Collected Scientific Research Relating to the Use of Osteopathy with Knee pain including iliotibial band (ITB) friction syndrome

Important:

1) Osteopathy involves helping people's own self-healing abilities to work better, rather that focussing primarily on particular conditions.

2) Each person is different, and osteopathy treats them differently.

Therefore people respond to osteopathic treatment in different ways. Treatments that work for one person cannot be guaranteed to work for another person in the same way. The fact that there is scientific research supporting a treatment in a group of people does not mean that it will always work in the same way (which is probably true of all research).

A number of things make research into osteopathy challenging. These include the two aspects of osteopathy mentioned above, and also the lack of major commercial interests to provide funding in expectation of financial returns. At the same time, there is an emerging body of research demonstrating the usefulness of osteopathic treatment.

More research is being done all of the time. I am not aware of any research which shows that osteopathic treatment, delivered by a qualified osteopath, is ineffective in relation to this area. If you are aware of any studies that show that, please bring them to my attention.

Please note: there is room for debate about the classifications used for these studies. Please let John Smartt know if you believe that any of these classifications are incorrect.

These studies are from peer-reviewed journals

Number of studies: 8

Clinically and statistically significant results

Number of studies: 6

Randomised controlled trials

Number of studies: 5

Hinman R 2014 **Manual physiotherapy or exercise leads to sustained reductions in pain and physical disability in people with hip and knee osteoarthritis.** J Physiother Mar;60(1):56 *http://www.ncbi.nlm.nih.gov/pubmed/24856943*

> "Design: Randomised, controlled trial with concealed allocation and blinded outcome assessment. Setting: Referrals from general practitioners in New Zealand. Participants: Patients were eligible if they met American College of Rheumatology clinical criteria for OA of the hip and knee. Randomisation of 206 participants allocated 54 to manual therapy, 51 to exercise therapy, 50 to combined exercise and manual therapy, and 51 to usual care. Interventions: All participants received usual care offered by their own doctor and other healthcare providers. In addition, the manual therapy group received manual procedures that aimed to modify the quality and range of motion of the affected joint and associated soft tissues; this was supplemented by home joint range-of-motion activities three times per week. The exercise group completed supervised aerobic, strengthening, stretching and neuromuscular coordination exercises, which were supplemented by home exercise three times per week. Combination therapy consisted of a combination of the manual therapy and exercise interventions."
> "At 1 year, compared with the usual care group, there was a reduction in WOMAC in the manual therapy group by 28.5 points (95% CI 9.2 to 47.8), exercise group by 16.4 (95% CI −3.23 to 35.9) and for combined therapy by 14.5 (95% CI −5.2 to 34.1). "

Seffinger MA 2014 **Manual Therapy or Exercise Effective for Hip or Knee Osteoarthritis** J Am Osteopath Assoc Vol. 114, 63 *http://jaoa.org/article.aspx?articleid=2094897&resultClick=1*

> "Researchers in New Zealand carried out a rigorous randomized controlled trial that evaluated the effectiveness of manual therapy and exercise in addition to usual care in alleviating symptoms and improving function in patients with hip or knee osteoarthritis (OA). "
> "The authors found that participants in the manual therapy group had significant (P<.03) and clinically important sustained improvements in symptoms at 1 year. Those in the exercise therapy group also had sustained benefit with respect to physical performance tests. No added benefit was found in the group who underwent both therapies. "

Pinto D, Robertson MC, Abbott JH, Hansen P, Campbell AJ; MOA Trial Team. 2013 **Manual therapy, exercise therapy, or both, in addition to usual care, for osteoarthritis of the hip or knee. 2: economic evaluation alongside a randomized controlled trial.** Osteoarthritis Cartilage Oct;21(10):1504-13 *http://www.ncbi.nlm.nih.gov/pubmed/23811491*

> "206 Adults who met the American College of Rheumatology criteria for hip or knee osteoarthritis were included in an economic evaluation from the perspectives of the New

Zealand health system and society alongside a randomized controlled trial. Resource use was collected using the Osteoarthritis Costs and Consequences Questionnaire. Quality-adjusted life years (QALYs) were calculated using the Short Form 6D. "
"From the societal perspective manual therapy was cost saving relative to usual care for most scenarios studied. Exercise therapy resulted in incremental cost utility ratios regarded as cost effective but was not cost saving. For most scenarios combined therapy was not as cost effective as the two therapies alone."
"In this study, exercise therapy and manual therapy were more cost effective than usual care at policy relevant values of willingness-to-pay from both the perspective of the health system and society. "

Ebert JR, Joss B, Jardine B, Wood DJ. 2013 **Randomized trial investigating the efficacy of manual lymphatic drainage to improve early outcome after total knee arthroplasty.** Arch Phys Med Rehabil Nov;94(11):2103-11 *http://www.ncbi.nlm.nih.gov/pubmed/23810354*

"To investigate the efficacy of manual lymphatic drainage (MLD) in the early postoperative period after total knee arthroplasty (TKA) to reduce edema and pain and improve knee range of motion."
"Prospective randomized controlled trial."
"A significant group effect was observed for active knee flexion, with post hoc tests demonstrating a significantly greater active knee flexion in the MLD group when compared with the control (no MLD) group at the final measure prior to hospital discharge (day 4 postsurgery) and at 6 weeks postsurgery. There were no further group effects observed for the remaining patient-reported and functional outcomes."
"MLD in the early postoperative stages after TKA appears to improve active knee flexion up to 6 weeks postsurgery, in addition to conventional care."

van den Dolder PA, Roberts DL 2006 **Six sessions of manual therapy increase knee flexion and improve activity in people with anterior knee pain: a randomised controlled trial.** Aust J Physiother 52(4):261-4 *http://www.ncbi.nlm.nih.gov/pubmed/17132120*

"Randomised controlled trial"
"Pain was measured using the Patellofemoral Pain Severity Questionnaire. Active knee flexion and extension was measured from photographs. Activity was measured by having the participants step up and down a 15 cm step, leading with the painful leg as many times as they could in a 60 second period. Measurements were taken before and after intervention by a blinded assessor."
"The experimental group decreased their pain by -8 mm (95% CI to 1 p =0.08) and pain on stairs by-10, (95% CI -22 to 2 p = 0.10) compared with the control group. They increased their active knee flexion by 10 deg (95% CI TO 16, p = 0.004) and and the number of steps in 60 seconds by 5 (95% CI 2 TO 8, p = 0.001) compared with the control group.
CONCLUSION:
Manual therapy is effective improving knee flexion and stair climbing i patients with anterior knee pain. There is a trend towards a small improvement in pain."

Case reports

Number of studies: 1

Pedowitz RN 2005 **Use of osteopathic manipulative treatment for iliotibial band friction syndrome.** J Am Osteopath Assoc Dec;105(12):563-7 *http://www.ncbi.nlm.nih.gov/pubmed/16424466*

> Iliotibial band friction syndrome (ITBFS) has long been recognized as one of the most common lower-extremity injuries in athletes, especially in long-distance runners. Conservative therapy, including rest, ice, heat, stretching, and the use of anti-inflammatory medications, has been effective in helping athletes return to full competition, but athletes still miss much time in their sports because of ITBFS. The author presents a case of a 30-year-old distance runner with ITBFS whose symptoms were reduced with the help of osteopathic manipulative treatment, specifically the counterstrain technique. This technique allows for relief of pain at a tender point by moving the affected body part into its position of greatest comfort, aiding in the reduction of proprioceptor activity. In the present case, the tender point was located from 0 to 3 cm (most commonly 2 cm) proximal to the lateral femoral epicondyle. There is no prior documentation of the osteopathic manipulation of this specific tender point. Thus, this case report reflects an initial identification of the distal iliotibial band tender point and a new therapeutic modality for ITBFS.

Mixed results (significant for some outcomes, not others)

Number of studies: 2

Randomised controlled trials

Number of studies: 2

Pichonnaz C, Bassin JP, Lécureux E, Christe G, Currat D, Aminian K, Jolles BM. 2016 **Effect of Manual Lymphatic Drainage After Total Knee Arthroplasty: A Randomized Controlled Trial.** Arch Phys Med Rehabil May;97(5):674-82 *https://www.ncbi.nlm.nih.gov/pubmed/26829760*

> "To evaluate the effects of manual lymphatic drainage (MLD) on knee swelling and the assumed consequences of swelling after total knee arthroplasty (TKA).
> DESIGN: Randomized controlled trial.
> SETTING: Primary care hospital.
> PARTICIPANTS: Two groups of 30 patients were randomized before TKA surgery (N=60; 65% women [39]; mean age, 70.7±8.8y; weight, 77.8±11.3kg; size, 1.64±0.08m; body mass index, 29.9±4.1kg/m(2)).
> INTERVENTIONS: Participants received either 5 MLD treatments or a placebo, added to rehabilitation, in between the second day and the seventh day after surgery.
> MAIN OUTCOME MEASURES: Swelling was measured by blinded evaluators before surgery and at second day, seventh day, and 3 months using bioimpedance spectroscopy and volume measurement. Secondary outcomes were active and passive range of motion, pain, knee function, and gait parameters.
> RESULTS: At seventh day and 3 months, no outcome was significantly different between groups, except for the knee passive flexion contracture at 3 months, which was lower and less frequent in the MLD group (-2.6°; 95% confidence interval, -5.0° to -0.21°; P=.04; absolute risk reduction, 26.6%; 95% confidence interval, 0.9%-52.3%; number needed to treat, 4). The mean pain level decreased between 5.8 and 8.2mm on the visual analog scale immediately after MLD, which was significant after 4 of 5 MLD treatments.
> CONCLUSIONS: MLD treatments applied immediately after TKA surgery did not reduce swelling. It reduced pain immediately after the treatment. Further studies should investigate whether the positive effect of MLD on knee extension is replicable"

Dwyer L, Parkin-Smith GF, Brantingham JW, Korporaal C, Cassa TK, Globe G, Bonnefin D, Tong

V 2015 **Manual and manipulative therapy in addition to rehabilitation for osteoarthritis of the knee: assessor-blind randomized pilot trial.** Journal of Manipulative and Physiological Therapeutics Jan;38(1):1-21 *http://www.ncbi.nlm.nih.gov/pubmed/25455832*

"The purpose of this study was to examine the methodological integrity, sample size requirements, and short-term preliminary clinical outcomes of manual and manipulative therapy (MMT) in addition to a rehabilitation program for symptomatic knee osteoarthritis (OA)."
"This was a pilot study of an assessor-blinded, randomized, parallel-group trial in 2 independent university-based outpatient clinics. Participants with knee OA were randomized to 3 groups: 6 MMT sessions alone, training in rehabilitation followed by a home rehabilitation program alone, or MMT plus the same rehabilitation program, respectively. "
"Statistically significant and clinically meaningful changes in scores from baseline to week 5 were found for all groups for the Western Ontario and McMasters Osteoarthritis Index ($P \leq .008$), with a greater change in scores for MMT and MMT plus rehabilitation. Between-group comparison did not reveal statistically significant differences between group scores at week 5 for any of the outcome measures ($P \geq .46$)."