

Supplementary_appendix 1. Summary of study characteristics

Study characteristics	Participants characteristics	(Intervention)	Psychological variable & outcome measure	Results
<p>Alizadehkhayat et al (2007)</p> <p>Case control study to evaluate association between anxiety and depression and tennis elbow</p> <p>Liverpool, UK</p>	<p>Cases: 16 participants (50% male; mean age = 49 years) with tennis elbow recruited from an upper limb hospital clinic</p> <p>Tennis elbow defined as:</p> <ol style="list-style-type: none"> Duration >3/12 Tenderness at the lateral epicondyle Pain with resisted wrist and middle finger extension <p>Control: 16 healthy students and staff (56% male; mean age = 40 years)</p>	<p>n/a</p>	<p>Anxiety and depression measured using Hospital Anxiety & Depression Scale</p>	<p>Hospital Anxiety & Depression Scale significantly higher in tennis elbow group (sub scores $P < 0.001$;) Anxiety subscale showed cases as 55% 'probable', 13% 'possible' and 31% 'non-case'. Depression subscale showed cases as 36% 'probable' 31% 'possible' 31% 'non-case'</p>
<p>Coombes et al (2015)</p> <p>Cohort study to investigate the predictive capacity of early physical and psychological measures on short-term and long-term outcomes of pain and disability and mechanical hyperalgesia at the affected (tennis) elbow</p> <p>Brisbane, Australia</p>	<p>41 participants from a placebo group of a Randomised Control Trial (58% male; mean age = 49.9 years).</p> <p>Tennis elbow defined as:</p> <ol style="list-style-type: none"> Duration >6/52 Unilateral Pain located over lateral epicondyle Severity of at least >30 on a 100mm VAS Provoked by at least 2 of gripping, palpation, resisted wrist or middle finger 	<p>Placebo group forming the cohort all (except 1 whom felt had recovered) received a single blinded injection of a negligible volume saline.</p>	<p>Kinesiophobia measured using Tampa Scale of Kinesiophobia.</p> <p>Anxiety & depression measured using Hospital Anxiety and Depression Scale</p>	<p>Levels of anxiety, depression and kinesiophobia were not prognostic of pain and disability or mechanical hyperalgesia at 2 or 12 months.-</p>

	extension, or stretching of forearm extensors with reduced pain free grip.			
<p>Coombes et al (2012)</p> <p>A cross-sectional study evaluating if sensory, motor, and psychological factors are different in severe lateral epicondylalgia compared with less severe cases and control</p> <p>Brisbane, Australia</p>	<p>Participants taken from a RCT</p> <p>Cases: 164 participants (62% male; mean age = 49.6 years).</p> <p>LE defined as:</p> <ol style="list-style-type: none"> a. Unilateral elbow pain over the lateral epicondyle for longer than 6/52. b. Aggravated by a combination of palpation, gripping, and resisted wrist and / or finger extension. <p>Control: 62 participants (55% male; mean age = 49.6 years)</p>	n/a	<p>Kinesiophobia measured using Tampa Scale of Kinesiophobia</p> <p>Anxiety & depression measured using Hospital Anxiety and Depression Scale</p>	No significant difference between cases and controls for levels of anxiety, depression, and kinesiophobia
<p>Engelbrechtsen et al (2010)</p> <p>Cross sectional study to examine influence of determinants of Shoulder Pain and Disability Index (SPADI).</p> <p>Oslo, Norway</p>	<p>200 participants (45.5% male; mean age 49.9 years).</p> <p>Sub acromial shoulder pain defined as- dysfunction or pain on abduction, normal passive gleno-humeral joint ROM, pain with 2 of 3 of following: Abduction at 0 or 30 degrees, external rotation, internal rotation.</p>	n/a	Emotional Distress measured using the Hopkins Symptom Check List	29 % of variance of SPADI explained by combination of pain medication, emotional distress, flexion and hand-behind-back ROM. Emotional distress contributes 7.5% of total variance of SPADI (p <0.01). Emotional distress was not significant when the variables of pain and function were included in the model
<p>Garnevall et al (2013)</p> <p>Cross-sectional study examining psychosocial / personality factors and physical measures in tennis</p>	<p>Cases: 54 participants recruited via adverts (30% males; mean age = 48.7 years).</p> <p>Tennis elbow defined as 2 or</p>	n/a	Anxiety measured by Swedish Scales of Personality	Significant difference was found between cases and controls for somatic anxiety (P = 0.009)

<p>elbow correlating them with Nirschl's classification</p> <p>Norwegian primary care setting</p>	<p>more of the following</p> <ol style="list-style-type: none"> a. Pain on palpation of the epicondyle b. Pain on passive stretching of the wrist extensor muscles c. Pain on resisted extension of the wrist d. Pain on resisted finger extension <p>Controls: 43 recruited from the region (42% males; mean age = 48.8 years).</p>			
<p>Haahr & Andersen (2003)</p> <p>A RCT performed to determine whether minimal intervention involving information about the disorder, encouragement to stay active and instruction in graded self-performed exercises could enhance the prognosis of lateral epicondylitis compared with usual treatment, to quantify workforce factors associated with the prognosis, and to consider treatments given in general practice.</p> <p>Ringkjoebing County, Denmark</p>	<p>Participants recruited consecutively from GP practice.</p> <p>Cases: 141 (43% male; 58% age >40 yers).</p> <p>Control: 125 (48% male; 65% age >40 years).</p> <p>Tennis elbow defined as:</p> <ol style="list-style-type: none"> a. Pain in the elbow region b. Direct and indirect tenderness at or within 2cm of lateral epicondyle on resisted extension of the wrist and / or third finger. 	<p>Cases: advised that lateral epicondylitis is a self-limiting condition with a favourable prognosis. Participants were informed no specific treatment improves the overall long-term prognosis. Advice was given to avoid total rest, stay active and avoid activities that exaggerate the pain. Patients were encouraged to adjust work conditions if possible. Instructions were given by an ergonomist in performing a graded exercise programme.</p> <p>Control: treatment as preferred and agreed upon by the patient and the patient's GP.</p> <p>No blinding to treatment. Primary outcome assessment was done independently.</p> <p>Randomisation performed by</p>	<p>Distress measured by Setterlind two-item symptom scale</p>	<p>Continued high pain score (and low function) with reduction at 1 year of less than 50% was significantly associated with high baseline distress (Odds Ratio 1.9, Confidence Interval 1.0 - 4.0)</p>

		primary investigator according to a predetermined random sequence of number supplied to GP practices in sealed envelopes		
<p>Kromer et al 2014</p> <p>A cross-sectional and longitudinal study to investigate the associations among pain, catastrophising, fear, and disability and the contribution of fear avoidance beliefs to disability at baseline and at 3 month follow-up (on subacromial shoulder pain).</p> <p>Germany, general practice.</p>	<p>Data taken from a RCT investigating 2 different physical therapy interventions for participants with subacromial pain.</p> <p>Cases: 46 Control: 44</p> <p>Baseline demographics presented for group overall (49% male; mean age 51 years).</p> <p>Block randomisation process.</p> <p>Subacromial pain defined as;</p> <ol style="list-style-type: none"> Symptoms for at least 4 weeks Main complaints in the GHJ region or proximal segments of the arm Presence of one of the following signs; Hawkins-Kennedy, painful arc with active abduction or flexion, Neer impingement sign Pain during one of the following resistance tests; external rotation, 	<p>Both cases and controls: received 10 sessions within 5/52 and continued the home exercises for another 7/52 Supervised stretching and strengthening exercises for the shoulder, shoulder girdle and thoracic spine.</p> <p>Cases: in addition received;</p> <ol style="list-style-type: none"> examination-based manual mobilisations for the shoulder complex and cervical spine individualised education about the pathology instructions for the most provocative ADLs to reduce pain events during the day. 	<p>Kinesiophobia measured by Fear-Avoidance Beliefs Questionnaire and Catastrophisation measured by Pain Catastrophizing Scale.</p>	<p>Disability showed significant correlations with pain ($P < 0.1$; 0.401), catastrophizing ($P < 0.1$; 0.369), and fear-avoidance beliefs ($P < 0.5$; 0.237). Correlations between pain and catastrophizing ($P < 0.1$; 0.318) and between catastrophizing and fear-avoidance beliefs ($P < 0.1$; 0.293) were significant.</p> <p>Hierarchical regression model used to show:</p> <p>Baseline: Fear-avoidance beliefs significantly contributed to disability at baseline.</p> <p>3 Months: Fear avoidance and scores were not predictive of disability at 3 months</p>

	internal rotation, abduction or flexion			
<p>Lee et al 2014</p> <p>A cohort study to establish the relationship between positive and negative phrasing and participants' coping with lateral epicondylitis</p> <p>Seoul, South Korea</p>	<p>108 consecutive participants with isolated lateral epicondylitis of less than 6/12 of symptoms. 91 participated at follow up 1 year later (45% male; mean age = 54 years</p> <p>Lateral epicondylitis defined as the presence of all 3 of the following;</p> <ol style="list-style-type: none"> pain located at the lateral aspect of the elbow point tenderness over the lateral epicondyle pain on resisted wrist extension with the elbow in full extension. 	<p>Wait & see policy; self-stretching, counterforce bracing, pain medication and education that the tendon has temporarily weakened and it will run its course over 12-18 months.</p> <p>All followed up at 4/52 and were discharged (n=101) or referred for physical therapy, corticosteroid injection or surgery (n=7 and excluded from follow up at this stage).</p>	<p>Catastrophisation measured by Pain Catastrophization Scale.</p> <p>Depression measured using Patient Health Questionnaire</p>	<p>Pain Catastrophizing Scale used at baseline and 12/12. Patient Health Questionnaire (depression screening tool) was also used at follow up only</p> <p>Follow up at 12/12 was conducted by telephone and participants were asked to describe the nature of their condition.</p> <p>At 12/12, those who used positive phrasing terms had significantly lower catastrophisation scores ($P = 0.005$) and a larger improvement in scores ($P = 0.039$)</p> <p>Multiple analyses showed that negative phrasing ($P < 0.001$) and depression ($P < 0.19$) were independently associated with seeking additional treatment</p>
<p>Silbernagel et al 2011</p> <p>A case series to evaluate the 5 year outcome of participants (with Achilles tendinopathy) treated with exercise alone and to examine if certain characteristics, such as level of kinesiophobia, age and sex were related to the effectiveness of the treatment.</p>	<p>34 cases (53% male; mean age =51 years). Cases were originally recruited into a randomised study evaluating the effect of continuing sporting activity compared with rest for the initial 6 weeks whilst undertaking identical exercise programme.</p> <p>Achilles tendinopathy defined as a combination of;</p>	<p>Progressive tendon loading programme for 12/52 to 6/12</p>	<p>Kinesiophobia measured by Tampa Scale of Kinesiophobia</p>	<p>Significant ($P = 0.005$) negative correlation (-0.590) between the level of kinesiophobia and heel-rise work recovery (a battery of tests consisting of 2 jump tests, 2 strength tests, and 1 endurance test).</p>

Gothenburg, Sweden	<ul style="list-style-type: none"> a. Achilles tendon pain b. Swelling c. Impaired performance 			
<p>van Wilgen et al 2013</p> <p>A cross-sectional study to investigate whether somatosensory changes represent a plausible explanation for pain in participants with chronic patellar tendinopathies and second to investigate if psychological comorbidities may contribute to pain.</p> <p>The Netherlands</p>	<p>Cases: 12 (100% male; mean age 23.3 years) athletes.</p> <p>Patella tendinopathy defined as:</p> <ul style="list-style-type: none"> a. History of knee pain in the region related to exercise b. Tenderness on palpation c. 6 months duration d. Lower than 70 points on the Victorian Institute of Sports Assessment – Patella Questionnaire (VISA-P) <p>Controls: 20 (100% male; mean age 24.7 years) recruited from local sports clubs via advertising.</p>	n/a	<p>Phobic anxiety, anxiety, depression, somatization, insufficiency of thinking and acting, interpersonal sensitivity, hostility, and quality of sleep measured by Symptom Check List-90. Negative mood depression (eight items), anger (seven items), fatigue (six items), positive mood vigor (five items), and tension (six items) measured by Profile of Mood States questionnaire.</p>	<p>The Symptom Check List-90 and Profile of Mood States questionnaires demonstrated no significant differences between cases and controls.</p>