the comparison compared a multidisciplinary program which included a back school with a waiting list control, there was no clear contrast with a back school, and the study was not included
- Outcomes: Four principal primary outcomes were considered
    - Return to work (or days off work)
    - Pain (VAS)
    - Functional status (Oswestry or Roland-Morris)
    - Global measure of overall improvement (proportion of patients recovered, subjective improvement of symptoms)
    - Other outcomes, such as range of motion, straight leg raising, and muscle strength, were considered secondary outcomes because they may correlate poorly with the clinical status of the patient
- Study Types: Randomized controlled trials published in English, Dutch, French, and German

Study selection and evaluation:

- Databases included MEDLINE, EMBASE, and the Cochrane Library from inception until updated through November 2004
- Two authors independently selected the trials for inclusion, with consensus reached involving a third author in case of disagreement about inclusion
- Methodological quality was assessed through the published data when possible, but when certain criteria were unclear in the study, the authors of the study were contacted for additional information, with efforts made to find their current addresses
- Clinical relevance was assessed by five criteria:
    - Patients described in enough detail so that the readers could decide whether they were comparable to the patients seen by the readers in practice
    - Interventions clearly enough described so that the readers could provide the same for their patients
    - All clinically relevant outcomes were reported
    - The effect size was clinically important
    - The benefits outweigh the likely harms
- Methodological quality was assessed by the commonly used Cochrane Risk of Bias Tool, incorporating considerations of method of randomization, allocation concealment, attrition rates, blinding, intention-to-treat analysis, similarity at baseline, adequate length of follow-up, and compliance with treatment
- The studies were too heterogeneous to permit statistical pooling of effect sizes; the authors therefore decided against doing a meta-analysis, and summarized the evidence as
    - Strong: Generally consistent findings in multiple high quality RCTs
    - Moderate: Generally consistent findings in one high quality RCT plus one or more low quality RCTs, or by consistent findings multiple low quality RCTs
    - Limited or conflicting: Only one RCT (either high or low quality) or inconsistent findings in multiple RCTs
    - No evidence: No RCTs

Results:

- 19 studies with 3584 patients were included in the analysis
- The methodological quality was scored on a scale with 11 points; only 6 of the 19 studies were scored with 6 or more quality points (the cutoff for ‘high quality’)
    - Blinding was the most commonly missing quality criteria; there are 3 blinding criteria (of patient, observer, and provider) among the eleven possible points
- The clinical relevance (5 points) scores were generally low; no study scored 5 points, and only 4 studies scored 4 points
    - The description of the interventions, the clinical importance of the effect size, and the likely treatment benefits were not clear for most studies

- Results were analyzed separately for subacute and chronic back pain, and separately for other active treatments (such as exercises alone, manual therapy, spinal manipulation, myofascial therapy) and for "placebo" or waiting list treatments
- Short, intermediate, and long-term results were presented separately (but the *definitions* of short, intermediate, and long term are not in the document)
- Because of the generally poor quality of the included studies, there was no strong evidence of back schools for any outcome for any duration of back pain
- Most studies reported insufficient information about group size, means, and standard deviations; a quantitative summary of data was impossible
- Briefly, there was moderate evidence that back schools had better short and intermediate term effects than other treatments for recurrent and chronic LBP for pain and for functional status
- There was moderate evidence that back schools in an occupational setting are more effective than other treatments, placebo or waiting list controls, for pain, function, and return to work during short and intermediate term follow-up

Authors' conclusions:

- There is moderate evidence that back schools in an occupational setting seem to be more effective than other treatments for patients with recurrent and chronic LBP
    - The most promising interventions were modifications of the Swedish back school and were quite intensive (3 to 5 weeks in a specialized center)
- There is a need for high-quality RCTs of back schools to determine which kind of back school is most effective
- The effect of back schools is likely to be small; although pain is a commonly reported outcome, function is rarely reported on, and this needs to be remedied in future studies
- Most studies were conducted in Scandinavia and the generalizability to other health care settings may be limited
- There is insufficient information to comment on the cost-effectiveness of back schools

Comments:

- It may not be realistic to count blinding of participants and providers as a quality criterion, but the authors rightly lament the low quality of the body of literature on back schools
- The omission of a definition of short and long term effects is not typical of Cochrane Reviews, but the limitations of the available information concerning back schools makes this point less critical than it might otherwise be
- A 3 to 5 week stay in a specialized center may be impractical in settings outside Scandinavia, where the most intensive programs were conducted

- A 2011 study from Turkey (Sahin et al) appears to have been adequately randomized, but the effect sizes reported in that study are presented in terms of statistical significance, with clinical effect sizes too trivial to recommend
    - The study compared two programs, both of which had exercises and modalities such as ultrasound and TENS (control group, n=75), one of which had the control treatments plus back school (back school, n=75)
    - The VAS and Oswestry outcomes at 3 months improved in both groups
    - The authors report that there was a "statistically significant" reduction in scores in the back school compared to the control group, but the 3 month group difference for VAS was only 0.2 points, and the difference for Oswestry was only 0.8 points
    - This is a pattern noted by the authors of the systematic review; clinically important effect sizes are not adequately considered
    - Sahin et al 2011 therefore does not add new useful information to the previously available information
- The lack of quantitative information in the available literature places constraints on how clear the evidence is for back schools; the p values may be less than 0.05, but the size of the benefit may not be estimated
- "Moderate" evidence in the Cochrane scheme is approximately equivalent to "some" evidence for the DOWC guidelines

Assessment: The systematic review is of high quality, but the low quality of the studies means that the information is adequate for some evidence that there is modest benefit to be realized from adding a back school to other treatments such as NSAIDs, massage, TENS, and other physical therapy modalities

Reference:

Sahin N, Albayrak I, et al. Effectiveness of Back School for Treatment of Pain and Functional Disability in Patients With Chronic Low Back Pain: A Randomized Controlled Trial. J Rehabil Med 2011;43:224-229