

# SportsMedUpdate

## LONG TERM HIGH INTENSITY EXERCISE AND DAMAGE OF SMALL JOINTS IN RHEUMATOID ARTHRITIS

de Jong Z, Munneke M, Zwinderman AH, et al. *Ann Rheum Dis* 2004;63:1399-1405

### Background:

Little is known about the effects of exercise on radiological joint damage of the hands and feet in patients with rheumatoid arthritis.

### Research question/s:

Does long term high intensity weight bearing exercise cause radiological damage of the joints of the hands and feet in patients with rheumatoid arthritis (RA)?

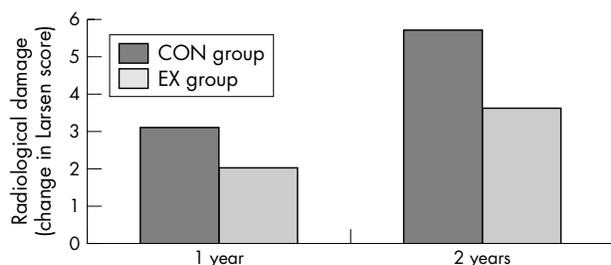
### Methodology:

**Subjects:** 281 subjects with RA according to the American College of Rheumatology (ACR) criteria.

**Experimental procedure:** All of the subject were part of a 2-year randomised controlled trial in which the effects of usual care physical therapy (CON=145) were compared with a high intensity weight bearing exercise programme (EX=136). The rate of radiological joint damage (Larsen score: 0-200, number of damaged joints) of the hands and feet, disease activity (DAS4 score), drug use, physical capacity, bone mineral density, and attendance rate was assessed at baseline, 6, 12, 24, 18, and 24 months).

**Measures of outcome:** Potential determinants of outcome were defined: disease activity, use of drugs, change in physical capacity and in bone mineral density, and attendance rate at exercise sessions.

### Main finding/s:



- Subjects in the EX group developed significantly less radiological damage than the subjects in the CON group, and this difference in rate of increase of damage is more pronounced in the joints of the feet than in the hands
- The rate of damage was independently associated with less disease activity, less frequent use of glucocorticoids, and with an improvement in aerobic fitness

### Conclusion/s:

Long term (2 years) high intensity weight bearing exercise does not increase the progression of radiological joint damage of the hands and feet in patients with RA – these exercises may have a protective effect on the joints of the feet.

**Evidence based rating:** 8/10 **Clinical interest rating:** 8/10

**Type of study:** Randomised controlled clinical trial

**Methodological considerations:** Well conducted study, possible selection bias

**Keywords:** rheumatoid arthritis, hands, fingers, exercise, high intensity, joint damage

## ACUPUNCTURE VERSUS PLACEBO FOR THE TREATMENT OF CHRONIC MECHANICAL NECK PAIN

White P, Lewith G, Prescott P, et al. *Ann Intern Med* 2004;141:911-9

### Background:

Chronic mechanical neck pain can be treated by conventional treatment including physiotherapy and medication. Recently complimentary and alternative treatments such as acupuncture have been advocated, but these have not been well studied.

### Research question/s:

Is acupuncture more effective than placebo treatment for chronic neck pain?

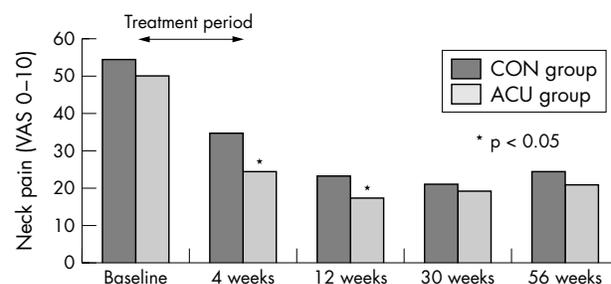
### Methodology:

**Subjects:** 135 subjects (18-80 years) with chronic mechanical neck pain.

**Experimental procedure:** Subjects were allocated to two groups for treatment over 4 weeks: acupuncture (eight treatments with acupuncture, ACU=63) or placebo (mock transcutaneous electrical stimulation of acupuncture points using a decommissioned electroacupuncture stimulation unit, CON=61), pain (measured on VAS), neck disability index (NDI), short form-36 (SF-36), and use of analgesic medications were measured before, at 8 weeks, 6 months, and 12 months after treatment. 124 subjects completed the primary end point.

**Measures of outcome:** Pain (VAS) 1 week after treatment, and at other time points, NDI score, SF-36 scores, analgesic medication use.

### Main finding/s:



- Pain: there was a significant decrease in pain over the 12 month period in both the CON and the ACU group with significant differences between group at 4 weeks and 12 weeks
- NDI score, SF-35 scores, and analgesic use: overall there were no significant differences between groups but there was a similar pattern over the 12 month period as the pain scores

### Conclusion/s:

In a randomised controlled clinical trial over 12 months in patients with chronic neck pain, 4 weeks of acupuncture initially reduced pain (up to 12 weeks) more than placebo, but after 12 months both groups had similar reductions in pain.

**Evidence based rating:** 7.5/10 **Clinical interest rating:** 7/10

**Type of study:** Randomised, single-blind, placebo-controlled, clinical trial

**Methodological considerations:** Well conducted study, single-blind trial

**Keywords:** chronic neck pain, treatment, acupuncture, clinical trial box

## EFFECTIVENESS OF ACUPUNCTURE AS ADJUNCTIVE THERAPY IN OSTEOARTHRITIS OF THE KNEE

Berman BM, Lao Lixing, Langenberg P, et al. *Ann Intern Med* 2004;141:901-10

### Background:

Evidence on the efficacy of acupuncture for reducing the pain and dysfunction of osteoarthritis is equivocal.

### Research question/s:

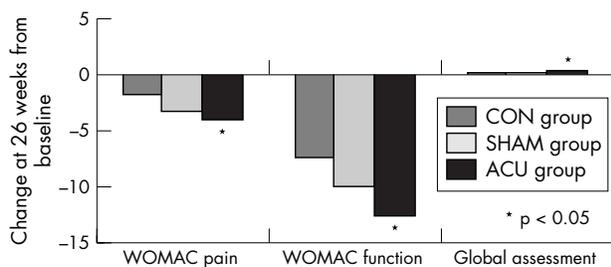
Does acupuncture provides greater pain relief and improved function compared with sham acupuncture or education in patients suffering from osteoarthritis of the knee joint?

### Methodology:

**Subjects:** 570 patients with osteoarthritis of the knee ( $65.5 \pm 8.4$  years).  
**Experimental procedure:** Subjects were randomised into: (1) an acupuncture (ACU) group (receiving 23 true acupuncture sessions over 26 weeks); (2) a 23 sham acupuncture (SHAM) group (sham sessions over 26 weeks); and (3) a control (CON) group (receiving six 2-hour education sessions over 12 weeks). Pain and function, as well as patient global assessment, 6-minute walk distance, and physical health scores of the 36-item short form health survey (SF-36) were measured before, and then at 8 and 26 weeks.

**Primary measures of outcome:** Pain and function scores (changes in the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)), global assessment score, 6-minute walk, SF-36 scores.

### Main finding/s:



- 8 weeks: there was a significantly greater improvement in WOMAC function scores in the ACU group compared with the SHAM group at 8 weeks ( $p=0.01$ ) but not in WOMAC pain score ( $p=0.18$ ) or the patient global assessment ( $p>0.2$ )
- 26 weeks: 43% of the subjects in the EDU group and 25% in each of the ACU and SHAM groups were not available for analysis. There was a significantly greater improvement in pain ( $p=0.01$ ), function ( $p=0.003$ ) and global assessment ( $p=0.02$ ) in the ACU compared with the SHAM group

### Conclusion/s:

Acupuncture treatment over 26 weeks (starting with eight treatments/month and gradually reducing to one/month) improves function and reduces pain in patients suffering from osteoarthritis of the knee.

**Evidence based rating:** 8/10 **Clinical interest rating:** 8/10

**Type of study:** Randomised, controlled, clinical trial

**Methodological considerations:** Well conducted study, dropout rates high

**Keywords:** knee, osteoarthritis, treatment, pain, acupuncture, complimentary medicine

## INTERCONDYLAR NOTCH STENOSIS IS NOT A RISK FACTOR FOR ANTERIOR CRUCIATE LIGAMENT TEARS IN PROFESSIONAL MALE BASKETBALL PLAYERS

Lombardo S, Sethi PM, Starkey C, *Am J Sports Med* 2005;33:29-34

### Background:

It has previously been suggested that the femoral notch size and the notch width index (NWI) may predict the risk of anterior cruciate ligament (ACL) injury.

### Research question/s:

Is there a relationship between the NWI and ACL injury in professional basketball players?

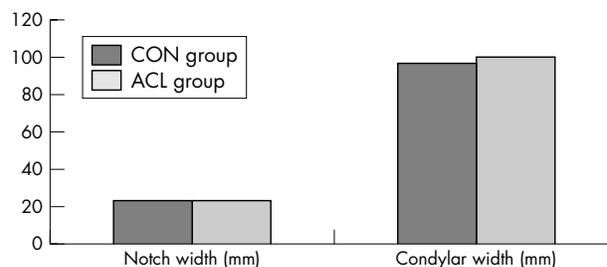
### Methodology:

**Subjects:** 615 male athletes who participated in the National Basketball Association's combine workouts (at least one game).

**Experimental procedure:** Notch view radiographs were obtained on all players and were used to measure the femoral notch and the condylar widths in all the subjects. The NWI was calculated. 305/615 players were followed up for 11 years, and were then divided into ACL-injured (ACL group=14, 4.6% of players) and a non-injured control group (CON).

**Measures of outcome:** Between group comparison of notch width (mm), condylar width (mm), and NWI.

### Main finding/s:



Mean NWI was  $0.235 \pm 0.031$  for the ACL group, and  $0.242 \pm 0.041$  for the CON group ( $p=0.534$ ), and only 2/51 players (3.9%) with critical notch stenosis (NWI = 0.20) had non-contact ACL injuries.

### Conclusion/s:

In a prospective cohort study in male basketball players, notch width, condylar width, and NWI were not associated with an increased risk of ACL injury, therefore a pre-participation notch view x ray as a predictor of ACL injury is not recommended.

**Evidence based rating:** 7.5/10 **Clinical interest rating:** 8.5/10

**Type of study:** Prospective cohort study with a case-control component

**Methodological considerations:** Well conducted study, limited to male elite athletes (affects generalisability of results to other populations)

**Keywords:** anterior cruciate ligament (ACL), basketball, notch width, notch index, risk, predictor