- [4] Hochman JR et al. Neuropathic pain symptoms in a community knee OA cohort. *Osteoarthritis Cartilage*. 2011 Jun;19(6):647-54.

Fig. 1: Ultrasound-guided identification of GNB target sites. Doppler mode. White arrows indicate genicular arteries. A. Superior medial genicular artery. B. Inferior medial genicular artery. C. Superior lateral genicular artery.

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FRI0383

A RANDOMISED PLACEBO-CONTROLLED CLINICAL TRIAL OF CURCUMA LONGA EXTRACT FOR TREATING SYMPTOMS AND EFFUSION-SYNOVITIS OF KNEE OSTEOARTHRITIS (CURKOA TRIAL)

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Background: Pharmacological therapies are limited, associated with off-target effects, are frequently contraindicated, and only modestly effective for pain in osteoarthritis (OA). Effusion and synovitis are common in OA and are associated with symptomatic and structural progression of OA. *Curcuma longa* (Turmeric) extract has anti-inflammatory effects and is gaining popularity in the treatment of OA despite the lack of high-quality evidence.

Objectives: The CurKOA trial aimed to determine the efficacy of *Curcuma longa* extract for reducing knee symptoms and effusion-synovitis in patients with symptomatic knee OA and knee effusion-synovitis.

Methods: In this randomised, double-blind, placebo-controlled trial, participants with significant knee pain (≥ 40 mm on a 100-mm visual analog scale [VAS]), symptomatic knee OA (by ACR criteria) and ultrasound defined effusion-synovitis were randomised to receive *Curcuma longa* extract (80% aqueous based extract standardized to turmerosaccharides + 20% curcuminoids, 2 x 500 mg capsules/day) or identical placebo for 12 weeks. Knee MRI scans were obtained at baseline and 12 weeks. Coprimary outcomes were changes in knee pain assessed by VAS and change in knee effusion-synovitis volume assessed by MRI over 12 weeks.

Results: Among 70 participants (36 received *Curcuma longa*, 34 received placebo, age 61.8 ± 8.6 years, 56% female), *Curcuma longa* significantly improved VAS knee pain compared to placebo (-9.11 mm, 95% confidence interval [CI] $[-17.79$ to $-0.44]$) over 12 weeks, equivalent to a standardised effect size of 0.50. There was no significant between group difference in change in effusion-synovitis volume (3.24 mL $[-0.33$, $6.82]$). There were significantly greater reductions in WOMAC knee pain (-47.22 mm $[-81.22$, $-13.22]$), WOMAC function (-112.26 mm $[-222.79$ to $-1.74]$) and significantly more OARSI-OMERACT treatment responders (63% treatment vs. 38% placebo [Risk Ratio=1.64 (1.00 to 2.70)]) in the *Curcuma longa* group compared to the placebo group. There was no significant between-group difference in lateral femoral cartilage T2 relaxation time (-0.38 ms $[-1.10$ to $0.34]$) assessed from compositional MRI. The incidence of adverse events was similar in the *Curcuma longa* ($n=14$ (39%)) and placebo ($n=18$ (53%)) groups over 12 weeks ($P=0.24$).

Conclusion: An extract of *Curcuma longa* significantly improved knee pain in an inflammatory phenotype of knee OA patients over 12 weeks compared to placebo but had no effect on knee effusion-synovitis and cartilage composition assessed using MRI. The moderate effect size of the treatment supports the use of *Curcuma longa* extract for the symptomatic management of knee OA.

Figure 1. Change in VAS and WOMAC subscale scores in treatment and control groups over the course of the study. (VAS = Visual analog scale, WOMAC = Western Ontario and McMaster University Index, CL = Curcuma longa extract)

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BODY COMPOSITION AS A MEDIATOR IN THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND PHYSICAL FUNCTION IN LOWER-LIMB OSTEOARTHRITIS: RESULTS FROM THE KHOALA COHORT

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Metz, France; ⁴Sorbonne Université, INSERM, AP-HP, Hôpital Saint-Antoine, Department of Rheumatology, Paris, France; ⁵Inserm, CHRU Nancy, Université de Lorraine, CIC-1433 Epidémiologie Clinique, Nancy, France; ⁶CHU Caen, Department of Rheumatology, Caen, France

Background: Many trials investigated the beneficial effect of physical activity (PA) on physical function (PF) in people with osteoarthritis (OA), but factors involved in this relationship are poorly understood. Considering the link between OA and obesity and obesity-related disorders, body composition (BC) could be one of these factors.

Objectives: To examine the relationships between baseline components of PA and 5-year PF scores, considering BC variables measured at 3 years as potential mediators in these associations (Figure).

Methods: We used data from the KHOALA cohort, a French population-based multicenter cohort of 878 patients with symptomatic knee and/or hip OA, aged between 40 and 75 years old. Baseline PA intensity (Metabolic Equivalent of Task, MET), frequency (times/week), duration (hours/week) and type (weight-bearing or not) were assessed by the Modifiable Activity Questionnaire. PF was measured with the WOMAC questionnaire at 5 years (higher scores = greater functional limitations).

Skeletal muscle mass (grams) and fat mass (grams) were measured by dual X-ray absorptiometry (DXA) in 358 patients at 3 years. Fat mass index (kg/m^2), appendicular fat mass (kg), % of fat mass, lean mass index (kg/m^2), appendicular muscle mass (kg), skeletal muscle mass index (kg/m^2 or %) were calculated based on DXA data. Sarcopenia was defined according to the FNIH Sarcopenia Project recommendations.

A causal mediation analysis was used to highlight the mediating role of BC variables. Bivariate analyses (multiple linear and logistic regressions) were performed to select the variables of interest. Separate generalized linear models were used to describe the relationships between PA components, PF and selected BC variables. Unadjusted and adjusted for baseline confounders (age, gender, number of comorbidities, disease duration, mental health and vitality scores) models were ran.

Results: A 1-MET increase in baseline PA intensity was significantly associated with an improvement in PF at 5 years (-3 points). Weight-bearing PA was also significantly associated with better PF scores (-5 points).

A 1-MET-increase in PA intensity at baseline was associated with a subsequent decrease at 3 years in fat mass index ($-0.86 \text{ kg}/\text{m}^2$), an increase in skeletal muscle mass index ($\geq 6\%$), and a decrease in % of fat mass (-2%). Non-weight-bearing PA was significantly associated with a decrease in fat mass index ($-2.5 \text{ kg}/\text{m}^2$).

A 1-point increase in PF score was associated with a reduction in skeletal muscle mass index (calculated from body mass index, -0.3%) and an increase in skeletal muscle mass index (calculated from height, $+3 \text{ kg}/\text{m}^2$). The presence of sarcopenia was significantly associated with a degradation of PF (+7 points).

Crude analyses indicated that 20.4% of the effect of baseline PA intensity on PF scores at 5 years was mediated by skeletal muscle mass index (calculated from height), 23.2% by fat mass index and 26.6% by % of fat mass. Similarly, 19.3% of the effect of baseline PA type on PF scores at 5 years was mediated by fat mass index and 15.1% by % of fat mass. After adjustment, we found no longer evidence of a mediating role of BC variables in these associations.

Conclusion: We found significant associations between a 1-MET increase in PA intensity, weight-bearing PA at baseline and improvement in PF at 5 years, without any mediating role of BC variables. Further studies are needed to better understand the factors involved in these associations, especially psychosocial variables.

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FRI0385

MUSCLE FUNCTION AND QUALITY BUT NOT MASS PROTECT AGAINST MORE SEVERE KNEE PAIN TRAJECTORIES

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Background: Evidence suggests that periarthral muscles have a role in the pathogenesis of pain, but results have not been consistent. We recently reported that pain population is heterogeneous and consists of different subgroups of which the causes and mechanisms differ.

Objectives: To examine the association of muscle mass, leg strength, knee extensor strength, low-limb muscle quality with knee pain trajectories.

Methods: Data on 975 participants from a population-based older adult cohort study were utilised. Dual-energy X-ray absorptiometry was used to assess muscle/fat mass. Leg strength in both legs and dominant knee extensor strength were measured. Low-limb muscle quality was calculated (i.e. leg strength divided by lower-limb muscle mass). The Western Ontario and McMaster Universities Osteoarthritis Index pain questionnaire was used to measure knee pain at each time-point. Radiographic knee osteoarthritis (ROA) was assessed by X-ray. Group-based trajectory modelling was applied to identify pain trajectories. Multi-nominal logistic regression was used for the analyses.

Results: A total of 975 participants [Mean±SD: age 62.2±7.4 years, body mass index (BMI) 27.8±4.6 kg/m^2 and 51% of females] were included in the analysis. Three distinct pain trajectories were identified: 'Minimal pain' (53%), 'Mild pain' (34%) and 'Moderate pain' (13%). In multivariable analysis, both greater total and low-limb muscle mass were associated with an increased risk of 'Mild pain' [total muscle mass: relative risk (RR): 1.51 per SD increase, 95%CI: 1.14–1.98; low-limb muscle mass RR: 1.33 per SD increase, 95%CI: 1.07–1.66] and 'Moderate pain' [total muscle mass: RR: 2.57 per SD increase, 95%CI: 1.70–3.89; low-limb muscle mass RR: 2.03 per SD increase, 95%CI: 1.47–3.80] compared to the 'Minimal pain' trajectory group. After further adjustment for fat mass, these associations disappeared. Total muscle mass percentage was associated with a reduced risk of being in more severe pain trajectories after adjustment for covariates (RR=0.56 to 0.71 per SD increase, all $P<0.05$). Similar results were observed in those with ROA.

Conclusion: Muscle percentage, strength and quality, but not muscle mass itself are associated with a reduced risk of being more severe pain trajectories, suggesting that improving muscle composition, muscle function and power are of more clinically relevance to preventing the development and maintenance of worse pain trajectories.

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FRI0386

EARLY OSTEOARTHRITIS: IS ASYMPTOMATIC CLINICAL COURSE REAL?

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Background: Osteoarthritis (OA) is the leading cause of disability among all RMDs. Early diagnosis of OA is complicated. So, there is an absence of clear markers of the diagnosis of OA, and this issue is now being discussed.

Objectives: The aim of this study is to examine relatively healthy individuals without symptoms in order to evaluate MR-markers of early OA of the knee.

Methods: We included 29 relatively healthy individuals. 55,17% (n=16) were women. Median age was 35 (32-41) years. They didn't have any complaints, according to the preliminary criteria of early OA, symptoms of OA (1), didn't have any significant concomitant diseases and elevated ESR, CRP. The exclusion criteria were previous trauma, orthopedic surgery, X-Ray signs of OA. MRI was performed on 1,5 T Siemens Magnetom Essenza. WOMS-scale was used to evaluate the knee joint structures.

Results: In all examined joints we observed small changes characteristic of symptomatic OA (osteophytes, cartilage damage etc.). In 4 knees we found undamaged cartilage (0 points). In 5 knees we observed cartilage damage ≥ 4 points with marrow abnormality. In the Table 1 we present the frequency of any abnormality (≥ 1 points) in each parameter present in examined joints. The most commonly asymptomatic changes were observed in the patellofemoral joint. Small osteophytes were the most common changes.