

**Supplementary Table 1. Search strategy for systematic review in Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R)/Embase/Cochrane, Ovid Embase Classic+Embase, Ovid EBM Reviews - Cochrane Central Register of Controlled Trials**

|   | Search term/ key words                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | (hand* or "hand joint*" or "intermetacarpal joint*" or finger* or "finger joint*" or "carpal joint*" or digit* or "carpometacarpal joint*" or "metacarpophalangeal joint" or thumb* or metacarpus or "Thumb Carpometacarpal Joint" or "first metacarpal-carpal" or carpometacarpal or interphalangeal or "distal interphalangeal" or "proximal interphalangeal" or intermetacarp* or interphalang* or intercarp* or carpometacarp* or metacarpophalang* or metacarp* or CMC or IP or "thumb base*" or TB).mp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2 | (Osteoarthritis or Osteo-arthritis or osteoarthr* or osteo-arthr* or Osteo-arthritis or osteoarthr* or osteo-arthr* or osteoarthrosis or "degenerative arthritis" or "erosive osteoarthritis" or "arthrosis" or "arthroses" or "OA" or HOA).mp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3 | ("randomized controlled trial" or "randomised controlled trial" or "controlled trial" or "multicentre randomised controlled trial" or "multicentre randomized controlled trial" or "randomized single-blind controlled trial" or "randomised single-blind controlled trial" or "Prospective, Randomized Study" or "Prospective, Randomised Study" or "double-blind, randomised, placebo-controlled trial" or "double-blind, randomized, placebo-controlled trial" or "randomised study" or "randomized study" or "Randomized Trial" or "Randomised Trial" or "randomized, single-blind, prospective study" or "randomised, single-blind, prospective study" or "randomised, double-blind, placebo-controlled trial" or "randomized, double-blind, placebo-controlled trial" or "randomized clinical trial" or "randomised clinical trial" or "clinical trial" or "randomised double-blind placebo-controlled crossover trial" or "randomized double-blind placebo-controlled crossover trial" or "randomised double-blind placebo-controlled trial" or "randomized double-blind placebo-controlled trial").mp. |
| 4 | (Steroids or corticosteroid* or prednisolone or methyl prednisolone or Methylprednisolone or Depo medrone or depomedrone or solu Medrol or Triamcinolone or triamcinolone acetonide or triamcinolone or Kenalog or betamethasone or celestone or celestone soluspan or glucocorticoid*).mp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5 | 1 and 2 and 3 and 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6 | Limit to English language                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**Supplementary Table 2. Overview of raw data for studies evaluating oral corticosteroids for all outcomes at all time points**

| Study<br>Year<br>Country                  | Outcome                                                                                                                  | Outcome<br>measures                        | End points                                           | Intervention                                           | Control                                               | Mean difference (95%<br>CI)/OR (95% CI)/RR (95% CI)                | P value                 |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------|-------------------------|
| Oral prednisolone vs placebo              |                                                                                                                          |                                            |                                                      |                                                        |                                                       |                                                                    |                         |
| Kroon<br>(2019)<br>The<br>Netherla<br>nds | Change of pain<br>score from baseline<br>Baseline - 3 months<br>(between group<br>mean difference<br>reduced at week 14) | VAS (0-100)                                | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | -54.4 (21.8)<br>-21.5 (21.7)<br>- NR<br>- NR           | -53.6 (19.3)<br>-5.2 (24.3)<br>- NR<br>- NR           | -16.5 (-26.1 to -6.9)<br>-8.5 (-18.5 to 1.5)<br>6.6 (-3.7 to 16.9) | 0.0007<br>-<br>-        |
|                                           |                                                                                                                          | AUSCAN-<br>Pain (0-20)                     | baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 11.3 (3.3)<br>-4.7 (3.5)<br>-3.3 (3.5)<br>-0.4 (3.2)   | 10.2 (3.1)<br>-1.1 (3.1)<br>-1.4 (3.2)<br>-0.9 (3.7)  | -3.5 (-4.9 to -2.1)<br>-1.7 (-3.2 to -0.3)<br>0.6 (-0.9 to 2.0)    | <0.0001<br>0.02<br>0.43 |
|                                           |                                                                                                                          | MHQ pain<br>(0-100)                        | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 50.9 (19)<br>-8.0 (17.9)<br>- NR<br>0.6 (12.9)         | 50.4 (14.4)<br>-5.0 (9.9)<br>- NR<br>-3.8 (13.6)      | -3.7 (-11.7 to 4.4)<br>- NR<br>3.8 (-4.0 to 11.6)                  | 0.37<br>-<br>0.34       |
|                                           | Fulfillment of<br>outcome measures<br>in OMERACT- OARSI<br>responder criteria                                            |                                            | 6 weeks<br>14 weeks                                  | -NR<br>-NR                                             | -NR<br>-NR                                            | 5.3 (2.0 to 3.6)<br>0.9 (0.3 to 2.2)                               | 0.0007<br>0.76          |
|                                           | Change of pain at<br>thumb base                                                                                          | VAS                                        | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 34.3 (29)<br>-12.3 (28.0)<br>-7.9 (29.5)<br>4.3 (29.8) | 35.4 (28.5)<br>0.2 (17.3)<br>0.4 (23.1)<br>3.6 (23.4) | -12.0 (-21.7 to -2.3)<br>-7.8 (-18.9 to 3.3)<br>1.3 (-9.9 to 12.6) | 0.016<br>0.17<br>0.82   |
|                                           | Change of<br>functional score<br>from baseline                                                                           | AUSCAN-<br>Function                        | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 18.6 (7.8)<br>-6.5 (7.4)<br>-4.5 (7.7)<br>-1.3 (6.8)   | 19.0 (7.1)<br>-2.7 (4.7)<br>-3.4 (5.4)<br>-1.8 (6.3)  | -3.7 (-6.2 to -1.1)<br>-1.0 (-3.8 to 1.7)<br>0.7 (-2.0 to 3.4)     | 0.0051<br>0.46<br>0.49  |
|                                           |                                                                                                                          | FIOHA                                      | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 12.4 (5.4)<br>-2.6 (5.1)<br>-1.3 (4.2)<br>0.6 (4.4)    | 11 (4.7)<br>-0.5 (4.0)<br>-0.8 (4.2)<br>0.5 (4.8)     | -2.1 (-4.0 to -0.2)<br>-0.5 (-2.2 to 1.3)<br>0.1 (-1.8 to 2.1)     | 0.031<br>0.59<br>0.15   |
|                                           |                                                                                                                          | MHQ overall<br>function                    | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 55.7 (13.9)<br>6.3 (13.2)<br>- NR<br>-4.2 (10.4)       | 57.1 (15.4)<br>0.2 (12.0)<br>- NR<br>-1.8 (12.0)      | 5.8 (0.5 to 11.1)<br>- NR<br>-2.5 (-7.2 to 2.3)                    | 0.03<br>- NR<br>0.31    |
|                                           |                                                                                                                          | MHQ activities of<br>daily living          | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 70.2 (19.1)<br>8.2 (16.7)<br>- NR<br>-0.1 (13.3)       | 71.3 (16.7)<br>2.7 (12.9)<br>- NR<br>-0.2 (13.1)      | 5.5 (-0.8 to 11.7)<br>- NR<br>-0.3 (-6.0 to 5.4)                   | 0.09<br>- NR<br>0.92    |
|                                           | Change in Grip<br>strength from<br>baseline                                                                              |                                            | Baseline<br>6 weeks<br>8 weeks<br>14 weeks           | 20.4 (11.3)<br>3.5 (4.1)<br>- NR<br>-0.6 (5.2)         | 20.4 (11.8)<br>2.2 (5.5)<br>- NR<br>1.2 (6.1)         | 1.2 (-0.8 to 3.2)<br>- NR<br>-1.7 (-4.1 to 0.7)                    | 0.24<br>- NR<br>0.16    |
|                                           | Synovial thickening<br>(summed score)                                                                                    | Ultrasound<br>(change<br>from<br>baseline) | Baseline<br>6 weeks<br>14 weeks                      | 16.4 (6.3)<br>-2.8 (4.7)                               | 17.8 (6.3)<br>-0.3 (5.0)                              | -2.5 (-4.5 to -0.5)                                                | 0.016                   |
|                                           | Power Doppler<br>signal                                                                                                  | Ultrasound<br>(change<br>from<br>baseline) | Baseline<br>6 weeks<br>14 weeks                      | 5.3 (4.1)<br>-1.7 (4.3)                                | 7.0 (4.3)<br>-1.3 (4.2)                               | -0.4 (-2.2 to 1.4)                                                 | 0.68                    |
|                                           | Synovitis                                                                                                                | MRI<br>(change<br>from<br>baseline)        | Baseline<br>6 weeks<br>14 weeks                      | 15.6 (7.5)<br>-0.7 (2.8)                               | 14.8 (6.0)<br>-0.5 (2.2)                              | -0.2 (-1.4 to 0.9)                                                 | 0.66                    |
|                                           | Bone marrow<br>lesions                                                                                                   | MRI (change<br>from<br>baseline)           | Baseline<br>6 weeks<br>14 weeks                      | 11.0 (6.9)<br>-0.2 (1.7)                               | 11.0 (6.7)<br>0.5 (1.2)                               | -0.7 (-1.3 to -0.02)                                               | 0.043                   |
| Kvien<br>(2008)<br>Norway                 | Pain                                                                                                                     | AUSCAN                                     | Baseline<br>42 days<br>(changes<br>from<br>baseline) | 57.9 (20.2)<br>-14.2 (SE 3.0)                          | 60.9 (19.4)<br>-4.0 (SE 3.1)                          | 10.2 (1.6 to 18.7)                                                 | 0.020                   |
|                                           |                                                                                                                          | VAS                                        | Baseline                                             | 58.3 (20.1)                                            | 62.1 (16.9)                                           |                                                                    |                         |

|                        |                                                                                                                        |        |                                                      |                                            |                                            |                    |              |
|------------------------|------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------|--------------|
|                        |                                                                                                                        |        | 42 days<br>(changes<br>from<br>baseline)             | -18.6 (SE 3.3)                             | - 6.3 (3.3)                                | 12.3 (3.0 to 21.5) | 0.010        |
|                        | Function                                                                                                               | AUSCAN | Baseline<br>42 days<br>(changes<br>from<br>baseline) | 62.4 (19.5)<br>-8.1 (2.7)                  | 67.8 (17.5)<br>-3.6 (2.7)                  | 4.5 (-3.2 to 12.2) | 0.246        |
|                        | Stiffness                                                                                                              | AUSCAN | Baseline<br>42 days<br>(changes<br>from<br>baseline) | 61.1 (18.0)<br>-15.2 (3.2)                 | 64.5 (21.2)<br>-7.7 (3.3)                  | 7.5 (-1.7 to 16.7) | 0.108        |
| Wenham<br>(2012)<br>UK | Pain over last 2<br>weeks (change from<br>baseline)<br>Baseline - 3 months<br>(change from<br>baseline)                | VAS    | Baseline<br>Week 4<br>Week 12                        | 62 (15)<br>-17 (-24, -11)<br>-8 (-16, 0)   | 58 (17)<br>-16 (-22, -9)<br>-8 (-16, 1)    |                    | 0.77<br>0.94 |
|                        | Pain over last 48<br>hours                                                                                             | VAS    | Baseline<br>Week 4<br>Week 12                        | 62 (19)<br>-20 (-27, -13)<br>-10 (-19, -1) | 61 (16)<br>-17 (-24, -10)<br>-13 (-22, -4) |                    | 0.54<br>0.61 |
|                        | Pain VAS worst joint<br>last 48 hours<br>(change from<br>baseline)<br>Baseline - 3 months<br>(change from<br>baseline) | VAS    | Baseline<br>Week 4<br>Week 12                        | 71 (21)<br>-22 (-29, -15)<br>-10 (-19, 0)  | 67 (19)<br>-16 (-23, -9)<br>-8 (-17, 2)    |                    | 0.19<br>0.78 |
|                        | Pain                                                                                                                   | AUSCAN | Baseline<br>Week 4<br>Week 12                        | 66 (16)<br>-18 (-24, -12)<br>-6 (-14, 1)   | 60 (15)<br>-12 (-18, -6)<br>-2 (-9, 6)     |                    | 0.21<br>0.35 |
|                        | Stiffness                                                                                                              | AUSCAN | Baseline<br>Week 4<br>Week 12                        | 55 (30)<br>-13 (-21, -5)<br>0 (-9, 9)      | 56 (21)<br>-9 (-17, -1)<br>0 (-9, 9)       |                    | 0.46<br>0.95 |
|                        | Function                                                                                                               | AUSCAN | Baseline<br>Week 4<br>Week 12                        | 61 (23)<br>-10 (-16, -4)<br>-2 (-8, 5)     | 62 (15)<br>-8 (-14, -2)<br>0 (-7, 6)       |                    | 0.61<br>0.82 |

VAS: visual analogue scale; AUSCAN: Australian Canadian Osteoarthritis Hand Index; FIHOA: Functional Index for Hand Osteoarthritis; MHQ: Michigan Hand Outcome Questionnaire; NR: not reported

**Supplementary Table 3. Overview of raw data for studies evaluating intra-articular corticosteroids for all outcomes at all time points**

| Study<br>Year<br>Country                                                                           | Outcome                   | Outcome<br>measures         | End points                                                          | Intervention                                                | Control                                                       | Mean difference<br>(95% CI)/OR (95%<br>CI)/RR (95% CI) | P value                                   |
|----------------------------------------------------------------------------------------------------|---------------------------|-----------------------------|---------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------|
| <b>Ultrasound guided intra-articular methylprednisolone and lidocaine vs platelet-rich plasma</b>  |                           |                             |                                                                     |                                                             |                                                               |                                                        |                                           |
| Malahias<br>(2021)<br>Greece                                                                       | Pain                      | VAS                         | Baseline<br>3 months<br>12 months                                   | 70 (60-82.5)<br>20 (10.0-62.5)<br>65 (50-80)                | 75 (57.5-80.0)<br>40 (17.5-70.0)<br>20 (10.0-52.5)            | - NR<br>- NR<br>- NR                                   | 0.76<br>0.46<br>0.015                     |
|                                                                                                    | Disability                | Q-DASH                      | Baseline<br>3 months<br>12 months                                   | 57.9 ± 25.6<br>32.6 ± 31.8<br>43.0 ± 27.6                   | 50.4 ± 21.6<br>32.8 ± 29.2<br>20.4 ± 27.7                     | - NR<br>- NR<br>- NR                                   | 0.38<br>0.65<br>0.025                     |
|                                                                                                    | Patient's<br>satisfaction | Subjective<br>(yes:no)      | 3 months<br>12 months                                               | 56%:44%<br>12.5%:87.5%                                      | 44%:56%<br>69%:31%                                            | - NR<br>- NR                                           | 0.48<br>0.002                             |
| <b>Intra-articular triamcinolone acetate vs hyaluronic acid</b>                                    |                           |                             |                                                                     |                                                             |                                                               |                                                        |                                           |
| Bahadir<br>(2009)<br>Turkey                                                                        | Pain                      | VAS                         | Pretreatment<br>Month 1<br>Month 3<br>Month 6<br>Month 12           | 5.9±1.6<br>3.1±2.6<br>3.2±2.0<br>3.5±1.8<br>4.9±2.0         | 6.5±2.0<br>4.7±2.6<br>4.6±2.7<br>5.7±2.2<br>6.0±2.1           | - NR<br>- NR<br>- NR<br>- NR<br>- NR                   | 0.266<br>0.033<br>0.059<br>0.002<br>0.128 |
|                                                                                                    | Function                  | Duruöz Hand<br>Index        | Pretreatment<br>Month 1<br>Month 3<br>Month 6<br>Month 12           | 25.2±12.9<br>13.8±10.2<br>11.2±8.5<br>12.0±8.7<br>21.1±11.6 | 27.9±11.4<br>24.0±12.4<br>22.2±13.2<br>22.1±12.5<br>24.9±13.4 | - NR                                                   | 0.506<br>0.005<br>0.006<br>0.006<br>0.371 |
|                                                                                                    | Grip<br>strength          | Grip<br>dynamometer         | Pretreatment<br>Month 1<br>Month 3<br>Month 6<br>Month 12           | 38.0±9.5<br>45.2±11.5<br>42.0±9.8<br>41.6±10.0<br>39.7±12.3 | 32.0±8.4<br>35.6±12.9<br>36.2±10.8<br>35.2±10.8<br>34.9±11.1  | - NR                                                   | 0.060<br>0.034<br>0.099<br>0.091<br>0.291 |
|                                                                                                    | Tip Pinch<br>strength     | Pinch<br>dynamometer        | Pretreatment<br>Month 1<br>Month 3<br>Month 6<br>Month 12           | 8.9±1.5<br>8.9±2.1<br>9.0±2.0<br>8.6±2.0<br>8.2±1.9         | 6.8±1.7<br>7.0±2.1<br>7.3±1.9<br>7.5±2.1<br>7.1±2.0           | - NR                                                   | NR                                        |
|                                                                                                    | Chunk Pinch<br>strength   | Pinch<br>dynamometer        | Pretreatment<br>Month 1<br>Month 3<br>Month 6<br>Month 12           | 10.3±1.9<br>10.5±2.4<br>10.6±2.4<br>10.0±2.3<br>9.9±2.2     | 8.1±2.0<br>8.4±2.8<br>8.6±2.3<br>8.8±2.4<br>8.5±2.3           | - NR                                                   | NR                                        |
|                                                                                                    | Lateral Pinch<br>strength | Pinch<br>dynamometer        | Pretreatment<br>Month 1<br>Month 3<br>Month 6<br>Month 12           | 13.1±2.3<br>13.3±2.9<br>13.4±3.1<br>12.9±2.8<br>12.7±2.7    | 10.2±2.4<br>10.7±3.3<br>11.1±3.0<br>11.1±3.2<br>14.9±16.7     | - NR                                                   | NR                                        |
| <b>Intra-articular triamcinolone vs sodium hyaluronate</b>                                         |                           |                             |                                                                     |                                                             |                                                               |                                                        |                                           |
| Fuchs<br>(2006)<br>Germany                                                                         | Pain                      | 100mm VAS,<br>Median values | Week1<br>Week 2<br>Week 3<br>Week 4<br>Week 5<br>Week 14<br>Week 26 | 63.5<br>61.5<br>46.0<br>33.0<br>20.0<br>22.0<br>45.5        | 65.5<br>64.5<br>54.0<br>41.0<br>34.0<br>35.0<br>30.0          | - NR                                                   | NR                                        |
| <b>Intra-articular sodium betamethasone sodium phosphate–betamethasone acetate vs Hylan G-F 20</b> |                           |                             |                                                                     |                                                             |                                                               |                                                        |                                           |
| Heyworth<br>(2008)<br>USA                                                                          | Pain at rest              | VAS                         | Baseline<br>2 weeks<br>4 weeks<br>12 weeks<br>26 weeks              | 5±1 (4.7#)<br>3.3 #<br>2.5 #<br>3.7 #<br>3.8 #              | 5±1 (4.6#)<br>3.1 #<br>3.9 #<br>3.1 #<br>3.2 #                | - NR                                                   | NR                                        |
|                                                                                                    | Grip<br>strength          | Jamar<br>dynamometer        | Baseline<br>2 weeks<br>4 weeks<br>12 weeks<br>26 weeks              | 41 #<br>45 #<br>45 #<br>40 #<br>38 #                        | 42 #<br>43 #<br>43 #<br>42 #<br>45 #                          | - NR                                                   | NR                                        |
|                                                                                                    | Disability                | Q-DASH                      | Baseline<br>2 weeks<br>4 weeks                                      | 41 #<br>33 #<br>26 #                                        | 37 #<br>29 #<br>30 #                                          | - NR                                                   | NR                                        |

|                                                                                |                            |                              |                                                                                                                        |                                                                                           |                                                                                            |                                                      |                               |
|--------------------------------------------------------------------------------|----------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------|
|                                                                                |                            |                              | 12 weeks<br>26 weeks                                                                                                   | 30 #<br>31 #                                                                              | 27 #<br>26 #                                                                               |                                                      |                               |
|                                                                                | Lateral Pinch strength     | Pinch dynamometer            | Baseline<br>2 weeks<br>4 weeks<br>12 weeks<br>26 weeks                                                                 | NR                                                                                        | NR                                                                                         | NR                                                   | NR                            |
|                                                                                | Tip Pinch strength         | Pinch dynamometer            | Baseline<br>2 weeks<br>4 weeks<br>12 weeks<br>26 weeks                                                                 | NR                                                                                        | NR                                                                                         | NR                                                   | NR                            |
| <b>Intra-articular methylprednisolone acetate vs dextrose</b>                  |                            |                              |                                                                                                                        |                                                                                           |                                                                                            |                                                      |                               |
| Jahangiri (2014)<br>Iran                                                       | Pain intensity on pressure | VAS                          | Baseline<br>1 month<br>2 months<br>6 months                                                                            | 6.4 (1.8)<br>Around 2.8<br>Around 3.1<br>Around 3.5                                       | 6.7 (1.7)<br>Around 4.2<br>Around 2.9<br>Around 1.8                                        |                                                      | 0.56                          |
|                                                                                | Pain on joint movement     | VAS                          | Baseline<br>1 month<br>2 months<br>6 months                                                                            | 4.5 (1.6)<br><br>2.4 (1.8)                                                                | 5.0 (2.1)<br><br>1.2 (1.6)                                                                 | -0.7 (-1.8, 0.2)<br>1.0 (0.1, 2.0)<br>1.1 (0.2, 2.0) | 0.29<br>0.14<br>0.02<br>0.02  |
|                                                                                | Pain threshold to pressure | Fischer's pressure algometer | Baseline<br>1 month<br>2 months<br>6 months                                                                            |                                                                                           |                                                                                            |                                                      |                               |
|                                                                                | Pinch strength             | Hydraulic pinch gauge        | Baseline<br>1 month<br>2 months<br>6 months                                                                            | 11.6 (3.6)<br><br>12.7 (4.3)                                                              | 9.6 (3.4)<br><br>11.9 (3.4)                                                                | 2.9 (0.9, 4.9)<br>1.1 (-0.8, 3.1)<br>0.8 (-1.3, 2.9) | 0.03<br>0.005<br>0.25<br>0.45 |
|                                                                                | Hand function              | HAQ-DI                       | Baseline<br>1 month<br>2 months<br>6 months                                                                            | 4.37 (1.4)<br><br>2.6 (1.5)                                                               | 4.6 (1.8)<br><br>1.6 (1.3)                                                                 | 0.5 (-1.3, 0.2)<br>1.0 (0.2, 1.9)<br>1.0 (0.2, 1.8)  | 0.63<br>0.15<br>0.01<br>0.01  |
| <b>Intra-articular triamcinolone hexacetonide vs saline</b>                    |                            |                              |                                                                                                                        |                                                                                           |                                                                                            |                                                      |                               |
| Meenagh (2004) UK                                                              | Pain                       | VAS                          | Baseline<br>Changes from baseline at 4 weeks<br>Changes from baseline at 12 weeks<br>Changes from baseline at 24 weeks | 52 (40 to 72)<br>10.5 (-8.0 to 12.6)<br>3.5 (-8.5 to 4.9)<br>0.0 (-12.5 to 2.3)           | 56 (50 to 78)<br>18.5 (3.5 to 20.1)<br>23.3 (6.0 to 29.3)<br>14.0 (-12.5 to 16.9)          | NR                                                   |                               |
|                                                                                | Stiffness                  | In minutes                   | Baseline<br>Changes from baseline at 4 weeks<br>Changes from baseline at 12 weeks<br>Changes from baseline at 24 weeks | 20 (0 to 30)<br>0.0 (-5.0 to 2.5)<br>0.0 (-7.5 to 1.3)<br>0.0 (-7.5 to 1.0)               | 15 (10 to 30)<br>2.5 (0.0 to 3.0)<br>2.5 (-10.0 to 3.8)<br>5.0 (-5.0 to 8.5)               | NR                                                   |                               |
|                                                                                | Tenderness                 | Single fingertip pressure    | Baseline<br>Changes from baseline at 4 weeks<br>Changes from baseline at 12 weeks<br>Changes from baseline at 24 weeks | 2 (1 to 3)<br>0 (-1.0 to 0.9)<br>0.5 (-1.0 to 1.0)<br>0.5 (-1.5 to 1.0)                   | 2 (1 to 2)<br>1 (0.0 to 1.3)<br>2 (-1.5 to 3.1)<br>2.5 (-1.5 to 3.5)                       | NR                                                   |                               |
| <b>Ultrasonography guided intra-articular betamethasone vs hyaluronic acid</b> |                            |                              |                                                                                                                        |                                                                                           |                                                                                            |                                                      |                               |
| Monfort (2014)<br>Spain                                                        | Function                   | FIOHA                        | Baseline<br>Day 7<br>Day 14<br>Day 30<br>Day 90                                                                        | 11.5 [IQR 8-14]<br>-1 (-2 and -1)<br>-1 (-4 and -0)<br>-3 (-7.5 and -0)<br>-1 (-3 and -1) | 11.0 [IQR 7-14.7]<br>0 (-3 and -1)<br>-2 (-5 and -0)<br>-3 (-6.7 and -0)<br>-4 (-8 and -1) | NR                                                   | 0.814                         |

|                                                                            |                  |                          |          |                |                  |    |       |
|----------------------------------------------------------------------------|------------------|--------------------------|----------|----------------|------------------|----|-------|
|                                                                            |                  |                          | Day 180  | -1 (-3 and -3) | -3 (-8.7 and -1) |    |       |
|                                                                            | Pain             | VAS                      | Baseline | 6.4 (1.3)      | 6.0 (1.8)        | NR | 0.171 |
|                                                                            |                  |                          | Day 7    | -0.95 (1.60)   | -0.71 (1.66)     |    |       |
|                                                                            |                  |                          | Day 14   | -2.01 (1.84)   | -1.42 (2.23)     |    |       |
|                                                                            |                  |                          | Day 30   | -2.53 (2.26)   | -1.97 (2.62)     |    |       |
|                                                                            |                  |                          | Day 90   | -1.55 (2.14)   | -1.61 (2.53)     |    |       |
|                                                                            |                  |                          | Day 180  | -1.42 (2.35)   | -1.97 (2.73)     |    |       |
| <b>Intra-articular triamcinolone plus lidocaine vs lidocaine</b>           |                  |                          |          |                |                  |    |       |
| Spolidoro (2015) Brazil                                                    | Pain at rest     | VAS                      | Baseline | 6.1 (1.7)      | 6.1 (1.6)        | NR |       |
|                                                                            |                  |                          | Week 1   | 2.6 (2.9)      | 1.7 (2.7)        |    |       |
|                                                                            |                  |                          | Week 4   | 1.3 (2.1)      | 1.6 (2.6)        |    |       |
|                                                                            |                  |                          | Week 8   | 1.4 (2.6)      | 1.6 (2.6)        |    |       |
|                                                                            |                  |                          | Week 12  | 0.8 (1.7)      | 0.9 (2.2)        |    |       |
|                                                                            | Pain             | AUSCAN                   | Baseline | 8.8 (4.8)      | 9.2 (4.3)        | NR |       |
|                                                                            |                  |                          | Week 1   | 7.0 (4.6)      | 8.3 (5.1)        |    |       |
|                                                                            |                  |                          | Week 4   | 5.9 (4.9)      | 7.8 (5.4)        |    |       |
|                                                                            |                  |                          | Week 8   | 6.0 (4.9)      | 8.3 (4.5)        |    |       |
|                                                                            |                  |                          | Week 12  | 5.3 (4.7)      | 7.0 (4.8)        |    |       |
|                                                                            | Pain at movement | VAS                      | Baseline | 6.5 (1.8)      | 6.6 (1.4)        | NR |       |
|                                                                            |                  |                          | Week 1   | 3.9 (3.1)      | 4.1 (2.9)        |    |       |
|                                                                            |                  |                          | Week 4   | 2.8 (2.9)      | 3.0 (3.0)        |    |       |
|                                                                            |                  |                          | Week 8   | 1.8 (2.6)      | 4.0 (3.3)        |    |       |
|                                                                            |                  |                          | Week 12  | 2.2 (2.9)      | 4.0 (3.2)        |    |       |
|                                                                            | Swollen joint    | VAS (physician assessed) | Baseline | 3.0 (1.5)      | 3.0 (1.7)        | NR |       |
|                                                                            |                  |                          | Week 1   | 2.0 (1.5)      | 2.1 (1.4)        |    |       |
|                                                                            |                  |                          | Week 4   | 1.4 (1.4)      | 2.0 (1.2)        |    |       |
|                                                                            |                  |                          | Week 8   | 0.7 (0.8)      | 1.8 (1.3)        |    |       |
|                                                                            |                  |                          | Week 12  | 1.1 (1.2)      | 2.0 (1.3)        |    |       |
|                                                                            | Grip strength    | Jamar dynamometer        | Baseline | 14.85 (6.71)   | 13.68 (7.59)     | NR |       |
|                                                                            |                  |                          | Week 1   | 14.12 (6.56)   | 13.7 (7.79)      |    |       |
|                                                                            |                  |                          | Week 4   | 15.09 (6.57)   | 14.65 (7.78)     |    |       |
|                                                                            |                  |                          | Week 8   | 15.52 (7.33)   | 15.44 (7.58)     |    |       |
|                                                                            |                  |                          | Week 12  | 16.21 (6.24)   | 15.23 (7.70)     |    |       |
|                                                                            | Pinch strength   | Pinch gauge dynamometer  | Baseline | 6.12 (1.82)    | 5.79 (2.40)      | NR |       |
|                                                                            |                  |                          | Week 1   | 5.95 (1.84)    | 6.27 (1.86)      |    |       |
|                                                                            |                  |                          | Week 4   | 6.36 (1.61)    | 6.35 (2.11)      |    |       |
|                                                                            |                  |                          | Week 8   | 6.39 (1.98)    | 6.47 (1.64)      |    |       |
|                                                                            |                  |                          | Week 12  | 6.50 (1.88)    | 6.24 (1.75)      |    |       |
|                                                                            | Function         | AUSCAN                   | Baseline | 15.4 (10.4)    | 17.9 (8.9)       | NR |       |
|                                                                            |                  |                          | Week 1   | 14.6 (9.5)     | 17.8 (9.7)       |    |       |
|                                                                            |                  |                          | Week 4   | 12.9 (8.9)     | 15.9 (8.9)       |    |       |
|                                                                            |                  |                          | Week 8   | 12.7 (9.5)     | 15.8 (9.7)       |    |       |
|                                                                            |                  |                          | Week 12  | 12.3 (9.8)     | 16.7 (9.8)       |    |       |
|                                                                            | Stiffness        | AUSCAN                   | Baseline | 1.7 (1.4)      | 2.0 (1.5)        | NR |       |
|                                                                            |                  |                          | Week 1   | 1.1 (1.3)      | 1.5 (1.5)        |    |       |
|                                                                            |                  |                          | Week 4   | 1.2 (1.5)      | 1.8 (1.5)        |    |       |
|                                                                            |                  |                          | Week 8   | 1.6 (1.4)      | 1.9 (1.2)        |    |       |
|                                                                            |                  |                          | Week 12  | 1.2 (1.4)      | 2.0 (1.4)        |    |       |
|                                                                            | Total            | AUSCAN GLOBAL            | Baseline | 25.9 (15.1)    | 29.1 (13.4)      | NR |       |
|                                                                            |                  |                          | Week 1   | 22.7 (13.8)    | 27.5 (15.2)      |    |       |
|                                                                            |                  |                          | Week 4   | 20.0 (13.9)    | 25.5 (14.0)      |    |       |
|                                                                            |                  |                          | Week 8   | 20.3 (14.6)    | 26.0 (14.0)      |    |       |
|                                                                            |                  |                          | Week 12  | 18.8 (14.1)    | 25.7 (14.4)      |    |       |
| <b>Intra-articular depot methylprednisolone acetate vs hyaluronic acid</b> |                  |                          |          |                |                  |    |       |
| Stahl (2005) Israel                                                        | Pain at rest     | VAS                      | Baseline | 4.2 (2.2-6.4)  | 4.5 (2.4-6.8)    |    |       |
|                                                                            |                  |                          | Month 1  | -1.8±2.0       | -2.2±2.0         | NR |       |
|                                                                            |                  |                          | Month 3  | -1.9±1.8       | -2.0±2.0         |    |       |
|                                                                            |                  |                          | Month 6  | -2.2±2.0       | -2.2±2.1         |    |       |
|                                                                            | Pain at rest     | VAS                      | Baseline | 4.2 (2.2-6.4)  | 4.5 (2.4-6.8)    | NR |       |
|                                                                            |                  |                          | Month 1  | 2 (0.2-4)      | 3 (0.8-5.2)      |    |       |
|                                                                            |                  |                          | Month 3  | 2.1 (0-4.5)#   | 2.5 (0.1-5)      |    |       |
|                                                                            |                  |                          | Month 6  | 2 (0.1-4)      | 2.2 (0.2-4.5)    |    |       |
|                                                                            | Pain at activity | VAS                      | Baseline | 7.7            | 7.9              | NR |       |
|                                                                            |                  |                          | Month 1  | -2.0±2.3       | -1.9±1.8         |    |       |
|                                                                            |                  |                          | Month 3  | -2.5±2.0       | -2.2±1.8         |    |       |
|                                                                            |                  |                          | Month 6  | -2.7±2.2       | -2.2±1.9         |    |       |
|                                                                            | Grip strength    | Grasp dynamometer        | Baseline | 19.8 (avg)     | 19.7             | NR |       |
|                                                                            |                  |                          | Month 1  | 20.3           | 19.8             |    |       |
|                                                                            |                  |                          | Month 3  | 20.9           | 20.6             |    |       |
|                                                                            |                  |                          | Month 6  | 21.3           | 21.1             |    |       |

|                                                              |                          |                            |                                                                                  |                                                                                                                             |                                                                                                                           |    |        |
|--------------------------------------------------------------|--------------------------|----------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----|--------|
|                                                              | Pinch strength (lateral) | pinch dynamometer          | Baseline<br>Month 1<br>Month 3<br>Month 6                                        | 5.4<br>5.7<br>5.7<br>5.8                                                                                                    | 5.2<br>5.4<br>5.5<br>5.7                                                                                                  | NR |        |
| <b>Intra-articular betamethasone vs hyaluronic acid</b>      |                          |                            |                                                                                  |                                                                                                                             |                                                                                                                           |    |        |
| Sabaah (2020)a<br>Egypt                                      | Tenderness grading       |                            | Baseline<br>1<br>2<br>3<br>Month 1<br>0<br>1<br>2<br>Month 3<br>0<br>1<br>2<br>3 | 3 (20%)<br>9 (60%)<br>3 (20%)<br><br>9 (60%)<br>5 (33.3%)<br>1 (6.7%)<br><br>1 (6.7%)<br>5 (33.3%)<br>8 (53.3%)<br>1 (6.7%) | 3 (20%)<br>10 (66.7%)<br>2 (13.3%)<br><br>6 (40%)<br>9 (60%)<br>0 (0%)<br><br>12 (80%)<br>2 (13.3%)<br>1 (6.7%)<br>0 (0%) | NR |        |
|                                                              | Pain                     | VAS                        | Baseline<br>Month 1<br>Month 3                                                   | 7 (IQR 6-8)<br>4 (3-5)<br>5 (5-8)                                                                                           | 7 (5-8)<br>4 (3-5)<br>3 (2-3)                                                                                             | NR | <0.001 |
|                                                              | Total score              | AUSCAN                     | Baseline<br>Month 1<br>Month 3                                                   | 33 (29-35)<br>25 (21-26)<br>33 (28-33)#                                                                                     | 33 (26-39)<br>22 (18-26)<br>20 (17-23)#                                                                                   | NR |        |
|                                                              | Functional score         | AUSCAN functional subscale | Baseline<br>Month 1<br>Month 3                                                   | 22 (20-25)<br>16 (14-20)<br>22 (20-23)                                                                                      | 23 (20-25)<br>16 (14-18)<br>14 (12-16)                                                                                    | NR |        |
|                                                              | Grip strength            | Digital hand dynamometer   | Baseline<br>Month 1<br>Month 3                                                   | 15#<br>21#<br>16#                                                                                                           | 15#<br>23#<br>26#                                                                                                         | NR |        |
|                                                              | Pinch strength           | Digital hand dynamometer   | Baseline<br>Month 1<br>Month 3                                                   | 3.7#<br>5.5#<br>3.7#                                                                                                        | 3.2#<br>5.6#<br>6.5#                                                                                                      | NR |        |
|                                                              | Grind test               |                            | Baseline<br>Month 1<br>Month 3                                                   | NR                                                                                                                          | NR                                                                                                                        |    |        |
|                                                              | Lever test               |                            | Baseline<br>Month 1<br>Month 3                                                   | NR                                                                                                                          | NR                                                                                                                        |    |        |
| <b>Intra-articular betamethasone vs platelet-rich plasma</b> |                          |                            |                                                                                  |                                                                                                                             |                                                                                                                           |    |        |
| Sabaah (2020)b<br>Egypt                                      | Tenderness grading       |                            | Baseline<br>1<br>2<br>3<br>Month 1<br>0<br>1<br>2<br>Month 3<br>0<br>1<br>2<br>3 | 3 (20%)<br>9 (60%)<br>3 (20%)<br><br>9 (60%)<br>5 (33.3%)<br>1 (6.7%)<br><br>1 (6.7%)<br>5 (33.3%)<br>8 (53.3%)<br>1 (6.7%) | 5 (33%)<br>7 (46.7%)<br>3 (20%)<br><br>10 (66.7%)<br>4 (26.7%)<br>1 (6.7%)<br><br>0 (0%)<br>6 (40%)<br>9 (60%)<br>0 (0%)  | NR |        |
|                                                              | Pain                     | VAS                        | Baseline<br>Month 1<br>Month 3                                                   | 7 (IQR 6-8)<br>4 (3-5)<br>5 (5-8)                                                                                           | 8 (6-8)<br>4 (3-5)<br>5 (4-6)                                                                                             | NR | 0.058  |
|                                                              | Total score              | AUSCAN                     | Baseline<br>Month 1<br>Month 3                                                   | 33 (29-35)<br>25 (21-26)<br>33 (28-33)#                                                                                     | 35 (32-37)<br>28 (26-30)<br>26 (25-28)#                                                                                   | NR |        |
|                                                              | Functional score         | AUSCAN functional subscale | Baseline<br>Month 1<br>Month 3                                                   | 22 (20-25)<br>16 (14-20)<br>22 (20-23)                                                                                      | 24 (22-25)<br>20 (18-20)<br>21 (18-22)                                                                                    | NR |        |
|                                                              | Grip strength            | Digital hand dynamometer   | Baseline<br>Month 1<br>Month 3                                                   | 15#<br>21#<br>16#                                                                                                           | 16#<br>17#<br>16#                                                                                                         | NR |        |
|                                                              | Pinch strength           | Digital hand dynamometer   | Baseline<br>Month 1<br>Month 3                                                   | 3.7#<br>5.5#<br>3.7#                                                                                                        | 4.2#<br>4.4#<br>4.3#                                                                                                      | NR |        |
|                                                              | Grind test               |                            | Baseline<br>Month 1                                                              | NR                                                                                                                          | NR                                                                                                                        |    |        |

|  |            |  |                                |    |    |  |  |
|--|------------|--|--------------------------------|----|----|--|--|
|  |            |  | Month 3                        |    |    |  |  |
|  | Lever test |  | Baseline<br>Month 1<br>Month 3 | NR | NR |  |  |

#derived from graph; VAS: visual analogue scale; AUSCAN: Australian Canadian Osteoarthritis Hand Index; HAQ-DI: Health Assessment Questionnaire Disability Index Questionnaire; FIHOA: Functional Index for Hand Osteoarthritis; MHQ: Michigan Hand Outcome Questionnaire; Q-DASH: Quick Disabilities of the Arm, Shoulder and Hand questionnaire; NR: not reported; NA: Not applicable; Sabaah 2020(a): corticosteroid vs hyaluronic acid; Sabaah 2020(b) corticosteroid vs plasma-rich plasma; MD: mean difference; CI: confidence interval; OR: odds ratio; RR: risk ratio

**Supplementary Table 4. Search of clinical trial registers and registries for trials with Completed or Unknown status that are not published**

| Identifier     | Title                                                                                                                                                | Status    | Actual/estimated completion date |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------|
| NCT03102788    | Task Shifting in the care for patients with hand Osteoarthritis                                                                                      | Completed | November 2020                    |
| NCT00398866    | A Study of Hyaluronan for the Treatment of Osteoarthritis in the Thumb                                                                               | Completed | March 2013                       |
| ISRCTN63038599 | Comparing sodium hyaluronate injection into the carpo-metacarpal joint of the thumb with steroid in the treatment of carpo-metacarpal osteoarthritis | Completed | June 2005                        |

**Supplementary Table 5. Rob Me assessment for random effect meta-analysis of the effect of oral corticosteroid vs placebo on pain at short term (4-6 weeks)**

| Details of the synthesis being assessed for risk of bias                                                                                                                                                                                                   |                                                                                                               |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------|
| Specify the synthesis                                                                                                                                                                                                                                      | Random effect meta-analysis of the effect of oral corticosteroid vs placebo on pain at short term (4-6 weeks) |                                  |
| Specify the synthesized result (e.g. estimate and 95% CI)                                                                                                                                                                                                  | -0.53 (-0.79 to -0.28)                                                                                        |                                  |
| Specify the number of included studies and participants                                                                                                                                                                                                    | 3, 245                                                                                                        |                                  |
| Risk of bias assessment                                                                                                                                                                                                                                    |                                                                                                               |                                  |
| Signalling questions                                                                                                                                                                                                                                       | Comments                                                                                                      | Response options                 |
| <i>The following questions relate to the within-study assessment of non-reporting bias ('known unknowns')</i>                                                                                                                                              |                                                                                                               |                                  |
| 4.1. Of the studies identified, was there any for which no result was available for inclusion in the synthesis, likely because of the P value, magnitude or direction of the result generated (refer to Step 2)?                                           | N                                                                                                             | Y / <u>N</u>                     |
| 4.2. <u>If Y to 4.1:</u> Is it likely that there would be a notable change to the synthesized effect estimate if the omitted results had been included?                                                                                                    |                                                                                                               | NA / Y / PY / <u>PN</u> / N / NI |
| 4.3. Of the studies identified, was there any for which it was unclear whether an eligible result was generated (refer to Step 2)?                                                                                                                         | N (3 studies evaluating oral corticosteroid has result for pain at 4-6 weeks)                                 | Y / <u>N</u>                     |
| 4.4. <u>If Y to 4.3:</u> Is it likely that there would be a notable change to the synthesized effect estimate if the potentially omitted results had been included?                                                                                        |                                                                                                               | NA / Y / PY / <u>PN</u> / N / NI |
| <i>The following questions relate to the across-study assessment of non-reporting bias ('unknown unknowns')</i>                                                                                                                                            |                                                                                                               |                                  |
| 4.5 Do circumstances indicate potential for some eligible studies not being identified because of the P value, magnitude or direction of the results generated (refer to Step 3)?                                                                          | Y                                                                                                             | Y / PY / <u>PN</u> / N           |
| 4.6. <u>If Y/PY to 4.5:</u> Is it likely that studies not identified had results that were eligible for inclusion in the synthesis?                                                                                                                        | PY                                                                                                            | NA / Y / PY / <u>PN</u> / N      |
| 4.7. <u>If Y to 4.1 or 4.3 or Y/PY to 4.5:</u> Does the pattern of observed study results suggest that the synthesis is likely to be missing results that were systematically different (in terms of P value, magnitude or direction) from those observed? | N ((as they all do not have statistically significant results)                                                | NA / Y / PY / <u>PN</u> / N      |

|                                                                                                                                                    |               |                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------|
| 4.8. <u>If Y/PY/NI to 4.2, 4.4, 4.6 or 4.7:</u><br>Did sensitivity analyses suggest that the synthesized result was biased due to missing results? | PN            | NA / Y / PY / <u>PN</u> / N                                                                    |
| Risk of bias judgement                                                                                                                             | Some concerns | Low / High / Some concerns                                                                     |
| Optional: What is the predicted direction of bias for this synthesis?                                                                              |               | NA / Favours experimental / Favours comparator / Towards null / Away from null / Unpredictable |

**Supplementary Table 6. Rob Me assessment for random effect meta-analysis of the effect of intra-articular corticosteroid vs placebo on pain at short term (4-6 weeks)**

| Details of the synthesis being assessed for risk of bias                                                                                                                                                                                            |                                                                                                             |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Specify the synthesis                                                                                                                                                                                                                               | Random effect meta-analysis of the effect of IA corticosteroid vs placebo on pain at short term (4-6 weeks) |                                         |
| Specify the synthesized result (e.g. estimate and 95% CI)                                                                                                                                                                                           | 0.22 (-1.17 to 1.61)                                                                                        |                                         |
| Specify the number of included studies and participants                                                                                                                                                                                             | 4, 189                                                                                                      |                                         |
| Risk of bias assessment                                                                                                                                                                                                                             |                                                                                                             |                                         |
| Signalling questions                                                                                                                                                                                                                                | Comments                                                                                                    | Response options                        |
| <i>The following questions relate to the within-study assessment of non-reporting bias ('known unknowns')</i>                                                                                                                                       |                                                                                                             |                                         |
| 4.1. Of the studies identified, was there any for which no result was available for inclusion in the synthesis, likely because of the P value, magnitude or direction of the result generated (refer to Step 2)?                                    | N                                                                                                           | Y / <u>N</u>                            |
| 4.2. If Y to 4.1: Is it likely that there would be a notable change to the synthesized effect estimate if the omitted results had been included?                                                                                                    |                                                                                                             | NA / Y / PY / <u>PN</u> / <u>N</u> / NI |
| 4.3. Of the studies identified, was there any for which it was unclear whether an eligible result was generated (refer to Step 2)?                                                                                                                  | Y (one NI regarding protocol)                                                                               | Y / <u>N</u>                            |
| 4.4. If Y to 4.3: Is it likely that there would be a notable change to the synthesized effect estimate if the potentially omitted results had been included?                                                                                        | PN (single study with 33 participants so less chance to influence result)                                   | NA / Y / PY / <u>PN</u> / <u>N</u> / NI |
| <i>The following questions relate to the across-study assessment of non-reporting bias ('unknown unknowns')</i>                                                                                                                                     |                                                                                                             |                                         |
| 4.5 Do circumstances indicate potential for some eligible studies not being identified because of the P value, magnitude or direction of the results generated (refer to Step 3)?                                                                   | Y                                                                                                           | Y / PY / <u>PN</u> / <u>N</u>           |
| 4.6. If Y/PY to 4.5: Is it likely that studies not identified had results that were eligible for inclusion in the synthesis?                                                                                                                        | PY                                                                                                          | NA / Y / PY / <u>PN</u> / <u>N</u>      |
| 4.7. If Y to 4.1 or 4.3 or Y/PY to 4.5: Does the pattern of observed study results suggest that the synthesis is likely to be missing results that were systematically different (in terms of P value, magnitude or direction) from those observed? | N (as they all do not have statistically significant results)                                               | NA / Y / PY / <u>PN</u> / <u>N</u>      |
| 4.8. If Y/PY/NI to 4.2, 4.4, 4.6 or 4.7: Did sensitivity analyses suggest that the synthesized result was biased due to missing results?                                                                                                            | PN                                                                                                          | NA / Y / PY / <u>PN</u> / <u>N</u>      |
| Risk of bias judgement                                                                                                                                                                                                                              | Some concerns                                                                                               | Low / High / Some concerns              |

|                                                                       |  |                                                                                                |
|-----------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------|
| Optional: What is the predicted direction of bias for this synthesis? |  | NA / Favours experimental / Favours comparator / Towards null / Away from null / Unpredictable |
|-----------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------|

**Supplementary Table 7. GRADE assessment for random effect meta-analysis of the effect of oral corticosteroid vs placebo on pain at short term (4-6 weeks)**

|  | Risk of bias                                  | Indirectness                                                   | Inconsistency                                | Imprecision                                                          | Reporting bias                                    | Score     | Grade rating |
|--|-----------------------------------------------|----------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------|-----------|--------------|
|  | Are there limitations with the study methods? | Do the results not really apply to my question?                | Are the results inconsistent across studies? | Are there too few people or events?                                  | Are we missing studies or have selective studies? | Total 4   |              |
|  | Serious (-1)                                  | none                                                           | Serious (-1)                                 | serious (-1)                                                         | Not serious                                       | 4-1-1-1=1 | low          |
|  | (as one study high risk with 30% weight)      | -similar to our question<br>-similar to our inclusion criteria | I <sup>2</sup> = 73%                         | (too few participants 245 in total and CI same side (-0.79 to -0.28) | Some concern in –ROB-ME                           |           |              |

**Supplementary Table 8. GRADE assessment for random effect meta-analysis of the effect of intra-articular corticosteroid vs placebo on pain at short term (4-6 weeks)**

|  | Risk of bias                                  | Indirectness                                                   | Inconsistency                                | Imprecision                                                                                          | Reporting bias                                    | Score     | Grade rating |
|--|-----------------------------------------------|----------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------|--------------|
|  | Are there limitations with the study methods? | Do the results not really apply to my question?                | Are the results inconsistent across studies? | Are there too few people or events?                                                                  | Are we missing studies or have selective studies? |           |              |
|  | Serious (-1)                                  | none                                                           | Serious (-1)                                 | serious (-1)                                                                                         | Not serious                                       | 4-1-1-1=1 | low          |
|  | One with 14% high risk<br>Rest 2: low risk    | -similar to our question<br>-similar to our inclusion criteria | I <sup>2</sup> =78%                          | (too few participants 159 in total and CI same side -1.34 to -0.11) and not between harm and benefit | Some concern in ROB-ME assessment                 |           |              |

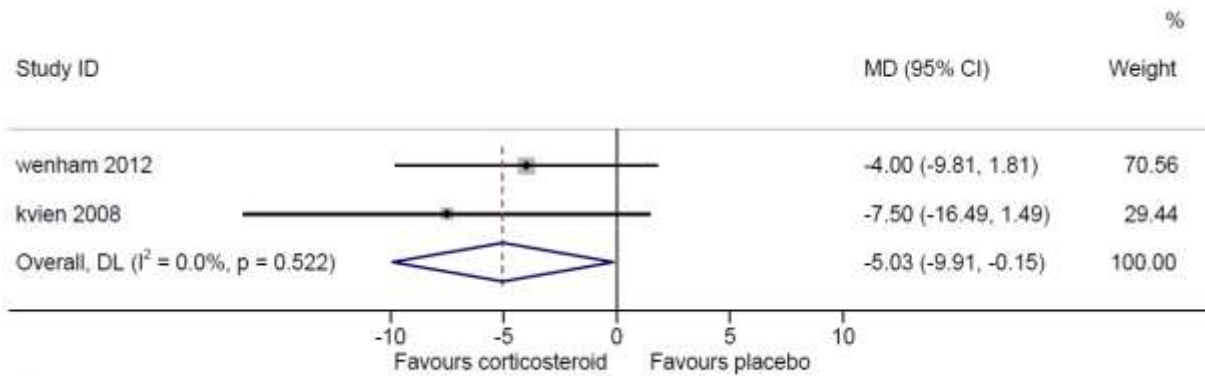
**Supplementary Figure 1. Risk of bias assessment using RoB 2 tool considering patient reported pain and functional outcome**

|       |                | Risk of bias domains |    |    |    |    |         |
|-------|----------------|----------------------|----|----|----|----|---------|
|       |                | D1                   | D2 | D3 | D4 | D5 | Overall |
| Study | Sabah 2020     | ⊖                    | ⊖  | ⊕  | ⊖  | ⊖  | ⊖       |
|       | Kroon 2019     | ⊕                    | ⊕  | ⊕  | ⊕  | ⊕  | ⊕       |
|       | Malahias 2018  | ⊕                    | ⊕  | ⊕  | ⊖  | ⊖  | ⊖       |
|       | Monfort 2015   | ⊖                    | ⊕  | ⊕  | ⊖  | ⊖  | ⊖       |
|       | Spolidoro 2015 | ⊕                    | ⊕  | ⊕  | ⊕  | ⊕  | ⊕       |
|       | Jahangiri 2014 | ⊕                    | ⊕  | ⊕  | ⊕  | ⊕  | ⊕       |
|       | Wenham 2012    | ⊕                    | ⊕  | ⊕  | ⊕  | ⊕  | ⊕       |
|       | Bahadir 2008   | ⊖                    | ⊗  | ⊖  | ⊖  | ⊖  | ⊗       |
|       | Heyworth 2008  | ⊕                    | ⊕  | ⊖  | ⊕  | ⊖  | ⊖       |
|       | Kvien 2008     | ⊖                    | ⊖  | ⊗  | ⊕  | ⊖  | ⊗       |
|       | Fuchs 2006     | ⊖                    | ⊕  | ⊕  | ⊖  | ⊖  | ⊖       |
|       | Stahl 2005     | ⊖                    | ⊗  | ⊖  | ⊗  | ⊖  | ⊗       |
|       | Meenagh 2004   | ⊕                    | ⊕  | ⊕  | ⊕  | ⊖  | ⊖       |

Domains:  
D1: Bias arising from the randomization process.  
D2: Bias due to deviations from intended intervention.  
D3: Bias due to missing outcome data.  
D4: Bias in measurement of the outcome.  
D5: Bias in selection of the reported result.

Judgement  
⊗ High  
⊖ Some concerns  
⊕ Low

Supplementary Figure 2. Random effects meta-analysis of the standard mean difference in stiffness, based on oral corticosteroid or placebo at 4-6 weeks



NOTE: Weights are from random-effects model