

SportsMed Update

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In patients with patellar tendinopathy who undergo 12 weeks eccentric training, the addition of low intensity pulsed ultrasound treatment did not provide more pain relief or improve function further

Title: Low-intensity pulsed ultrasound for chronic patellar tendinopathy: a randomized, double-blind, placebo-controlled trial

Authors: Warden SJ, Metcalf BR, Kiss ZS, Cook JL, Purdam CR, Bennell KL

Reference: Rheumatology 2008; 47: 467-471

Type of study: Randomized, double-blind, placebo-controlled, clinical trial

Keywords: knee, injury, anterior knee pain, patellar tendon, Jumper's knee, tendonitis, tendinosis

EB Rating: 8/10

CI Rating: 7.5/10

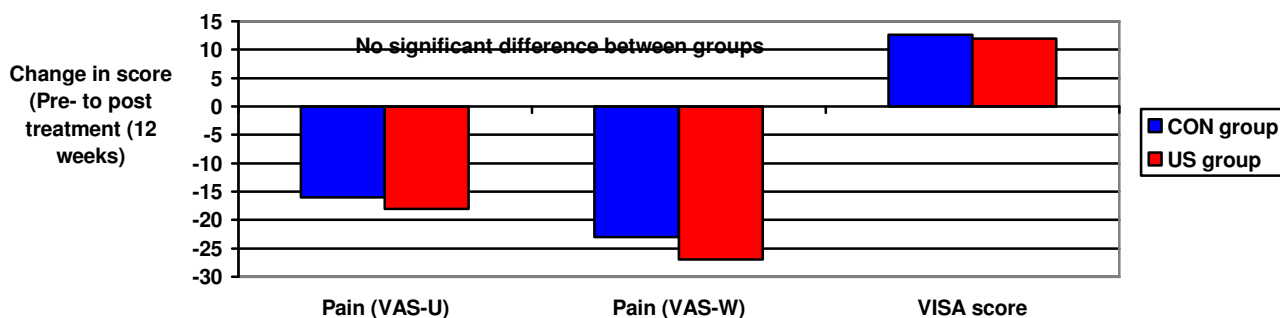
Background: The treatment of patellar tendinopathy is controversial and there are many proposed modalities – recently low-intensity pulsed ultrasound has also been used more frequently for the treatment of this condition

Research question/s: Does low intensity pulsed ultrasound decrease pain in patients with patellar tendinopathy?

Methodology:

- Subjects: 37 subjects with patellar tendinopathy (clinical and radiological diagnosis)
- Experimental procedure: All the subjects were assessed and then managed using a standardized eccentric exercise programme, based on best practice, for 12 weeks. In addition subjects were randomly assigned to receive either an active low intensity pulsed ultrasound treatment (US group=17, self administered, 20min/day, 7 days/week for the 12 weeks) or a placebo ultrasound (CON=20). All the subjects recorded their pain (preceding week - usual as well as worst pain)
- Measures of outcome: Pain (usual (VAS-U) and worst (VAS-W) tendon pain) during the most aggravating activity in the preceding week (VAS 100mm scale), VISA score (validated function score)

Main finding/s:



- There was a significant decrease in pain and an improvement in function in both groups over the treatment period

Conclusion/s:

- In patients with patellar tendinopathy who undergo 12 weeks eccentric training, the addition of low intensity pulsed ultrasound treatment did not provide more pain relief or improve function further

Methodological considerations:

Well conducted study, only pain and function were evaluated not other possible effects of treatment

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In a prospective cohort study in female youth soccer players, a history of previous injury and a reduced pre-season function were significant risk factors for new injuries to the same region during the following season

Title: Self-reported injury history and lower limb function as risk factors for injuries in female youth soccer

Authors: Steffen K, Myklebust G, Andersen TE, Holme I, Bahr R

Reference: Am J Sports Med 2008; 36(4): 700-708

Type of study: Prospective cohort study

Keywords: injury, soccer, youth, epidemiology, risk factors, lower limb, injury

EB Rating: 7/10

CI Rating: 8/10

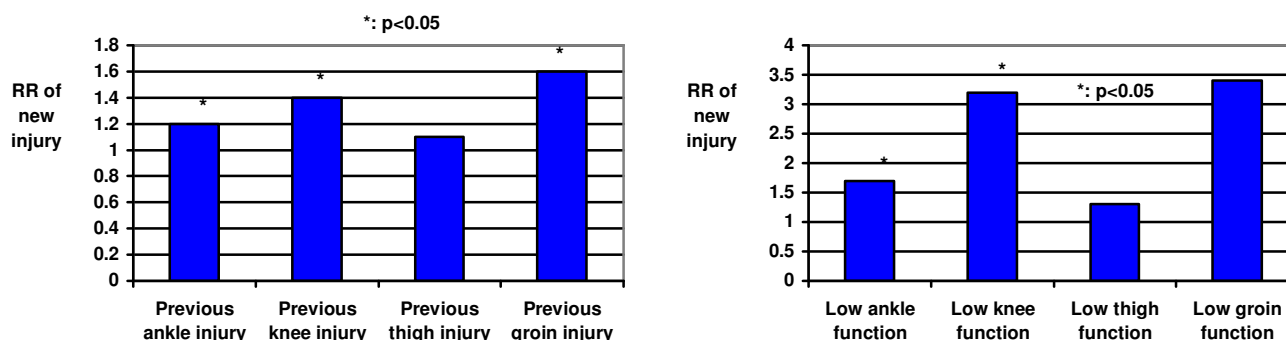
Background: Youth soccer teams frequently do not have health care members to monitor injuries, and risk factors for injuries are not well documented – the use of a questionnaire may be an alternative screening instrument

Research question/s: Does injury history and lower limb function, as assessed by a self-administered questionnaire, identify risk factors for injury in female youth soccer players?

Methodology:

- Subjects: 1430 female soccer players (aged 14-16 years) who were part of another intervention study
- Experimental procedure: All the subjects completed a detailed questionnaire with the following details: sports participation; history of previous injuries (ankle, knee, hamstring, or groin) and a functional score in each region (knee, foot and ankle, hamstring, groin) (validated in the knee and ankle). A low functional score was defined as score < 80%. All the subjects were then followed for an 8 month season, and all injuries were documented by physiotherapists.
- Main measures of outcome: Incidence of new injuries (% per season) and relative risk of new injury (RR)

Main finding/s:



- The sensitivity of previous injuries and lower limb function in predicting new injuries was low

Conclusion/s:

- In a prospective cohort study in female youth soccer players, a history of previous injury and a reduced pre-season function were significant risk factors for new injuries to the same region during the following season

Methodological considerations:

Well conducted study. 71% response rate to initial completion of the questionnaire, self-reported data

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In patients suffering from lateral epicondylopathy (“tennis” elbow), ultrasound guided injection with either a sclerosing agent (Polidocanol) or a local anesthetic (lidocaine and epinephrine) resulted in relief of pain and improved grip strength after 12 months

Title: Pain relief after intratendinous injections in patients with tennis elbow: results of a randomized study

Authors: Zeisig E, Fahlstrom M, Ohberg L, Alfredson H

Reference: Br J Sports Med 2008; 42: 267-271

Type of study: Randomized, double-blind, controlled, clinical trial

Keywords: elbow, injury, lateral epicondylopathy, tennis elbow, epicondylitis

EB Rating: 7/10

CI Rating: 7.5/10

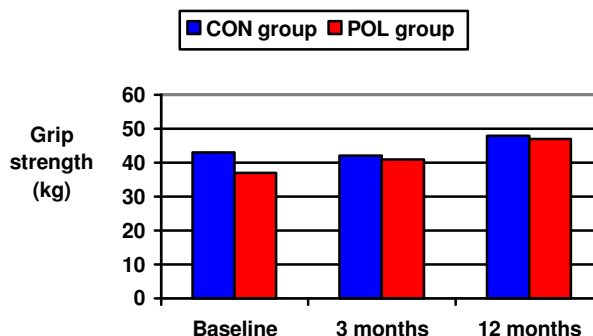
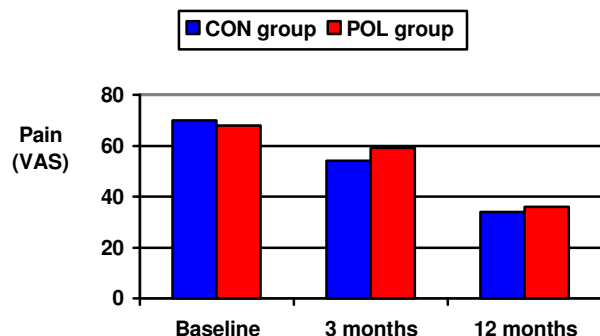
Background: There are many possible treatment modalities for the condition known as “tennis elbow” or lateral elbow epicondylopathy – in other anatomical areas sclerosing vessels using polidocanol has been successful

Research question/s: Do intratendinous injections with the sclerosing agent polidocanol and a local anaesthetic reduce pain and improve function in patients with “tennis” elbow?

Methodology:

- Subjects: 32 patients with clinically diagnosed chronic lateral epicondylopathy (36 elbows) (27-66 yrs) (male=16)
- Experimental procedure: All the patients were assessed and then randomized to receive either the sclerosing agent polidocanol (POL) or the local anesthetic (lidocaine plus epinephrine) (CON) under ultrasound or colour Doppler guidance. Subjects were followed at 3 months and then given the option to receive the sclerosing agent and again followed at 12 months. Patient satisfaction, pain during activity and maximum voluntary grip strength were assessed pre and post intervention.
- Measures of outcome: Patient satisfaction with treatment (Yes/No), elbow pain during activity (VAS), maximum voluntary grip strength

Main finding/s:



- There were no significant ($p < 0.05$) differences in the outcome measures between the two groups
- Pain (VAS) was significantly less in both groups (3-month and 12-months) while grip strength was significantly higher in both groups at 12-months

Conclusion/s:

- In patients suffering from lateral epicondylopathy (“tennis” elbow), ultrasound guided injection with either a sclerosing agent (Polidocanol) or a local anesthetic (lidocaine and epinephrine) resulted in relief of pain and improved grip strength after 12 months

Methodological considerations:

No control group of no injections, small sample size

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In a cross sectional study among pre-and peri-menopausal women, there was a modest inverse association between physical activity (in a variety of categories) and mammographic density

Title: Physical activity and mammographic density in a cohort of midlife women

Authors: Oestreicher N, Capra A, Bromberger J, Butler LM, Crandall CJ, Gold EB, Greendale GA, Modugno F, Sternfeld B, Habel LA

Reference: Med Sci Sports Exerc 2008; 40(3): 451-456

Type of study: Cross sectional study

Keywords: physical activity, breast cancer, mammographic density, parenchymal patterns

EB Rating: 6.5/10

CI Rating: 7/10

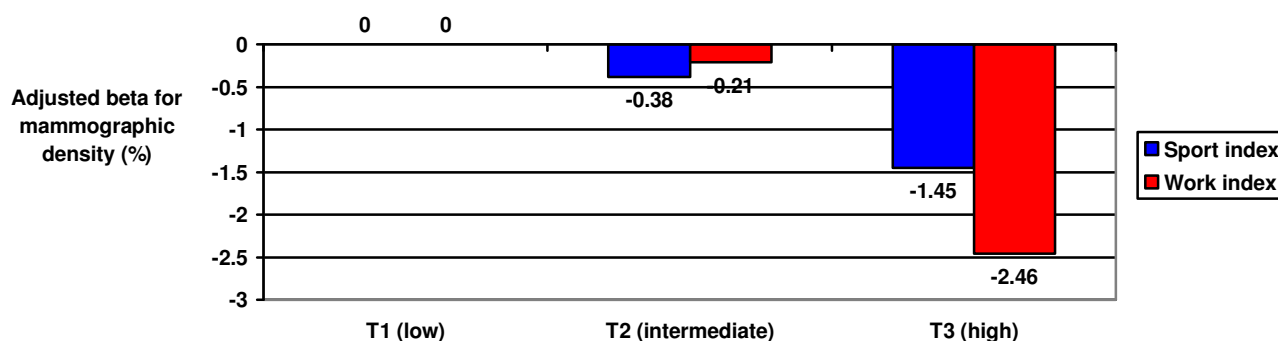
Background: High mammographic density is a risk factor for breast cancer while increased physical activity (PA) has been shown as a modifiable breast cancer risk factor – however, the relationship between physical activity and mammographic density has not been well studied

Research question/s: Is increased physical activity associated with reduced mammographic density?

Methodology:

- Subjects: 772 pre- and early perimenopausal women: non-Hispanic white (N = 373), African American (N = 55), Chinese (N = 178), and Japanese (N = 166) ethnicity
- Experimental procedure: Mammographic density and physical activity (Kaizer Physical Activity Survey) were obtained from all the subjects. Using multivariable linear regression, the association between recent physical activity (sports index, household/child care index, work index, active living index) and two measures of mammographic density (percent density and area of density) was determined
- Measures of outcome: Association between physical activity (4 indices) and mammographic density (% , area)

Main finding/s:



- There were non-significant inverse associations for % mammographic density and the highest versus the lowest category of each of the physical activity domains - after adjusting for race/ethnicity, menopausal status, parity, past use of hormones, body mass index, waist circumference and education

Conclusion/s:

- In a cross sectional study among pre-and peri-menopausal women, there was a modest inverse association between physical activity (in a variety of categories) and mammographic density

Methodological considerations:

Cross sectional study, no cause-effect can be determined, small sample in high physical activity groups, only recent physical activity was documented

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In a randomized trial, an expanded cardiac rehabilitation program did not result in additional improvements in biochemical markers and exercise capacity when compared with a conventional cardiac rehabilitation program

Title: Effects of an expanded cardiac rehabilitation programme in patients treated for an acute myocardial infarction or a coronary artery by-pass graft operation

Authors: Pluss CE, Karlsson MR, Wallen NH, Billing E, Held C

Reference: Clinical Rehabilitation 2008; 22: 306-318

Type of study: Randomized, controlled, clinical trial

Keywords: cardiac disease, rehabilitation, exercise, risk factor, intervention

EB Rating: 7.5/10

CI Rating: 8/10

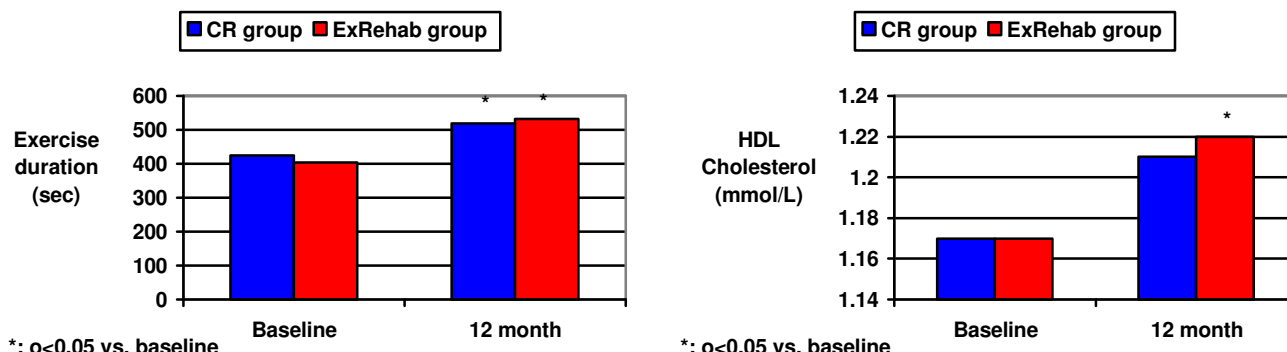
Background: Modern cardiac rehabilitation programs have expanded to incorporate a number of interventions

Research question/s: Does an expanded cardiac rehabilitation (multifactorial interventions) further improve metabolic and inflammatory markers, exercise performance and established cardiovascular risk factors compared with a conventional cardiac rehabilitation program?

Methodology:

- Subjects: 224 patients with acute myocardial infarction or coronary artery by-pass grafting
- Experimental procedure: All the subjects were assessed and then randomized to either a 3 month usual cardiac rehabilitation [CR=113, information counseling, heart school, outpatient clinic, and physical training (60min, 2/week for 3 months)], or an expanded cardiac rehabilitation program [ExRehab=111, usual care protocol and 5 day stay at a 'patient hotel', increased physical training, stress management (20X2hr sessions, cooking sessions)]. Biochemical risk markers and exercise performance was evaluated initially and at 12 months
- Measures of outcome: Biochemical risk markers, exercise performance

Main finding/s:



- There were significant improvements in total cholesterol, HDL (ExRehab only), LDL, Triglycerides, HBA1c, CRP, fibrinogen, and blood pressure in both the CR and the EXRehab groups after 12 months, but no significant differences between the CR and the ExRehab groups
- There were significant improvements in exercise capacity (total workload achieved, total exercise time, heart rate recovery, and resting heart rate) in both the CR and the EXRehab groups after 12 months, but no significant differences between the CR and the ExRehab groups

Conclusion/s:

- In a randomized trial, an expanded cardiac rehabilitation program did not result in additional improvements in biochemical markers and exercise capacity when compared with a conventional cardiac rehabilitation program

Methodological considerations:

Well conducted study, small sample size

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