Meta-analysis was performed on standardized mean differences (SMDs, bodily pain data) and mean differences (MDs, 100mm VASpain only) of change from baseline (sd), using the Meta and Metafor packages in R. Heterogeneity was quantified using I^2 and tau statistics. Bias was assessed with a funnel plot and Eggers test.

Results: 15983 papers, 470 abstracts and 152 full texts were assessed. Pain data from 12 RCTs were suitable for the meta-analyses. The most common pain metric was the 100mm VASpain (9 trials).

Study populations ranged from $n=12$ to $n=350$ participants, 50% to 71% were female with mean ages from 43 to 66 years. Baseline scores for VASpain ranged from 34 to 66 mm. Means were reported for DAS28 (from 4.9 to 5.8), ESR (25 to 60 mm) and CRP (5 to 27 mg/L).

Data synthesis at the reported primary time point/end point showed a statistically significant reduction in bodily pain in participants treated with GCs; SMD = -0.36 (10 studies, 1377 participants, 95% CI, -0.59 to -0.14, $p=0.002$) with significant heterogeneity ($I^2 = 66\%$, $\tau = 0.27$, $p<0.01$). The Funnel plot suggested asymmetry, favouring GCs (Eggers $p = 0.007$).

Subgroup analyses were used to investigate the time course of specific effects on pain. Efficacy displayed time-related decreases after initiation. From 0-3 months SMD= -0.56 (95% CI, -0.76 to -0.36, $p<0.001$, 9 studies, 936 participants, $I^2 = 43\%$, Eggers $p=0.002$). Efficacy was lower at >3 - 6 months (SMD= -0.32, 95% CI -0.52 to -0.11, $p=0.002$, 3 studies, 382 participants, $I^2 = 0\%$, Eggers $p=0.75$) and further reduced at >6 months (SMD= -0.07, 95% CI, -0.23 to 0.08, $p=0.357$, 4 studies, 665 participants, $I^2 = 7\%$, Eggers $p=0.43$).

For trial data collected during concomitant oral GC dosage, mean difference (MDs) in 100mm VASpain was -14mm (95% CI, -20mm to -9mm) greater improvement in GC than control in the 0-3 month period (8 studies, 1047 participants, $I^2 = 70\%$). For later follow ups, MDs at >3 to 6 months were -6mm (95% CI, -11mm to -1mm, 3 studies, 537 participants), and -1mm (95% CI, -6mm to 4mm, 3 studies, 369 participants) at >6 months.

Conclusion: Oral GCs have efficacy for pain in RA but the mean effect is of borderline clinical importance, and greatest shortly after steroids are commenced. GCs were usually used alongside other treatments as part of a combination. Future research might determine who might gain most benefit from systemic GCs, and improve other treatments to reduce the burden of pain.

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Back pain, mechanical musculoskeletal problems, local soft tissue disorders

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GLYCOSAMINOGLYCAN REMODELLING OF LUMBAR INTERVERTEBRAL DISCS IN ELITE ROWERS THROUGHOUT THEIR ANNUAL TRAINING CYCLE

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Background: To assess the glycosaminoglycan (GAG) content of lumbar intervertebral discs (IVD) in elite rowers (ER) at different stages of their annual training cycle and compared to healthy volunteers (HV) using GAG chemical exchange saturation transfer (gagCEST).

Objectives: Does GAG content of IVDs differs between ER at different stages of the training cycle from HV?

Methods: 205 lumbar IVD of 21 ER (23 $\pm$ 3 years, 9 female, 11 male) and 25 HV (27 $\pm$ 2 years, 13 female, 12 male) were prospectively examined with 3T magnetic resonance imaging (MRI). Standard T2 weighted (T2w) sequences were used for morphological grading according to the Pfirrmann classification. GAG content of the nucleus pulposus (NP) and annulus fibrosus was determined with gagCEST in non-degenerated discs according to Pfirrmann. ER were examined during the peak of their competition preparation (T0) and 6 months later during the peak of their post-competition recovery period (T1).

Results: At T0 we found significantly higher gagCEST values in ER (A) compared to HV (C) (NP: $4.26 \pm 2.37\%$ vs. $3.38 \pm 1.72\%$, $p<0.05$; confidence interval (CI) 0.32%/1.44%; AF: $2.75 \pm 1.7\%$ vs. $1.961 \pm 1.23\%$, $p<0.01$; CI 0.4%/1.2%). At

T1 gagCEST values in ER (B) decreased and illustrated no significant difference compared to HV (C) (NP: $3.55 \pm 2.31\%$, $p = 0.531$, CI 0.038%/0.73%; AF: $2.31 \pm 1.57\%$, $p = 0.073$, CI 0.03%/0.74%).

Conclusion: Compared to HV lumbar IVD of ER show significantly higher gagCEST values during the peak of their competition preparation and similar values during the recovery period, indicating a GAG remodelling effect by training.

Figure 1. Comparison of gagCEST values of lumbar IVD between ER (A, T0; B, T1) and HV.

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Pain in rheumatic diseases, including fibromyalgia

THU0477

SURAL NERVE SIZE IN FIBROMYALGIA SYNDROME

Figure 2. Prevalence ad distribution of sing/symptoms indicative for the presence of small-fiber pathology

Values reported in percentage. All between-groups differences were statistically significant ($p<0.01$)