

# SportsMedUpdate

## SAGITTAL MOVEMENT OF THE MEDIAL LONGITUDINAL ARCH IS UNCHANGED IN PLANTAR FASCIITIS

Wearing SC, Smeathers JE, Yates B, *et al.* *Med Sci Sports Exerc* 2004;36:1761-7

### Background:

It has been suggested that a lowered medial longitudinal arch is a causal factor in the development of plantar fasciitis, but there is little evidence to support this hypothesis.

### Research question/s:

Does sagittal movement of the arch during gait differ in subjects with and without plantar fasciitis?

### Methodology:

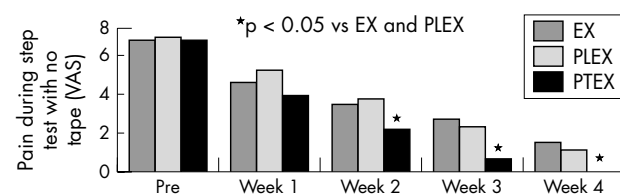
**Subjects:** 20 subjects: 10 subjects with unilateral plantar fasciitis (PF) and 10 matched controls (CON).

**Experimental procedure:** All of the subjects underwent walking at a self-selected speed during which digital fluoroscopy was used to acquire dynamic lateral radiographs from each subject by digitising and then recoding the respective maxima of (1) arch angle; and (2) first metatarsophalangeal joint (MTPJ) angle. Sagittal movement of the arch was defined as the angular change between heel strike and the maximum arch angle observed during the stance phase of gait. The thickness of the proximal plantar fascia was determined from sagittal sonograms of both feet.

**Measures of outcome:** Arch angle (maximum and movement) and MTPJ angle, plantar fascia thickness

### Main finding/s:

- Arch angle: there was no significant difference in either the movement or maximum arch angle between limbs
- MTPJ angle: subjects in the PF group had larger MTPJ angle compared with CON subjects ( $p < 0.05$ )
- There was a significant correlation ( $p < 0.05$ ) between fascial thickness and peak arch and metatarsophalangeal joint angles ( $p < 0.05$ ) in the symptomatic limb



### Conclusion/s:

- Patients with chronic plantar fasciitis do not have an abnormal shape or greater movement of the medial longitudinal arch during walking
- Arch mechanics may influence the severity of plantar fasciitis, once the condition is present
- Digital flexion, in contrast, has a protective role in what might be a bilateral disease process

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

**Type of study:** Case control study

**Methodological considerations:** Well conducted study, no cause effect can be demonstrated, two dimensional analysis

**Keywords:** biomechanics, fluoroscopy, foot arch, heel spur, ultrasound

## EFFECTS OF TAPING ON PAIN AND FUNCTION IN PATELLOFEMORAL PAIN SYNDROME: A RANDOMISED CONTROLLED TRIAL

Whittingham M, Palmer S, Macmillan F. *J Orthop Sports Phys Ther* 2004;34:504-10

### Background:

Two common treatments for patellofemoral pain syndrome are patella taping and muscle strengthening exercises.

### Research question/s:

Does daily patella taping and exercise reduce pain and improve function in individuals with patellofemoral pain syndrome?

### Methodology:

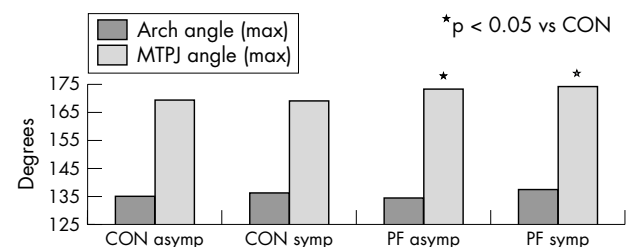
**Subjects:** Thirty subjects (24 male, six female) (mean age 18.7 years) with patellofemoral pain syndrome.

**Experimental procedure:** All of the subjects were randomly allocated to one of three treatment groups: Patella taping combined with a standardised exercise programme (PTEX), placebo patella taping and exercise programme (PLEX), or exercise programme alone (EX) (10 in each group). Taping was applied and exercises were performed on a daily basis for 4 weeks. Pain (VAS) and functional index questionnaires were recorded at weekly intervals by a therapist who was blinded to group allocation.

**Measures of outcome:** Pain (24 hour, step test), function.

### Main finding/s:

There were better pain and function scores following treatment in the PTEX group, compared with the PLEX and the EX group, but no significant differences between the PLEX and the EX groups at any time point.



### Conclusion/s:

- A combination of daily patella taping and exercises over 4 weeks successfully improved pain and function in individuals with patellofemoral pain syndrome
- The combination of patella taping and exercise was superior to the use of exercise alone

**Evidence based rating:** 7.5/10 **Clinical interest rating:** 8/10

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

**Methodological considerations:** Small sample size in each group, short-term follow up, military recruits—that could attend all sessions

**Keywords:** knee, patella, patellofemoral pain, syndrome, taping

## WALKING AND DEMENTIA IN PHYSICALLY CAPABLE ELDERLY MEN

Abbott RD, White LR, Ross GW, *et al.* JAMA 2004;292:1447–53

### Background:

Increased physical activity is associated with reduced clinical expression of dementia, but whether this includes low intensity activity such as walking is not known.

### Research question/s:

Does regular walking reduce the risk of dementia in older men?

### Methodology:

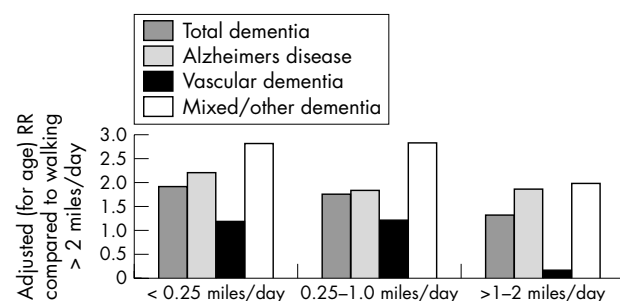
**Subjects:** 2257 physically capable men (ages 71–93 years) (part of the Honolulu-Asia Aging Study)

**Experimental procedure:** The daily walking distance walked was assessed in the subjects over 2 years (1991–1993). Subjects were then followed up for the development of dementia (overall dementia, Alzheimer disease, and vascular dementia) (based on neurological assessment at two repeat examinations in 1994–1996 and in 1997–1999). In this period 158 cases of dementia were identified (15.6/1000 person-years).

**Measures of outcome:** Walking distance (miles/day) was related to the development of dementia.

### Main finding/s:

- Men who walked the least (<0.25 miles/day) experienced a 1.8-fold increased risk of dementia compared with those who walked >2 miles/day (17.8 vs 10.3/1000 person-years)
- An excess risk of dementia was also observed in those who walked 0.25–1 miles/day (17.6 vs 10.3/1000 person-years; RH, 1.71; 95% CI 1.02 to 2.86) compared to those who walked the most (>2 miles/day)
- These associations persisted after accounting for other factors, including the possibility that limited amounts of walking could be the result of a decline in physical function due to preclinical dementia



### Conclusion/s:

- Regular walking in elderly men (>2 miles/day) is associated with a reduced risk of dementia
- Promoting active lifestyles in physically capable men could help late-life cognitive function

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

**Type of study:** Prospective cohort study

**Methodological considerations:** Observational study, no females included

**Keywords:** dementia, elderly, men, physical activity, risk, walking

## PREDICTORS OF EXERCISE BEHAVIOUR IN PATIENTS WITH RHEUMATOID ARTHRITIS 6 MONTHS FOLLOWING A VISIT WITH THEIR RHEUMATOLOGIST

Iversen MD, Fossel AH, Ayers K, *et al.* Phys Ther 2004;84:706–16

### Background:

If factors that influence exercise behaviour are known, health care professionals can more likely design and modify patient education materials targeted to promote exercise behaviour.

### Research question/s:

Which factors predict exercise behaviour in patients with rheumatoid arthritis 6 months after a visit with their rheumatologist?

### Methodology:

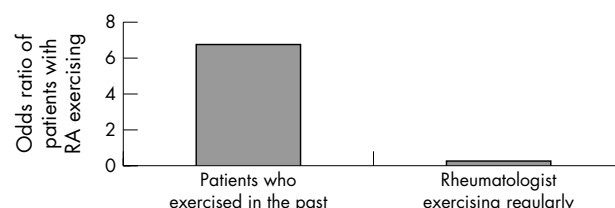
**Subjects:** 113 patients (mean age 54.8 years, 79% female) with rheumatoid arthritis (mean duration 9.8 years) who completed the 6-month follow up (85.6% of the original group).

**Experimental procedure:** Rheumatologists and patients completed baseline questionnaires and were audiotaped during a subsequent visit. Physical function and exercise behaviour were ascertained via questionnaire 6 months following the visit.

**Measures of outcome:** Multivariate logistic regression identified predictors of exercise behaviour at 6 months.

### Main finding/s:

Thirty-four patients (27%) were exercising 6 months after visiting their rheumatologist. More than 50% of the rheumatologists had five or more years of clinical experience, 18 (72%) were male, and 10 (42%) reported they exercised regularly.



### Conclusion/s:

- Patients with rheumatoid arthritis were nearly seven times more likely to exercise 6 months after visiting their rheumatologist if they participated in exercise in the past, and if the patient's rheumatologist was currently performing aerobic exercise, the patient was 26% more likely to be engaged in exercise at follow up
- These data may be useful in understanding patient motivation to participate in exercise

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

**Type of study:** Prospective cohort study

**Methodological considerations:** Small sample size, lack of generalisability to all patients with RA, confounding variables influencing exercise behaviour not examined

**Keywords:** exercise behaviour, rheumatoid arthritis