Meta-analysis was performed on standardized mean differences (SMDs, bodily pain data) and mean differences (MDs, 100mm VASpain only) from change from baseline (sd), using the Meta and Metafor packages in R. Heterogeneity was quantified using I² 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 60mm) and CRP (5 to 27mg/L).

Data synthesis at the reported primary time point/endpoint 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 (I² = 73%, tau = 0.27, p<0.001). 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, I² = 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, I² > 90%, 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, I² = 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 for trial data collected during concomitant oral GC dosage, mean difference (CI) 0.32%/1.44%; AF: 2.75 ±1.7% vs. 1.961 ±1.23%, p<0.01; CI 0.4%/1.2%). At

**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.