

**Supplementary Table 2: Expanded characteristics of studies included in the review**

| First author   | Country      | Study type                          | Definition and average length of chronic pain | Included sample size* | Age (measure of central tendency, range, and measure of variance (SD)) | Sex                   | Primary condition described as resulting in chronic lower limb pain | Location(s) of pain in the lower limb |
|----------------|--------------|-------------------------------------|---|-----------------------|--|-----------------------|---|---------------------------------------|
| Abdullah       | Malaysia     | Case report                         | Pain (>2 years)                               | 1                     | 17 years   | Male                  | Pachydermoperiostosis   | Knee, Ankle                           |
| Abe            | Japan        | Case report                         | Chronic (3months or longer)                   | 1                     | 14 years   | Female                | Tarsal navicular stress fracture                                    | Foot                                  |
| Abiodun        | Ukraine      | Cross-sectional                     | Chronic (3 years)                             | 84                    | 2-18 years   | 51 Female<br>33 Male  | Juvenile idiopathic arthritis                                       | Hip, Knee, Ankle                      |
| Abousamra      | USA          | Cross-sectional                     | Chronic (at least 1-year post op)             | 13                    | 3-15 years   | 6 Female<br>4 Male    | Hip instability   | Hip                                   |
| Abramowicz     | USA          | Cross-sectional retrospective       | Average 4.6 years                             | 65                    | Mean 11.7 (SD 3.8)   | 48 Female<br>17 Male  | Systemic Arthritis ( , psoriatic arthritis, enthesitis)             | Knee, Ankle                           |
| Abushhaiwia    | Libya        | Case report                         | Chronic pain >3 years                         | 1                     | 14 years   | Male                  | Chronic recurrent multifocal osteomyelitis                          | Leg                                   |
| Accabled       | France       | Case report                         | Pain >2 years                                 | 1                     | 13 years   | Male                  | Post - surgical Subtotal lateral meniscectomy                       | Knee                                  |
| Adba           | Qatar        | Case report                         | Chronic Pain (>1 year)                        | 2                     | 3 and 6  | Male                  | Juvenile idiopathic arthritis                                       | Knee                                  |
| Adiguzel       | Turkey       | Case report                         | 8 months                                      | 1                     | 14 years   | Female                | Traumatic brain injury (heterotrophic ossification associated)      | Knee                                  |
| Agarwal (2015) | India        | Case report                         | Pain 4 months                                 | 1                     | 15 years   | Male                  | Juvenile-onset ankylosing spondylitis                               | Hip                                   |
| Agrawal (2018) | India        | Case report                         | Pain (>6 months)                              | 1                     | 13 years   | Male                  | Pachydermoperiostosis   | Hip/knee/Large joints                 |
| Aiyer          | India        | Case report                         | Pain for 3 months                             | 1                     | 14 years   | Female                | Hip Dysplasia / Tuberculous infection                               | Hip                                   |
| Alkadumi       | USA          | Case report                         | Pain >12months                                | 1                     | 16 years   | Male                  | Chondroblastoma   | Knee                                  |
| Allessandrella | Spain        | Case report                         | Chronic (5 years)                             | 1                     | 17 years   | Male                  | Pachydermoperiostosis (genetic)                                     | Knee, Ankle                           |
| Alpigiana      | Italy        | Case report                         | Chronic (>1 year)                             | 1                     | 15 years   | Male                  | Juvenile idiopathic arthritis                                       | Hip                                   |
| Alqanatish     | Saudi Arabia | Case report                         | Chronic pain (>3 months)                      | 1                     | 12 years   | Male                  | Scurvy  | Lower limb                            |
| Anderson       | Switzerland  | Case series                         | Chronic (Undefined)                           | 4*                    | Mean 16.3 years  | 4 Female              | Pseudotumor   | Ankle                                 |
| Andias         | Portugal     | Cross-sectional                     | Chronic (3months or longer)                   | 1249*                 | Mean 16.4 years  | 819 Female            | Musculoskeletal pain  | Lower Limb/multiregional              |
| Andreucci      | Denmark      | Cross-sectional secondary analysis  | Chronic Pain (undefined)                      | 323                   | Mean 14.4  | 237 Female<br>86 Male | Patellofemoral pain and Osgood-Schlatter disease                    | Knee                                  |
| Anghelescu     | USA          | Retrospective review                | Pain (>6 months)                              | 129*                  | Mean 14 years (range 6-21)   | 63 Female             | Post surgical pain  | Thigh, shin                           |
| Arici          | Turkey       | Case report                         | Chronic (3 months or longer)                  | 1                     | 11 years   | Female                | Chronic recurrent multifocal osteomyelitis                          | Legs                                  |
| Assafiri       | USA          | Case report                         | Pain (>3 months)                              | 1                     | 13 years   | Male                  | Osteoid osteoma   | Ankle                                 |
| Auvinen        | Finland      | Cohort (two year follow up)         | Pain in last 6 months                         | 86*                   | 15-18 years  | 43 Female<br>43 Male  | Musculoskeletal pain  | Knee, Ankle                           |
| Awan           | USA          | Case report                         | Chronic (6 months)                            | 1                     | 17 years   | Male                  | Cuboid-navicular coalition  | Foot                                  |
| Azabagic       | Bosnia       | Longitudinal study                  | Chronic pain (>1 year)                        | 310                   | Mean 11.3 years (range 7-14)   | NR                    | Musculoskeletal pain  | Knee, Ankle                           |
| Baghdadi       | Iran         | Retrospective medical record review | Chronic pain (>1 year)                        | 13                    | 1-18 years of age  | 7 Female<br>6 Male    | Septic Arthritis  | Hip                                   |
| Baima          | USA          | Case report                         | Chronic pain (>3 months)                      | 1                     | 6 years  | Male                  | Prosthesis-related pain (post chopart amp)                          | Knee, Ankle                           |

|                       |           |                               |   |      |                                   |                      |   |   |
|-----------------------|-----------|-------------------------------|---|------|-----------------------------------|----------------------|---|---|
| Bakkaloglu            | Turkey    | Case report                   | Persistent pain 8 months                              | 1    | 8 years                           | Female               | Familial Mediterranean fever arthritis  | Knee                                      |
| Banskota              | Nepal     | Retrospective case series     | Pain (>12 months)                                     | 30   | Mean 8.5 years (range 2-16)       | 9 Female<br>21 Male  | Traumatic hip dislocation   | Hip                                       |
| Barfield              | USA       | Case report                   | Chronic pain (no time frame mentioned)                | 1    | 17 years                          | Female               | Celiac disease  | Achillies tendon/bilateral thigh and calf |
| Bari                  | Pakistan  | Case report                   | Pain (condition gradually worsened over a few months) | 1    | 4 years                           | Female               | Scurvy  | Lower limbs                               |
| Barut                 | Turkey    | Cross-sectional observational | Chronic   | 168  | 16 years (IQR 9)                  | 87 Female<br>81 Male | Juvenile idiopathic arthritis   | Hip, Knee, Ankle, Foot                    |
| Bauer                 | France    | Case series                   | Chronic pain (15 months)                              | 1*   | 16 years                          | Male                 | Impingement from bimalleolar fracture   | Ankle                                     |
| Baydogan (2012, 2015) | Turkey    | RCT                           | Chronic pain (no definition provided)                 | 30   | 9.3 (1.4) years<br>6-18 years     | 21 Female<br>9 Male  | Juvenile idiopathic arthritis   | Knee                                      |
| Bazette-Jones         | USA       | Cross sectional survey        | Pain frequency (ranges from daily to rarely)          | 437* | 10-18 years                       | NR                   | Musculoskeletal pain  | Hip, Knee, Ankle                          |
| Behzadi               | Norway    | Case report                   | > 2 years   | 1    | 14                                | Female               | Ischiofemoral impingement   | Hip                                       |
| Belke                 | Germany   | Case report                   | Chronic (at least 3 months)                           | 1    | 12 years                          | Male                 | Rhabdomyolysis (diabetic ketoacidosis)  | Lower leg, Foot                           |
| Benaroch              | USA       | Case series                   | > 6 years   | 7*   | 15.5 years                        | Male                 | Post operative pain   | Knee                                      |
| BenEliyahu            | USA       | Case report                   | Chronic (Undefined)                                   | 1    | 17 years                          | Female               | Exertional compartment syndrome   | Calf                                      |
| Berend                | USA       | Case series                   | Chronic pain (>3 months)                              | 8    | 14.9 years                        | NR                   | Legg-calve-perthes-disease  | Hip                                       |
| Bettin                | Germany   | Case report                   | Persistent pain                                       | 1    | 12 years                          | Male                 | Femoral neck stress fracture  | Hip                                       |
| Bica                  | Brazil    | Case report                   | Chronic pain (>1 year)                                | 1    | 10 years                          | Male                 | Femoral osteochondrosis   | Knee                                      |
| Biddeci               | Italy     | Cross-sectional observational | Persistent pain (Undefined)                           | 19*  | 10+ years (all paediatric)        | 10 Female<br>9 Male  | Avascular osteonecrosis secondary to treatment for acute lymphoblastic leukaemia  | Hip, Knee, Ankle                          |
| Black                 | USA       | Secondary analysis            | Chronic pain (Undefined)                              | 36   | Range 12-18 years                 | Female               | Juvenile Fibromyalgia and Joint hypermobility   | Hip, Knee, Ankle                          |
| Blackman              | USA       | Retrospective case series     | Persistent pain (Undefined)                           | 71   | Mean 15.5 years (range 11.7-19.8) | 66 Female<br>5 Male  | Medial patellofemoral ligament  | Knee                                      |
| Blatnik               | USA       | Case report                   | Persistent pain (Undefined)                           | 1    | 12 years                          | Female               | Bilateral distal femur salter-harris type I fracture / persistent osgood-schlatter disease  | Knee                                      |
| Bloch                 | USA       | Case report                   | Chronic (Undefined)                                   | 1    | 2 years                           | Male                 | Recurrent cervical lymphadenopathy  | Bilateral leg                             |
| Bloomfield            | USA       | Case report                   | Chronic (>6 years)                                    | 1    | 13 years                          | Female               | Periosteal tumour   | Lower Limb                                |
| Bonfiglio             | USA       | Case report                   | Chronic pain  | 1    | 13 years                          | Female               | Pyogenic bone abscess / osteomyelitis (brodies abscess)   | Ankle                                     |
| Boulter               | Australia | Retrospective medical review  | Chronic pain (>3 months)                              | 26   | 3-17 years                        | 14 Female<br>12 Male | Cystic fibrosis, reactive arthropathy, widespread musculoskeletal pain, chondromalacia patellae osteochondrosis, osteonecrosis, osteochondritis dissecans | Lower limb                                |

|                 |              |                                     |                               |      |                              |                                    |  |                         |
|-----------------|--------------|-------------------------------------|-------------------------------|------|------------------------------|------------------------------------|--|-------------------------|
| Bout-tabaku     | Qatar        | Prospective cohort                  | Chronic pain                  | 219  | Mean 17 years (SD 1.6 years) | 167 Female<br>52 Male              | Musculoskeletal pain   | Hip, Knee, Ankle, Feet  |
| Boyer           | USA          | Retrospective cohort                | Chronic (at least 9 months)   | 86   | 10 years (range 4-17 years)  | 41 Female<br>45 Male               | Cerebral palsy (post operative)                                    | Hip, Knee, Ankle, Feet  |
| Brandao         | Portugal     | Retrospective cohort                | Chronic pain (.3 months)      | 143* | 13 years                     | 67 Female<br>76 Male               | Musculoskeletal pain   | Lower limb              |
| Brix            | Denmark      | Retrospective cohort                | Chronic pain (Undefined)      | 53*  | 3-10 years of age            | 30 Female<br>23 Male               | Acute lymphoblastic leukaemia                                      | Hip, Knee, Ankle        |
| Brizini         | China        | Case report                         | Persistent pain (>3 months)   | 1    | 13 years                     | Male                               | Slipped capital femoral epiphysis / FGFR TKI inhibitor             | Knee                    |
| Broström        | Sweden       | Cross-sectional observational study | Chronic pain (>1 year)        | 18   | Mean 10 years (SD 3.1)       | 15 Female<br>3 Male                | Juvenile idiopathic arthritis                                      | Hip, Knee, Ankle        |
| Bueso           | USA          | Case report                         | Chronic pain (>6 months)      | 1    | 7 years                      | Male                               | Juvenile idiopathic arthritis                                      | Knee                    |
| Buoncrisiani    | USA          | Case series                         | Chronic pain                  | 8    | 3-10 years                   | 3 Female<br>2 Male                 | Injury to tarsometatarsal joint                                    | Foot                    |
| Burgos-Vargas   | Mexico       | Secondary analysis of RCT           | Chronic pain (mean 4.2 years) | 33   | 11 years                     | 6 Female<br>27 Male                | Enthesopathy due to spondyloarthropathy                            | Hip, Knee, Ankle        |
| Busconia        | USA          | Case report                         | Chronic pain (Undefined)      | 10*  | 13 years (range 10-17)       | 6 Female<br>4 Male                 | Chronic ankle instability  | Ankle                   |
| Caldonazzi      | Italy        | Cross-sectional observational study | Persistent pain (Undefined)   | 7    | Mean 11 years                | 6 Female<br>1 Male                 | Vitamin D deficiency   | Foot                    |
| Cappuccio       | Italy        | Case report                         | Chronic pain                  | 1    | 10 years                     | Female                             | PIK3CA-related disorder (genetic)                                  | Lower limb              |
| Carozza         | Australia    | Cross-sectional                     | Chronic pain (>3months)       | 27   | Mean 13.7                    | 16 Female<br>8 Male                | Cerebral palsy   | Hips, knee, ankle, foot |
| Castle          | Australia    | Phenomenological study              | Chronic pain (>3months)       | 4*   | Mean 17.6 years              | 4 Male                             | Cerebral palsy   | Hip                     |
| Catli (2011)    | Turkey       | Case report                         | Pain for 6 months             | 1    | 8 years                      | Female                             | Osteopetrosis tarda  | Ankle                   |
| Catli (2022)    | Turkey       | Case report                         | Chronic pain (Undefined)      | 1    | 26 months                    | Female                             | Hypophosphatasia   | Legs                    |
| Ceglie          | Italy        | Case report                         | Chronic pain (>7 months)      | 1*   | 4.5 years                    | Male                               | Scurvy   | Leg                     |
| Ceroni          | Switzerland  | Case report                         | Chronic pain (Undefined)      | 1    | 13 years                     | Female                             | Accessory ossicle of foot  | Ankle                   |
| Champion (2020) | Australia    | Cross-sectional questionnaire       | Chronic (3 months or longer)  | 104* | 3-18 years                   | NR                                 | Restless leg syndrome  | Leg                     |
| Champion (2022) | Australia    | Cross-sectional                     | Persistent pain (undefined)   | 857* | Mean 10.5 years              | NR                                 | Growing pains  | Lower Limb              |
| Chang           | Taiwan       | Case report                         | Persistent pain (>2 months)   | 1    | 14 years                     | Male                               | Juvenile idiopathic arthritis                                      | Hip                     |
| Chaturvedi      | India        | Retrospective medical record review | Chronic pain (Undefined)      | 17*  | 4-14 years                   | 14 Female<br>5 Male (whole sample) | Arthritis due to bancroftian filariasis (Filarial arthritis)       | Knee, Ankle             |
| Chollet         | USA          | Prospective cohort                  | Chronic pain (Undefined)      | 10*  | 2-14 years                   | NR                                 | Osteonecrosis due to chemotherapy for ALL or non-hodgkins lymphoma | Ankle                   |
| Chua            | Malaysia     | Case report                         | Chronic pain (>3 months)      | 1    | 7 years                      | Female                             | Melorheostosis (Mesenchymal dysplasia)                             | Hip, Knee               |
| Cibulka         | USA          | Case report                         | Chronic pain (>8 months)      | 1    | 15 years                     | Female                             | Patellofemoral pain syndrome                                       | Knee                    |
| Cilliers        | South Africa | Case series                         | Chronic pain (since infancy)  | NR   | NR                           | NR                                 | Beukes familial hip dysplasia (autosomal dominant condition)       | Hip                     |

|                    |             |                               |                                      |     |  |                        |   |                               |
|--------------------|-------------|-------------------------------|--------------------------------------|-----|--|------------------------|---|-------------------------------|
| Cirakli            | Turkey      | Cross-sectional observational | Chronic (> 12 months)                | 16* | Mean 11 years (2-17 years)                           | NR                     | Brucellosis   | Leg                           |
| Clohisy            | USA         | Prospective cohort            | Persistent pain (Undefined)          | NR  | 17.6 years (range 13-31.8)                           | NR                     | Acetabular dysplasia                                      | Hip                           |
| Colgan             | Ireland     | Case report                   | Persistent pain (>3 months)          | 1   | 14 years   | Male                   | Slipped upper femoral epiphysis                           | Knee                          |
| Constantinou       | Australia   | Case report                   | Chronic pain (>3 months)             | 1   | 16 years   | Male                   | Non-union distal fibula avulsion fracture                 | Ankle                         |
| Corominas          | Spain       | Case report                   | Pain (18 months)                     | 1   | 14 years   | Male                   | Osteochondritis dissecans                                 | Foot                          |
| Craig              | USA         | Case report                   | Chronic pain (Undefined)             | 1   | 9 years  | Male                   | Activated phosphoinositide 3-kinase (PI3K) delta syndrome | Hip                           |
| Crosby             | USA         | Retrospective review          | Pain (>12 months)                    | 4*  | Mean 12.9 years (range 8-17)                         | NR                     | Femoral shaft fracture                                    | Hip                           |
| Curtin 2005        | Ireland     | Case report                   | Pain (18 months)                     | 1   | 12 years   | Male                   | Osteochondritis of medial lallucial sesamoid              | Foot                          |
| Curtin 2010        | USA         | Case report                   | Pain (3 months)                      | 1   | 16 years   | Male                   | Bucket handle medial plica                                | Knee                          |
| Dagher             | Lebanon     | Case report                   | Chronic (>1 year)                    | 1   | 5 years  | Female                 | Juvenile idiopathic arthritis                             | Knee, Ankle                   |
| Dartnell           | UK          | Retrospective review          | Persistent pain (Undefined)          | 4*  | Mean 14.7 years                                      | NR                     | Hip dislocation or subluxation in cerebral palsy          | Hip                           |
| Das                | India       | Cross-sectional observational | Chronic pain (Follow up 1.6-3 years) | 14  | 11-16 years  | 3 Female<br>11 Male    | Post operative cerebral palsy                             | Knee                          |
| de Rooy            | Netherlands | Case report                   | Chronic pain (6 months)              | 14  | 14 years   | Female                 | Growth arrest at secondary growth plate                   | Knee                          |
| Deere              | UK          | Longitudinal study            | Pain (>3 months)                     | 845 | Mean 17.8 years                                      | 550 Female<br>295 Male | Musculoskeletal pain                                      | Hip, Thigh, Knee, Ankle, Foot |
| Demir (2019)       | Turkey      | Case series                   | Pain 2 years                         | 3   | <18 years  | NR                     | Takayasu arteritis  | Knee                          |
| Demir (2014)       | Turkey      | Case report                   | Chronic (undefined)                  | 1   | 11 years   | Female                 | Juvenile idiopathic arthritis                             | Ankle                         |
| Den Hoed           | Netherlands | Prospective evaluation        | Persistent pain (Undefined)          | 30* | > 4 years osteonecrosis subgroup (range 4-18 years ) | 16 Female<br>14 Male   | Osteonecrosis   | Hip, Knee, Ankle              |
| Deniz              | Turkey      | Case report                   | Pain 6 months                        | 1   | 10 years   | Female                 | Iselins disease   | 5 <sup>th</sup> metatarsal    |
| DePhillipo         | USA         | Case report                   | Persistent pain (Undefined)          | 1   | 11 years   | Male                   | Osteochondral defect                                      | Knee                          |
| Derfalvi 2022/2014 | Hungary     | Cross-sectional observational | Persistent pain (Undefined)          | 82  | Mean 13.7 years (SD 3.2)                             | 37 Female<br>45 Male   | Crohn's disease   | Hip, Knee, Ankle              |
| Dicaprio           | USA         | Case report                   | Persistent pain (>4 months)          | 1   | 14 years   | Female                 | Osteosarcoma  | Knee                          |
| Dimitrovska        | Macedonia   | Case series                   | Chronic                              | 49  | 3-14 years   | 23 Female<br>26 Male   | Brucellosis   | Big joints of lower limb      |
| Doyle              | USA         | Case series                   | Pain (>4 months)                     | 3   | 2.5 years, 14 years, 8 years                         | 3 Female               | Talonavicular coalition                                   | Foot                          |
| Duan               | China       | Case report                   | >2 year history of pain              | 1   | 11 years   | Female                 | Talonavicular coalition                                   | Foot                          |
| Duckers            | Germany     | Case report                   | Chronic pain (8 years)               | 1   | 11 years   | Female                 | Purpura schoenlein hennoch                                | Ankle                         |

|             |              |                                     |                                  |      |                                    |                      |   |  |
|-------------|--------------|-------------------------------------|----------------------------------|------|------------------------------------|----------------------|---|--|
| Ece         | Turkey       | Follow up                           | Chronic pain (Undefined)         | 111* | Mean 10 years (Range 1.5-18 years) | NR                   | Juvenile idiopathic arthritis                                   | Hip, Knee, Ankle, Foot                 |
| Eichenbaum  | USA          | Case report                         | Pain (>12 months)                | 2    | 14 years<br>16 years               | 2 Male               | Talus partitus  | Ankle                                  |
| Eisenstein  | USA          | Case report                         | Chronic pain (6 months)          | 1*   | 12 years                           | Female               | Chronic recurrent multifocal osteomyelitis                      | Hip, Ankle, Foot                       |
| Ekinci      | Turkey       | Case report                         | Chronic pain (3months or longer) | 1    | 13 years                           | Female               | Multifocal AVN (neuropsychiatric SLE)                           | Knee                                   |
| Eliasberg   | USA          | Case report                         | Persistent pain (Undefined)      | 1    | 17 years                           | Male                 | Meniscal ossicle  | Knee                                   |
| Emad        | Saudi Arabia | Case study                          | Chronic pain (3 years)           | 1    | 12 years                           | Male                 | Lipsynovitis prepatellaris (Hoffa's syndrome)                   | Knee                                   |
| Encinas     | Bolivia      | Case report                         | Pain (15 months)                 | 1    | 12 years                           | Female               | Bechet's disease  | Knee                                   |
| Endo        | Japan        | Case report                         | Chronic pain (12 months)         | 1    | 16 years                           | Female               | Chondroblastoma   | Knee                                   |
| Eng         | USA          | RCT                                 | Pain (> 6months)                 | 20   | 13-17 years                        | 20 Female            | Patellofemoral pain syndrome                                    | Knee                                   |
| Engel       | USA          | Cross-section observational         | Chronic (>3 months)              | 23*  | 8-20 years                         | NR                   | Neuromuscular disease (e.g., DMD)                               | Leg, Feet                              |
| Ergen       | Turkey       | Case report                         | Pain (5 months)                  | 1    | 13 years                           | Male                 | Overuse injury – triradiate cartilage                           | Hip                                    |
| Farsetti    | Italy        | Case report                         | Chronic pain (>3 months)         | 1    | 11 years                           | Female               | Osteochondrosis   | Ankle                                  |
| Fellas      | Australia    | RCT                                 | Chronic pain (>3 months)         | 66   | Mean 12 years                      | 45 Female<br>21 Male | Juvenile idiopathic arthritis                                   | Foot                                   |
| Ferguson    | Canada       | Case report                         | Chronic pain (>3 months)         | 1    | 13 years                           | Female               | Chronic recurrent multifocal osteomyelitis                      | Ankle                                  |
| Ferrada     | USA          | Cross-sectional Survey              | Persistent pain (Undefined)      | NR   | Mean 14.6 years                    | NR                   | Relapsing polychondritis  | Knee, Ankle                            |
| Fisher      | UK           | Longitudinal                        | Chronic pain (>3 months)         | 118  | Range 8-16 years                   | 57 Female<br>61 Male | Lower limb injury   | Hip, Knee, Lower leg, Ankle, Foot, Toe |
| Ford (2009) | USA          | Case report                         | Chronic pain (2 years)           | 1    | 9 years                            | Female               | Auto-immune polyendocrinopathy candidiasis ectodermal dystrophy | Knee, Ankle                            |
| Ford (2021) | USA          | Case report                         | Chronic pain (Undefined)         | 1    | 16 years                           | Female               | Patellar sleeve fracture  | Knee                                   |
| Foxen-craft | USA          | Cross-sectional survey              | Chronic pain (>6 months)         | 21   | Mean 14.3 years                    | NR                   | Musculoskeletal pain  | Hip, Knee, Ankle                       |
| Fuglkjaer   | Denmark      | Prospective longitudinal study      | Chronic pain (>12 weeks)         | NR   | 8-17 years                         | NR                   | Musculoskeletal pain (traumatic/non traumatic)                  | Thigh, Knee, Lower leg, Ankle, Foot    |
| Funk        | USA          | Case report                         | Chronic pain (Undefined)         | 1    | 12 years                           | Male                 | Type 3 von willebrand disease                                   | Ankle                                  |
| Gallagher   | USA          | Case report                         | Chronic pain (>4 months)         | 1    | 3 years                            | Female               | Avoidant restrictive intake disorder                            | Hip, Knee                              |
| Gamble      | USA          | Cross-sectional                     | Chronic pain (Undefined)         | 77   | 0-19 years                         | 48 Female<br>28 Male | Pseudoachondroplasia  | Hip, Knee                              |
| Garg        | UK           | Case report                         | Pain (>7 months)                 | 1    | 15 years                           | Female               | Primary diaphyseal tuberculosis                                 | Leg                                    |
| Geiduschek  | USA          | Cross-sectional observational study | Persistent pain (Undefined)      | 55   | 3-22 years (Median 5 years)        | 20 Female<br>25 Male | Spasticity related to cerebral palsy                            | Lower extremity                        |
| Gemulla     | Germany      | Case series                         | Pain (5 months)                  | 1*   | 15 months                          | Female               | Noro or influenza virus   | Ankle                                  |
| George 2019 | India        | Case report                         | Pain (> 12 months)               | 1    | 15 years                           | Male                 | Slipped capital femoral epiphysis in hyperparathyroidism        | Hip                                    |
| George 2008 | UK           | Case report                         | Persistent pain (undefined)      | 2    | 14-16 years (Mean age 15 years)    | 1 Female<br>1 Male   | Benign lesion of proximal femur                                 | Femur                                  |
| Georgoulis  | Greece       | Case series                         | Persistent pain (Undefined)      | NR   | 13-24 years of age (mean 18 years) | NR                   | Osteoid osteoma   | Knee                                   |

|                |          |  |                                   |      |                                     |                     |   |                        |
|----------------|----------|--|-----------------------------------|------|-------------------------------------|---------------------|---|------------------------|
| Gerberg        | USA      | Case report                              | Chronic pain                      | 1    | 8 years                             | Male                | Legg-calve-perthes disease  | Hip                    |
| Gerbino        | USA      | Cross-sectional observational            | Chronic pain (3 months)           | NR   | Mean age 16.9 years                 | NR                  | Patellofemoral pain syndrome  | Knee                   |
| Gibbons        | Canada   | Case series                              | Chronic pain (unspecified)        | 1*   | NR                                  | NR                  | Chronic ankle pain following lateral ankle sprain   | Ankle                  |
| Glard          | France   | Retrospective review                     | Pain (>10 months)                 | 4    | 11-17 years                         | 4 Female<br>1 Male  | Os trigonum   | Ankle                  |
| Gokhale        | UK       | Case report                              | Pain (>7 months duration)         | 1    | 9 years                             | Female              | Ganglion  | Hip/groin              |
| Goraya         | India    | Case report                              | Chronic pain (3 months or >)      | 1    | 9 years                             | Female              | Arteriovenous malformation of the knee  | Knee                   |
| Gottesman      | USA      | Case report                              | Chronic pain (Undefined)          | 1    | 16 years                            | Female              | Spondyloepimetaphyseal dysplasia  | Knee                   |
| Greenberg      | USA      | Case report                              | Chronic Pain (>3 months)          | 1    | 15 years                            | Male                | Fibular stress fracture   | Lower leg              |
| Guizar-Sanchez | Mexico   | Retrospective case-matched control study | Chronic pain (Undefined)          | 21*  | Mean 7 years                        | 8 Female<br>12 Male | Cerebral Palsy  | Hip                    |
| Gupta          | India    | Cohort study                             | Pain (>12 months)                 | 1*   | Mean 12.6 years                     | NR                  | Protusio acetabulae / septic arthritis  | Hip                    |
| Gutierrez      | Spain    | Retrospective medical record review      | Chronic pain (>2 years)           | 22*  | Mean 9.4 years (SD 0.3)             | NR                  | Flat foot   | Foot                   |
| Hadef          | Algeria  | Case report                              | Chronic pain (Undefined)          | 1    | 9 years                             | Male                | Bechets disease   | Hip, Knee              |
| Hanna          | UK       | Case series                              | Pain (12 months)                  | 2    | 13 years<br>17 years                | Male                | Bicondylar osteochondritis dissecans  | Knee                   |
| Harlewijn      | Belgium  | Case report                              | Pain (> 6 months)                 | 1    | 14 years                            | Male                | Haemophilic A   | Foot                   |
| Hashkes        | USA      | Cross-sectional observational            | Chronic pain (mean 1.4 years)     | 11   | 4-15 years                          | 3 Female<br>8 Male  | Growing pains   | Lower leg (shin, calf) |
| Hayat          | UK       | Case report                              | Pain (>12 months)                 | 1    | 16 years                            | Male                | Ischiofemoral impingement   | Groin                  |
| Hayyun         | Malaysia | Case report                              | Persistent pain (>5 months)       | 1    | 10 years                            | Male                | Femoral neck stress fracture  | Hip                    |
| Heinemann      | Germany  | Longitudinal                             | Chronic pain (>3 months)          | 10   | <15 at age of diagnosis             | NR                  | Ewing sarcoma   | Lower limb             |
| Heinen         | Germany  | Prospective cohort                       | Chronic pain (Undefined)          | 278* | 2-17 years                          |                     | Cerebral palsy (spasticity related pain)  | Hip, Knee, Ankle, Foot |
| Helenius       | Finland  | Case series                              | Chronic pain (undefined)          | 28*  | 15.7 years (Range 3.7 - 32.8 years) | NR                  | Avascular bone necrosis, slipped capital femoral epiphysis, Osteochondritis dissecans of the medial femoral condyle, osteoarthritis, meniscal tear, | Hip                    |
| Hensley        | USA      | Case report                              | Chronic pain (>6 months)          | 1    | 15 years                            | Male                | Navicular fracture (non-displaced)  | Foot                   |
| Hetsroni       | USA      | Retrospective office chat review         | Chronic pain (>3 months, >1 year) | 6    | Range 14-18 years                   | 5 Female<br>1 Male  | Medial meniscocapsular separation   | Knee                   |
| Hevesi         | USA      | Retrospective geographic database review | Persistent pain (Undefined)       | 4*   | Mean 12.5 years                     | NR                  | Osteochondritis dissecans   | Knee                   |
| Higuchi 2016   | Japan    | Case report                              | Persistent pain (>5 months)       | 1    | 14 years                            | Female              | Familial neurofibromatosis type 1   | Hip, Leg               |
| Higuchi 2019   | Japan    | Case report                              | Persistent pain (3 months)        | 1    | 14 years                            | Male                | Osteoid osteoma   | Knee                   |
| Ho             | USA      | Case report                              | Pain (>8 years)                   | 1    | 15 years                            | Male                | Skeletal dysplasia and open physes  | Knee                   |

|            |           |                                     |                                   |      |                                    |                      |  |                          |
|------------|-----------|-------------------------------------|-----------------------------------|------|------------------------------------|----------------------|--|--------------------------|
| Holden     | Denmark   | Prospective longitudinal            | Persistent pain (Mean 24 months)  | 220* | Median 17 years                    | NR                   | Musculoskeletal pain   | Knee                     |
| Holm       | Norway    | Cohort                              | Pain (2.5 years)                  | 21*  | Mean 11.7 (range 5.5-22.4)         | NR                   | Hip Dysplasia  | Hip                      |
| Holzheimer | Germany   | Case report                         | Chronic pain (Undefined)          | 1    | 10 years                           | Female               | Inguinal hernia  | Groin                    |
| Hong       | China     | Case report                         | Chronic pain (Undefined)          | 1    | 7 years                            | Male                 | Perthes Disease  | Hip                      |
| Hori       | Japan     | Case series                         | Chronic pain (>4 years)           | 1*   | 10 years                           | Female               | Fibro-adipose vascular anomaly   | Thigh                    |
| Hornsby    | Australia | Single case experimental design     | Chronic pain (>3 months)          | 3    | Mean 10.6 years                    | 1 Female<br>2 Male   | Generalised joint hypermobility / Chronic musculoskeletal pain                     | Hip, Knee, feet          |
| Hosny      | Egypt     | Cohort                              | Consistent pain (Undefined)       | 3*   | 8-14 years                         | NR                   | Legg-calve-perthes disease   | Hip                      |
| Houx       | France    | Cross-sectional observational       | Chronic pain                      | 33*  | NR                                 | NR                   | Cryopyrin-associated periodic syndrome   | Lower limb               |
| Howe       | USA       | Case report                         | Chronic pain (>3 months)          | 1    | 9 years                            | Female               | Discoid lateral meniscus   | Knee                     |
| Huppertz   | Germany   | Cross-sectional                     | Chronic (3 months or >)           | 2    | Median 11 years (Range 3-16 years) | NR                   | Lyme arthritis   | Hip, Knee, Ankle         |
| Huang      | China     | Cross-sectional                     | Chronic (3 months or >)           | 18*  | Mean 10 years                      | Male                 | Duchene muscular dystrophy   | Hip, Leg, Feet           |
| Huynh      | USA       | Case series                         | Pain (4 month and 2-year history) | 2    | 3 years<br>4 years                 | 2 Male               | Tendonitis, Juvenile idiopathic arthritis  | Lower limb, Knees, Ankle |
| Ifedic     | USA       | Case report                         | Chronic pain (at least 3 months)  | 1    | 11 years                           | Male                 | Chronic recurrent multifocal osteomyelitis   | Knee                     |
| Iliev      | Bulgaria  | Case report                         | Pain (several months)             | 1    | 18 years                           | Male                 | Os subtibiale  | Ankle                    |
| Ismail     | USA       | Case report                         | Chronic pain (>2 years)           | 1    | 14 years                           | Female               | Osteochondroma   | Ankle                    |
| Issever    | Germany   | Case report                         | Chronic pain (>1 year)            | 1    | 10 years                           | Female               | Accessory navicular bone   | Ankle, Foot              |
| Iwaasa     | Japan     | Case report                         | Persistent pain (>6 months)       | 1    | 16 years                           | Female               | Plica syndrome   | Knee                     |
| Jain       | India     | Case report                         | Pain (6 months)                   | 1    | 13 years                           | Female               | Primary sjogrens syndrome with distal renal tubular acidosis and metabolic disease | Hip, Knee                |
| James 2017 | USA       | Case report                         | Pain (7 years)                    | 1    | 11 years                           | Female               | Recurrent ankle sprain   | Ankle                    |
| James 2015 | Australia | Cross-sectional                     | Paim (mean 10 months)             | 124  | Mean 10.8 years                    | 52 Female<br>72 Male | Calcaneal apophysitis  | Heel                     |
| Jasiexicz  | Poland    | Retrospective medical record review | Persistent pain (5.6 years)       | 1*   | Mean 14 years (range 9-22 years)   | NR                   | Accessory navicular bone   | Foot                     |
| Jiang      | China     | Care report                         | Persistent pain (Undefined)       | 1    | 16 years                           | Female               | Hoffa's fracture   | Knee                     |
| Jimenez    | USA       | Prospective cohort                  | Chronic pain (>2 years)           | 39*  | Mean 16 years                      | 35 Female<br>4 Male  | Femoroacetabular impingement   | Hip                      |
| Johnson    | USA       | Retrospective medical record review | Chronic pain (>7 months)          | 7*   | Mean 12 years (Range 2-23)         | 2 Female<br>5 Male   | Kippel-trenaunay syndrome (vascular malformation)                                  | Knee                     |
| Kalra      | UK        | Case report                         | Chronic pain (5 years)            | 1    | 9 years                            | Female               | Recurrent rhabdomyolysis   | Calves                   |

|                |           |                                     |                                  |      |                            |   |  |                   |
|----------------|-----------|-------------------------------------|----------------------------------|------|----------------------------|---|--|-------------------|
| Kamal          | Indonesia | Case report                         | Persistent pain (>2 years)       | 1    | 10 years                   | Female  | Osteofibrous dysplasia   | Tibia             |
| Kaplan         | USA       | Case report                         | Chronic pain (Undefined)         | 1    | 16 years                   | Female  | Chondrolysis   | Hip               |
| Karadag        | Tirkey    | Case report                         | Pain (>3 months)                 | 1*   | 3 years                    | Female  | Hyperimmunoglobulin D syndrome   | Leg               |
| Kaser          | USA       | Case report                         | Chronic pain (>3 months)         | 1    | 11 years                   | Female  | Chondroblastoma  | Knee              |
| Kashikar-Zuck  | USA       | Clinical trial                      | Chronic pain (undefined)         | 135  | Mean 15.6 years            | 120 Female<br>11 Male<br>4 Trangender /Non binary | Primary chronic musculoskeletal pain   | Lower limb        |
| Kaspiris       | Greece    | Retrospective                       | Chronic pain (Undefined)         | 130* | Mean 8.6 years (SD 2.5)    | 69 Female<br>63 Male                              | Growing pain   | Leg               |
| Kawaji         | Japan     | Case report                         | Chronic pain (>3 months)         | 1*   | 16 years                   | Female  | Autosomal dominant precocious osteoarthropathy                                 | Hip               |
| Kawakami       | Japan     | Case report                         | Chronic pain (>2 years)          | 1    | 9 years                    | Male  | Extraskelatal para-articularosteochondroma                                     | Ankle             |
| Kaymaz         | Turkey    | Case report                         | Pain (3 months)                  | 1    | 16 years                   | Male  | Patella chondroma  | knee              |
| Keeratisiroj   | Thailand  | Cross-sectional observational       | Pain (7days, 12 months)          | 270* | Range 10-19 years          | NR  | Musculoskeletal pain   | Hip, Knee, Ankle  |
| Kehoe          | USA       | Case series                         | Chronic pain (>11 months)        | 1*   | 11 years                   | Male  | Sustentaculum tali fracture adjacent to talocalcaneal tarsal coalition Kempert | Foot              |
| Kempert        | USA       | Cross-sectional observational       | Chronic pain (at least 3 months) | 109  | 8-19 years                 | 73 Female<br>15 Male                              | Musculoskeletal pain   | Lower limb        |
| Kernbach       | USA       | Case series                         | Chronic pain (>16 months)        | 6    | 12-17 years                | NR  | Middle facet talocalcaneal coalition   | Ankle             |
| Khan 2014      | UK        | Case report                         | Chronic pain (10 months)         | 1    | 14 years                   | Male  | Subiliacus haematoma after apophyseal injury                                   | Hip               |
| Khan 2018      | USA       | Case report                         | Chronic pain (several months)    | 1    | 11 years                   | Female  | Septic arthritis   | Hip               |
| Kizilkaya      | Turkey    | Case report                         | Pain (3 years)                   | 1    | 7 Years                    | Male  | Skeletal dysplasia   | Knee, Ankle       |
| Knaus          | Norway    | Retrospective medical record review | Chronic pain (>3 months)         | 4*   | Mean 15 years (Range 3-27) | Male  | Post operative proximal femoral resection arthroplasty                         | Hip               |
| Kramer         | USA       | Case series                         | Chronic pain (>3 months)         | 14   | 9-18 years                 | NR  | Osteochondritis dissecans  | Knee              |
| Kreetapirom    | Thailand  | Case report                         | Pain (>3 months)                 | 1    | 15 years                   | Male  | Hyperthyroidism  | Hip               |
| Krishnamoorthy | USA       | Case report                         | Severe pain (2 years)            | 1    | 17 years                   | Female  | Primary hyperthyroidism  | Knee              |
| Krutzke        | Germany   | Case report                         | Chronic pain (>3 months)         | 1    | 15 years                   | Female  | COPA syndrome  | Knee, Ankle, Foot |
| Kumar (2001)   | India     | Retrospective study                 | Pain (9 months)                  | 7    | Mean 15 years              | NR  | Undifferentiated spondyloarthropathy   | Hip, Knee, Ankle  |
| Kumar (2017)   | India     | Cross-sectional observational       | Chronic pain (>3 months)         | 94*  | 5-16 years                 | NR  | Primary chronic musculoskeletal pain   | Lower limb        |
| Labotka        | USA       | Observational                       | Pain (undefined)                 | 49   | Mean 18 years              | NR  | Sickle cell disease  | Leg               |
| Lager          | Sweden    | Cross-sectional                     | Chronic (3 months or >)          | 38*  | 15 years                   | NR  | Spinal muscular atrophy, duchenne and becker muscular dystrophy                | Leg               |
| Lambrechts     | USA       | Case report                         | Chronic pain (>12 months)        | 1    | 15 years                   | Male  | Hetrotopic ossification of rectus femoris post AIIS avulsion fracture          | Hip               |



|              |             |                               |                                       |      |                                   |                     |   |                  |
|--------------|-------------|-------------------------------|---------------------------------------|------|-----------------------------------|---------------------|---|------------------|
| LaMont       | USA         | Retrospective chart review    | Persistent pain (>12 months)          | 19   | Mean 15 years (range 9.5-17)      | 5 Female<br>14 Male | Inverted discoid meniscus segment         | Knee             |
| Larson       | USA         | Cross-sectional               | Chronic (>1 year)                     | 28*  | Mean 13 years (range 6-17)        | NR                  | Slipped capital femoral epiphysis         | Hip, Knee        |
| Lavoie       | USA         | Case report                   | Chronic (4 years)                     | 1    | 11 years                          | Male                | Philadelphia chromosome-positive CML      | Leg              |
| Lee 2015     | Korea       | Cross-sectional observational | Chronic (6 months)                    | 20   | Mean 11 years (SD 2)              | 8 Female<br>12 Male | Symptomatic flexible flat foot            | Foot             |
| Lee 2015     | Korea       | Cross-sectional observational | Chronic (6 months)                    | 20   | Mean 9.1 years (SD 2.32)          | 13 Female<br>7 Male | Growing pain                              | Lower limb       |
| Lefkir       | Algeria     | Case series                   | Pain (>3 months)                      | 1*   | 14 years                          | Female              | Juvenile angio-becet's disease            | Knee             |
| Lepore       | Canada      | Case report                   | Persistent pain (5 months & >3 years) | 2*   | 9 years<br>14 years               | Female              | Oligoarticular juvenile arthritis         | Groin, Knee      |
| Lequang      | USA         | Case report                   | Pain (>3 years)                       | 1    | 15 years                          | Female              | Nuclear factor I type A variant           | Knee             |
| Lescot       | France      | Prospective cohort            | Persistent pain (undefined)           | 4*   | Median 13 years (range 10-15)     | NR                  | Post-surgical pain                        | Foot             |
| Li           | China       | Case report                   | Pain (6 months)                       | 1    | 13 years                          | Female              | Wilson disease                            | Knee             |
| Liu          | Taiwan      | Case report                   | Chronic pain (>4 months)              | 2    | 2 months & 2 years                | Male                | Spinal meningioma                         | Knee             |
| Logan (2021) | USA         | Retrospective review          | Pain (11 months)                      | 51*  | Mean 11 years                     | NR                  | Symptomatic discoid meniscus              | Knee             |
| Logan (2010) | USA         | Case report                   | Pain (>3 years)                       | 1    | 8 years                           | Female              | Limb length secondary to ABI              | Hip              |
| Lolekha      | Thailand    | Prospective cohort            | Chronic pain (>3 months)              | 4*   | Range 4-11 years                  | NR                  | Human immunodeficiency virus              | Lower limb       |
| Lu           | China       | Case report                   | Pain (3 years)                        | 1    | 9 years of age                    | Male                | Pyogenic arthritis                        | Knee, Ankle      |
| Luhmann      | USA         | Retrospective review          | Chronic pain (>12 months)             | 9    | Mean 14.6 years (range 10.3-19.9) | 1 Female<br>8 Male  | Painful idiopathic rigid flatfoot         | Foot             |
| Luthi        | Switzerland | Case report                   | Chronic pain (>3 months)              | 1    | 16 years                          | Male                | Complication of oral retinoids            | Knee             |
| Lyback       | Finland     | Cross-sectional observational | Chronic pain (>3 months)              | 15*  | Range 1.5-16 years                | NR                  | Juvenile rheumatoid arthritis             | Knee             |
| Macdonald    | USA         | Case report                   | Chronic pain (Undefined)              | 1    | 7 years                           | Female              | Post fibular fracture                     | Ankle            |
| Maj          | Malaysia    | Case report                   | Chronic pain (>6 months)              | 1    | 11 years                          | Female              | Posterior horn deficient discoid meniscus | Knee             |
| Majumder     | India       | Case report                   | Chronic pain (>3 months)              | 1    | 5 years                           | Male                | Pigmented villonodular synovitis          | Knee             |
| Malec        | USA         | Case report                   | Persistent pain (several months)      | 1    | 14 years                          | Female              | FVII deficiency                           | Knee             |
| Mardanpour   | Iran        | Case report                   | Pain (4 month history)                | 1    | 11 years                          | Female              | Calcaneus osteosarcoma                    | Ankle            |
| Mariani      | Italy       | Retrospective review          | Chronic pain (>1 year)                | 1*   | Mean 15 years                     | Male                | Chronic patella instability               | Knee             |
| Maru         | Japan       | Case report                   | Chronic pain (>3 months)              | 1    | 12 years                          | Female              | Chondroblastoma                           | Hip              |
| Masiero      | Italy       | Cohort                        | Persistent pain (>3 months)           | 2584 | Mean 15 years (SD 1.21)           | NR                  | Musculoskeletal pain                      | Hip, Knee, Ankle |
| Maslon       | Poland      | Observational                 | Permanent pain (Undefined)            | 11*  | Mean 9.6 years                    | NR                  | Cerebral palsy                            | Hip              |
| Masud        | Bangladesh  | Case report                   | Chronic pain (>2 years)               | 1    | 15 years                          | Female              | Giant cell tumour                         | Tibia            |

|               |             |                               |                               |     |                              |                      |   |                  |
|---------------|-------------|-------------------------------|-------------------------------|-----|------------------------------|----------------------|---|------------------|
| Matava        | USA         | Retrospective review          | Pain (4 months, 12months)     | 3*  | Mean 12.7 years              | NR                   | Slipped capital femoral epiphysis   | Hip, Leg, Knee   |
| Mattila       | Finland     | Retrospective review          | Chronic pain (>2 years)       | 14  | Mean 6 years                 | 6 Female<br>8 Male   | Intra-articular venous malformation of the knee   | Knee             |
| Mauro (2018)  | Italy       | Case report                   | Chronic pain (6 months)       | 1   | 16 years                     | Female               | Pigmented villonodular synovitis  | Knee             |
| Mauro (2018a) | Italy       | Case series                   | Chronic pain (several months) | 1   | 7 years                      | Female               | Meta thalassemia minor  | Hip, Knee, Ankle |
| Maximen       | France      | Case report                   | Chronic pain (6 months)       | 1   | 17 years                     | Male                 | Hemangioendothelioma  | Knee             |
| May           | USA         | Retrospective review          | Chronic pain (>6 months)      | 52  | Mean 12.5 years (range 3-19) | NR                   | Osteoid osteoma   | Hip, Thigh, Knee |
| Mazzella      | Australia   | Cross-sectional cohort        | Pain (>2 years)               | 28* | Mean 14.31years              | 12 Female<br>16 Male | Patellofemoral pain   | Knee             |
| McKinnon      | Australia   | Cross-sectional observational | Chronic pain (>3 months)      | 75  | Range 5-18 years             | NR                   | Cerebral palsy  | Lower limb       |
| Mehdinasab    | Pakistan    | Case report                   | Chronic pain (1.5 years)      | 1   | 15 years                     | Female               | Osteoid osteoma patella   | Knee             |
| Menge         | USA         | Case report                   | Chronic pain (>3 months)      | 1   | 14 years                     | Male                 | Medial malleolar stress fracture  | Ankle            |
| Mensink       | Netherlands | Cross-sectional case control  | Chronic pain (Undefined)      | 16  | Mean 14.8 years              | 12 Female<br>4 Male  | Juvenile idiopathic arthritis   | Knee             |
| Messia        | Italy       | Case report                   | Chronic (>1 year)             | 1   | 4 years                      | Female               | Sting associated vasculopathy (SAVI)  | Knee, Ankle      |
| Messner       | Sweden      | Case series                   | Chronic pain (>12 months)     | 1   | 18 years                     | 1 Female<br>1 Male   | Chondral damage due to trauma   | Knee             |
| Miettunen     | Canada      | Prospective                   | Chronic pain (>3 months)      | 40  | Range 0-18 years             | NR                   | Osteonecrosis related to chemotherapy (ALL)   | Hip, Knee        |
| Miltner       | Germany     | Prospective cohort            | Chronic pain (>6 months)      | 27  | Range 13-18 years            | 24 Female<br>3 Male  | Patellar hypertension syndrome  | Knee             |
| Mir           | India       | Case report                   | Chronic pain (2 years)        | 1   | 17 years                     | Male                 | Osteoblastoma of talus body   | Ankle            |
| Miro          | Spain       | Cross-sectional               | Chronic pain (Undefined)      | 115 | Mean 14 years (SD 3)         | 44 Female<br>56 Male | Chronic pain in context of physical disability (Cerebral palsy, Neuromuscular disease, Spina bifida), | Hips, Leg, Feet  |
| Miyazaki      | Japan       | Case report                   | Chronic (9 months)            | 1   | 16 years                     | Female               | Chondroblastoma   | Knee             |
| Moore         | Canada      | Case report                   | Chronic (3 years)             | 1   | 8 years                      | Male                 | Lyme arthritis  | Knee             |
| Morris        | USA         | Case report                   | Chronic pain (>6 months)      | 1   | 11 years                     | Male                 | Osteoid osteoma   | Ankle, Foot      |
| Mortensen     | USA         | Case report                   | Chronic pain (6 months)       | 1   | 15 years                     | Male                 | Ischial osteoid osteoma   | Hip              |
| Motsis        | Greece      | Case report                   | Chronic pain (2 years)        | 1   | 16 years                     | Female               | Intra-articular synovial lipoma   | Knee             |
| Moukoko       | France      | Cohort                        | Chronic pain (>12 months)     | 36  | Mean 8 years                 | 26 Female<br>10 Male | Subfibular ossicle  | Ankle            |
| Muramastu     | Japan       | Case series                   | Chronic pain (>3 months)      | 8*  | Range 0-17 years             | 3 Female<br>5 Male   | Synovial hemangioma   | Knee             |
| Muschol       | USA         | Case report                   | Pain (5 months)               | 1   | 5.5 years                    | Male                 | Hypertrophic medial plica / medial femoral condyle damage   | Knee             |
| Naranje       | India       | Case report                   | Chronic pain (>6 months)      | 1   | 10 years                     | Male                 | Cirsoid aneurysm  | Knee             |

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|------------------------------------|--------------|-------------------------------------|---------------------------------------|-----|-------------------------------|----------------------|---|------------------------|
| Nayak                              | USA          | Case report                         | Chronic pain (Undefined)              | 1   | 12 years                      | Female               | Chronic dislocated hip                                    | Hip                    |
| Nemcovaf                           | Denmark      | Retrospective medical record review | Chronic pain 2-84 months)             | 21  | Mean 10.5 years               | 12 Female<br>9 Male  | Chronic recurrent multifocal osteomyelitis                | Lower extremities      |
| Nevins                             | USA          | Case report                         | Pain (>6 months)                      | 1   | 10 years                      | Male                 | Lipoma arborescence                                       | Knee                   |
| Ningegowda                         | India        | Case report                         | Chronic pain (>1 year)                | 1   | 13 years                      | Male                 | Chondroblastoma   | Ankle                  |
| Novaczyk                           | USA          | Retrospective cohort                | Chronic (months or >)                 | 265 | Range 9-11 years              | NR                   | Cerebral palsy  | Hip, Knee, Ankle, Foot |
| Novais                             | USA          | Prospective cohort                  | Chronic (Undefined)                   | 13* | Range 9-18 years              | 2 Female<br>11 Male  | Osteonecrosis of femoral head                             | Hip                    |
| Nwachukwu                          | USA          | Retrospective medical record review | Chronic pain (post-op, >6 months f/u) | 11* | Mean 16.2 years (range 13-18) | NR                   | Arthrofibrosis following ACL reconstruction               | Knee                   |
| Nwankwo                            | Nigeria      | Case report                         | Chronic pain (>3 months)              | 1   | 11 years                      | Female               | Dermatomyositis   | Lower limbs            |
| Oh                                 | Korea        | Retrospective with single follow up | Chronic (6 months)                    | 10  | Mean 15.6 years (range 10-22) | 5 Female<br>5 Male   | Idiopathic flat foot                                      | Ankle, Foot            |
| Oshlyanska                         | Ukraine      | Case report                         | Chronic pain (>3 months)              | 1   | 14 years                      | Male                 | Paraneoplastic arthritis                                  | Knee                   |
| Pacey 2014                         | Australia    | Intervention                        | Chronic pain (Undefined)              | 9*  | Mean 11.6 years               | NR                   | Joint hypermobility syndrome                              | Knee                   |
| Pacey 2013                         | Australia    | RCT                                 | Chronic pain (Undefined)              | 265 | Mean 12.04 years (SD 2.93)    | 18 Female<br>8 Male  | Generalised joint hypermobility                           | Knee                   |
| Padeh                              | Israel       | Cross-sectional observational       | Chronic pain (Undefined)              | 61  | Mean 9.4 years                | 47 Female<br>24 Male | Juvenile rheumatoid arthritis                             | Hip, Knee, Ankle       |
| Padhye                             | Australia    | Retrospective medical record review | Persistent pain (undefined)           | 20  | Mean 13 years                 | NR                   | Osteonecrosis   | Hip, Knee, Ankle       |
| Paluska                            | USA          | Case report                         | Persistent pain (3 months)            | 1   | 11 years                      | Male                 | Osteomyelitis   | Thigh                  |
| Papakonstantinou                   | Greece       | Retrospective review                | Persistent pain (Undefined)           | 5   | Median 12 years               | 3 Female<br>2 Male   | Osteonecrosis   | Hip, Knee              |
| Park                               | Korea        | Case report                         | Chronic pain (>1 year)                | 1   | 16 years                      | Male                 | Recurrent macrophage activation syndrome                  | Ankle                  |
| Paruk                              | South Africa | Case series                         | Chronic pain (>3 months)              | 2   | 13 years<br>17 years          | Male                 | Primary hyperthyroidism                                   | Knee, Ankle            |
| Patel                              | India        | Case report                         | Chronic pain (>3 years)               | 1   | 12 years                      | Male                 | Wilson's disease  | Knee                   |
| Perez                              | Spain        | Case report                         | Pain (>3 years)                       | 1   | 7 years                       | Male                 | Haploinsufficiency of A20 with new mutation p.W365R       | Lower limbs            |
| Pietrzak                           | Australia    | Case report                         | Chronic pain (>6 months)              | 1   | 16 years                      | Female               | Patellofemoral pain syndrome and iliotibial band syndrome | Knee                   |
| Pilbury                            | UK           | Case report                         | Pain (>4 years)                       | 1   | 12 years                      | Male                 | Cystic fibrosis   | Knee                   |
| Pill                               | USA          | Retrospective case series           | Chronic pain (Undefined)              | 23  | Mean 10.4 years (range 8-13)  | 15 Female<br>8 Male  | Symptomatic os subfibare                                  | Foot                   |
| Pinto (data combined with Paredes) | Portugal     | Cross-sectional                     | Chronic pain (3 months or >)          | 18* | Range 10-17 years             | NR                   | Haemophilia   | Knee, Ankle            |
| Poirot                             | France       | Cohort study                        | Pain (Long duration)                  | 65* | Mean 6.79 (SD±1.93)           | NR                   | Cerebral palsy  | Hip, Knee, Feet        |
| Porter-Bishop                      | New Zealand  | Case report                         | Chronic pain (Undefined)              | 1   | 12 years                      | Male                 | Von Willebrand disorder                                   | Ankle                  |
| Portin                             | USA          | Case report                         | Chronic (3 months or >)               | 1   | 7 years                       | Male                 | Juvenile idiopathic arthritis                             | Ankle                  |

|               |           |                                     |   |      |                               |                      |   |                         |
|---------------|-----------|-------------------------------------|---|------|-------------------------------|----------------------|---|-------------------------|
| Pouliquen     | France    | Retrospective medical record review | Chronic pain (>2 years)                         | 25   | Range 6-16 years              | 20 Female<br>5 Male  | Anatomical variant "Too long" anteromedial calcaneal process                            | Foot                    |
| Pountney      | UK        | Randomised trail                    | Chronic pain (>6 months)                        | 6    | Mean 12.1 years               | 2 Female<br>4 Male   | Cerebral palsy  | Hip                     |
| Pourbordbari  | Denmark   | Cross-sectional population          | Chronic pain (median pain 5 months)             | 56*  | Median 13 years (IQR 12-16.5) | NR                   | Musculoskeletal pain  | Knee, Ankle, Foot, Heel |
| Poutoglidou   | Greece    | Case report                         | Chronic Pain (4 months)                         | 1    | 10 years                      | Male                 | Pigmented villonodular synovitis  | Knee                    |
| Powell        | USA       | RCT                                 | Persistent pain (>1 month, less than 24 months) | 25*  | Mean 12.4 years               | NR                   | Juvenile idiopathic arthritis   | Foot, Ankle             |
| Prakash       | India     | Case report                         | Chronic pain (>6 months)                        | 1    | 8 years                       | Male                 | Metatarsal tubercular osteomyelitis   | Foot                    |
| Prigent       | France    | Case report                         | Chronic pain (>18 months)                       | 1    | 13 years                      | Male                 | Traumatic lower limb amputation   | Foot                    |
| Provenzano    | Sweden    | Cross-sectional                     | Chronic pain (Undefined)                        | 27   | Median 11 years               | NR                   | Osteogenesis imperfecta   | Hip, Knee, Foot         |
| Pybus         | UK        | Case report                         | Chronic pain (>3 months)                        | 1    | 4 years                       | Female               | Takayasu arteritis  | Lower limbs             |
| Rao 2021      | USA       | Case report                         | Chronic pain (>6 months)                        | 1    | 13 years                      | Female               | Osteochondroma  | Knee                    |
| Rao 2020      | USA       | Case report                         | Persistent pain (6 months)                      | 1    | 13 years                      | Male                 | Ewings sarcoma  | Hip, Thigh, Knee        |
| Rathleff 2013 | Denmark   | Cross-sectional population based    | Chronic pain (>36 months)                       | 57*  | Mean 17.2 years               | Female               | Patellofemoral pain syndrome  | Knee                    |
| Rathleff 2013 | Denmark   | Cross-sectional                     | Chronic pain (>18 months)                       | 57*  | Mean 17 years (SD ±1.1)       | Female               | Patellofemoral pain syndrome  | Knee                    |
| Rathleff 2019 | Denmark   | Prospective longitudinal            | Chronic pain (>2 years)                         | 169* | Mean 17 years                 | Female               | Musculoskeletal pain  | Knee                    |
| Rathleff 2016 | Denmark   | Prospective longitudinal            | Chronic pain (>2 years)                         | 180* | Mean 17 years                 | Female               | Patellofemoral pain syndrome  | Knee                    |
| Raza          | UK        | Case report                         | Chronic pain (>1 year)                          | 1    | 12 years                      | Female               | Synovial chondromatosis   | Hip                     |
| Remesal       | Spain     | Case report                         | Chronic pain (>1 year)                          | 1    | 9 years                       | Female               | Chronic infantile neurologic, cutaneous, and articular syndrome (CINCA)                 | Knee                    |
| Rethlefsen    | USA       | Retrospective medical record review | Chronic pain (>3 years)                         | 46*  | Mean 10.5 years (SD±2.1)      | NR                   | Post-op calcaneal sliding/lengthening osteotomy   | Foot                    |
| Riaz          | UK        | Case report                         | Chronic pain (>9 months)                        | 1    | 15 years                      | Male                 | Osteochondral lesion  | Ankle                   |
| Richard       | USA       | Prospective longitudinal            | Chronic pain (>12 months)                       | 51   | Mean 17.6 years (range 12-21) | 32 Female<br>19 Male | Post-operative hip preservation surgery   | Hip                     |
| Rodrigo       | Sri Lanka | Case report                         | Chronic pain (>3 months)                        | 1    | 17 years                      | Male                 | Tuberculosis infection  | Knee                    |
| Roth          | Germany   | Case report                         | Pain (12 months)                                | 1    | 7 years                       | Female               | Oligoarticular juvenile idiopathic arthritis  | Leg                     |
| Rukavina      | Croatia   | Case report                         | Chronic pain (>3 months)                        | 1    | 13 years at onset             | Female               | Primary OA w/ spondyloepiphyseal involvement (mutation of type II collagen gene COL2A1) | Hip, Knee, Ankle        |
| Ryan          | USA       | Case report                         | Pain (1.5 years)                                | 1    | 15 years                      | Female               | Sacral osteoid osteoma  | Leg, Knee               |

|                 |                |                                     |  |     |                                 |                     |  |             |
|-----------------|----------------|-------------------------------------|--|-----|---------------------------------|---------------------|--|-------------|
| Sahin           | Turkey         | Case report                         | Chronic pain (14 years)                  | 1   | 17 years                        | Female              | Synovial haemangioma                                 | Knee        |
| Salvati         | Italy          | Case series                         | Chronic pain (>6 months)                 | 1   | 17 years                        | Male                | Osteonecrosis femoral head                           | Hip         |
| Salzman         | USA            | Case report                         | Chronic pain (Undefined)                 | 1   | 3 years                         | Female              | Tuberculous osteomyelitis                            | Hip         |
| Sams            | USA            | Case report                         | Persistent pain (>12 months)             | 1   | 13 years                        | Male                | Developmental dysplasia & dislocation of the patella | Knee        |
| Sanchis-Alfonso | Spain          | Case report                         | Persistent pain (several months)         | 1   | 16 years                        | Female              | Localised Pigmented Villonodular Synovitis           | Ankle       |
| Santora         | USA            | Case report                         | Persistent pain (Undefined and 9 months) | 1   | 11 & 12 years                   | Female              | Intraarticular loose body                            | Hip         |
| Santos-Pereira  | Portugal       | Case report                         | Chronic pain (>6 months)                 | 1   | 13 years                        | Female              | Tillaux Fracture                                     | Ankle       |
| Sarage          | USA            | Case series                         | Chronic pain (>4 months)                 | 1   | 15 years                        | Female              | Cuboid-navicular tarsal coalition                    | Foot        |
| Sasapu          | USA            | Case report                         | Persistent pain (5 months)               | 1   | 10 years                        | Female              | Osteoid osteoma                                      | Leg         |
| Schejbalova     | Czech Republic | Retrospective medical record review | Chronic pain (>3 months)                 | 4*  | Range 9-18 years of age         | NR                  | Cerebral palsy                                       | Hip         |
| Schils          | USA            | Retrospective medical record review | Pain (several months)                    | 2*  | Range 16-34 years               | NR                  | Medial malleolar stress fracture                     | Ankle       |
| Schuett         | USA            | Retrospective medical record review | Chronic pain (>3 months)                 | 32* | Mean 14.4 years (SD $\pm 1.4$ ) | NR                  | Pelvic apophyseal avulsion fracture                  | Hip         |
| Scott           | USA            | Case report                         | Chronic pain (>3 months)                 | 1   | 7 years                         | Female              | Multiple epiphyseal dysplasia                        | Lower limbs |
| Sekiya          | USA            | Case report                         | Chronic pain (>1 year)                   | 1   | 17 years                        | Male                | Femoroacetabular impingement                         | Hip         |
| Shabir          | Pakistan       | Retrospective medical record review | Chronic pain (>6 months)                 | 5*  | Range 2-5 years                 | NR                  | Congenital dislocation of hip                        | Hip         |
| Shah (2016)     | USA            | Case report                         | Pain (4 months)                          | 1   | 6 years                         | Male                | Vitamin D deficiency                                 | Lower limb  |
| Shah (2022)     | USA            | Case report                         | Persistent pain (several years)          | 1   | 13 years                        | Female              | Fibro-adipose vascular anomaly                       | Thigh       |
| Sharma          | USA            | Case report                         | Persistent pain (>2 years)               | 1   | 12 years                        | Male                | Musculoskeletal pain syndrome                        | Hip, Knee   |
| Shetty          | USA            | Case report                         | Chronic pain (>7 months)                 | 1   | 7 years                         | Female              | Osteoid osteoma                                      | Hip         |
| Shimomura       | Japan          | Case report                         | Persistent pain (undefined)              | 1   | 9 years                         | Female              | Chronic non-bacterial osteomyelitis                  | Knee        |
| Shiner          | USA            | Case report                         | Pain (3 months)                          | 1   | 9 years                         | Female              | Acute lymphoblastic leukemia                         | Knee, Ankle |
| Shore           | USA            | Retrospective medical record review | Pain (12 months)                         | 29* | Mean 17 years                   | NR                  | Legg-calve-perthes                                   | Hip         |
| Shtarker        | Israel         | Retrospective medical record review | Chronic pain (Undefined)                 | 4*  | 11,12,13,16 years               | NR                  | Angular and rotational deformities of the lower limb | Lower limb  |
| Shukla          | UK             | Case series                         | Chronic pain (>3 months)                 | 4*  | 11, 14,15                       | 1 Female<br>3 Male  | Osteoid osteoma                                      | Foot        |
| Singh 2003      | USA            | Case report                         | Pain (2 years)                           | 2   | 13 & 15 years                   | Female              | Talo-patello-scapoid osteolysis                      | Knee, Ankle |
| Singh 2010      | USA            | Case report                         | Chronic pain (>5 months)                 | 1   | 16 years                        | Female              | Chronic synovitis                                    | Knee        |
| Sink            | USA            | Retrospective review                | Chronic pain (>3 months)                 | 35  | Mean 16 years (range 13-18)     | 30 Female<br>5 Male | Femoroacetabular impingement                         | Hip         |

|                    |             |   |  |     |   |                      |  |                  |
|--------------------|-------------|---|--|-----|---|----------------------|--|------------------|
| Sitati             | Kenya       | Case report                                   | Pain (1 year)                                    | 1   | 10 years  | Male                 | Sever disease  | Heel             |
| Skelley            | USA         | Case report                                   | Chronic pain (Undefined)                         | 1   | 13 years  | Male                 | Slipped capital femoral epiphysis with vitamin D deficiency            | Hip              |
| Smedbraten         | Norway      | Cross-sectional                               | Bodily pain (undefined)                          | 569 | Mean age 10.4 (4 <sup>th</sup> from); 15.5 (9 <sup>th</sup> form) | NR                   | Musculoskeletal pain   | Knee             |
| Somorjai           | Netherlands | Case report                                   | Persistent pain (>3 years)                       | 1   | 16 years  | Male                 | Intra-articular plica  | Ankle            |
| Sonobe             | Japan       | Retrospective                                 | Pain (3 months)                                  | 2*  | Mean 6 years  | Female               | Synovial hemangioma  | Knee             |
| Sornay-Soares      | France      | Retrospective                                 | Pain (12 months)                                 | 10  | Mean 14.9 years   | Female               | Juvenile idiopathic arthritis  | Knee             |
| Speirs             | USA         | Case series                                   | Chronic pain (>1 year)                           | 1   | 14 years  | Female               | Focal periphyseal oedema   | Knee             |
| Spencer-Gardner    | USA         | Retrospective review                          | Chronic pain (>3 months)                         | 10  | Mean 18 years   | NR                   | Ischial tuberosity apophyseal fracture                                 | Hip              |
| Sperotto 2013/2015 | Italy       | Cohort  | Chronic pain (>3 years)                          | 38* | Mean 14 years (range 8-16)  | NR                   | Benign joint hypermobility / Idiopathic musculoskeletal pain           | Hip, Lower limb  |
| Sredkova-Ruskova   | Bulgaria    | Case report                                   | Chronic pain (undefined)                         | 1   | 12  | Female               | Ehlers-Danlos syndrome and mutation in COL5A1 gene                     | Knee, Ankle      |
| Stanton            | USA         | Retrospective medical record review           | Chronic (3 months or >)                          | 36* | Mean 13.4 years (range 8-19)                                      | 24 Female<br>12 Male | Reflex Sympathetic Dystrophy   | Hip, Knee, Ankle |
| Steel              | UK          | Case series                                   | Chronic pain (Undefined & 4 years)               | 2   | 10 & 11 years   | Male                 | Gluteal/pelvic mass (NF1 and lipoma - both leading to hip dislocation) | Hip              |
| Stein 2010         | USA         | Case report                                   | Chronic (Undefined)                              | 1   | 13 years  | Male                 | Cerebral palsy   | Hip              |
| Stein 2005         | USA         | Case report                                   | Chronic (Undefined)                              | 1   | 13 years  | Male                 | Cerebral palsy   | Hip              |
| Styles             | USA         | Case series                                   | Chronic pain (Undefined)                         | 9*  | Range 9-21 years  | 3 Female<br>5 Male   | Sickle cell disease  | Hip              |
| Su                 | Taiwan      | Prospective cohort                            | Pain (>6 months)                                 | 11* | Mean 14.4 years (Range 10-25)                                     | NR                   | Hip dysplasia  | Hip              |
| Suh                | Korea       | Case report                                   | Persistent pain (7 months)                       | 1   | 9 years   | Male                 | Osteonecrosis  | Foot             |
| Sulko              | Poland      | Case report                                   | Pain (>12 months)                                | 1   | 17 years  | Male                 | Osteomyelitis and lymphoma   | Hip, Knee        |
| Suzuki             | Japan       | Cohort  | Persistent pain (Undefined)                      | NR  | Mean 8 years (range 5-13)   | NR                   | Perthes disease  | Hip              |
| Syu                | USA         | Case report                                   | Chronic pain (>3 months)                         | 1   | 11 years  | Female               | Chronic recurrent multifocal osteomyelitis                             | Hip, Knee, Ankle |
| Szer               | USA         | Cross-sectional observational                 | Chronic pain (>3 months)                         | 12* | Range 2-15 years  | NR                   | Lyme arthritis   | Hip, Knee, Ankle |
| Szesz              | Poland      | Prospective non-controlled clinical follow-up | Chronic pain (>8 months)                         | 4   | Mean 10 years   | NR                   | Post surgical pain   | Foot             |
| Tanir              | Turkey      | Retrospective medical record review           | Chronic pain Symptoms ranging from 2 to 900 days | 69* | Mean 9.02 (SD 3.59)(range 1-16)                                   | NR                   | Brucellosis  | Hip, Knee, Ankle |
| Taniwaki           | Japan       | Case series                                   | Persistent pain (>3 months)                      | 2   | 9 years   | 1 Female<br>1 Male   | Musculoskeletal pain   | Toe              |
| Tenuta             | USA         | Retrospective medical record review           | Chronic pain (12-120 months)                     | 10* | Mean 14 years   | NR                   | Cerebral palsy   | Hip              |
| Tezel              | Turkey      | Case report                                   | Chronic pain (>5 years)                          | 1   | 10 years  | Female               | Rickets  | Lower limb       |

|                 |             |                           |                                    |      |                               |                        |   |                        |
|-----------------|-------------|---------------------------|------------------------------------|------|-------------------------------|------------------------|---|------------------------|
| Thomas          | UK          | Case report               | Chronic pain (>3 months)           | 1    | 17 years                      | Male                   | Juvenile osteochondritis dissecans                            | Knee                   |
| Timm            | USA         | Prospective cohort        | Chronic pain (at least 6 months)   | 76*  | Mean 13.9 years               | NR                     | Ankle sprain  | Ankle                  |
| Tippett         | USA         | Case report               | Chronic pain (>3 months)           | 1    | 8 years                       | Male                   | Perthes disease   | Knee                   |
| Tiwara          | India       | Prospective observational | Persistent severe pain (>6 months) | 25   | Mean 9.08 years (range 4-12)  | NR                     | Legg-calve-perthes  | Hip                    |
| Tobias          | UK          | Prospective cohort study  | Chronic pain (>3 months)           | 1299 | Mean 13.8 years               | 776 Female<br>523 Male | Joint hypermobility   | Lower limb             |
| Tompkins        | USA         | Case series               | Chronic pain (>3 months)           | 3*   | 15 and 17 years               | 2 Female<br>1 Male     | Chondral defects of patella                                   | Knee                   |
| Tonsoline       | USA         | Case report               | Pain (>6 months)                   | 1    | 16 years                      | Male                   | Adductor tendinitis   | Groin                  |
| Toro            | Italy       | Case report               | Persistent pain (>3 months)        | 1    | 15 years                      | Male                   | Femoral neck fracture   | Hip                    |
| Trager          | USA         | Case report               | Chronic pain (>3 months)           | 1    | 15 years                      | Male                   | Juvenile osteochondritis dissecans                            | Knee                   |
| Traore          | Africa      | Case report               | Chronic Pain (Undefined)           | 1    | 17 years                      | Female                 | Juvenile idiopathic arthritis                                 | Knee, Feet             |
| Tripathy (2013) | UK          | Case report               | Pain (>4 months)                   | 1    | 12 years                      | Male                   | Hoffa fracture  | Knee                   |
| Tripathy (2020) | India       | Case series               | Chronic pain (>3 months)           | 3*   | Mean 9 years (range 4-17)     | 2 Female<br>1 Male     | Fibrous dysplasia (mono-ostotic polyostotic)                  | Hip, Leg, Tibia        |
| Tsimicalis      | Canada      | Prospective cohort        | Chronic pain (>4 months)           | 25*  | Mean 12 years (8-19 years)    | NR                     | Osteogenesis imperfecta                                       | Hip, Ankle             |
| Turati          | Italy       | Case report               | Chronic pain (undefined)           | 1    | 11 years                      | Female                 | Osteochondroma  | Foot                   |
| Tuzuner         | Turkey      | Case report               | Chronic pain (>1 year)             | 1    | 14 years                      | Female                 | Osteoid osteoma   | Ankle                  |
| Ukarapong       | USA         | Case report               | Chronic pain (Undefined)           | 1    | 13 years                      | Male                   | Homozygous mutation of ALPL and mild form of hypophosphatasia | Knee                   |
| Ulu             | Turkey      | Prospective cohort        | Chronic pain (3 months or >)       | 8*   | Median 12 years (range 3-17)  | NR                     | Chronic non-bacterial osteomyelitis                           | Ankle                  |
| Umrani          | Oman        | Case report               | Persistent pain (>4 months)        | 1    | 8 years                       | Male                   | Osteosarcoma  | Hip                    |
| Unadkat         | Africa      | Case series               | Chronic pain (>5 months)           | 1    | 2 years                       | Female                 | Acute lymphoblastic leukemia                                  | Lower limb             |
| Uwaezuoke       | Nigeria     | Case report               | Chronic pain (3 years)             | 1    | 14 years                      | Male                   | Osgood-schlatter's disease                                    | Knee                   |
| Van Leeuwen     | Netherlands | Prospective cohort        | Chronic pain (>3 months)           | 157  | 13 years                      | 100 Female<br>57 Male  | Musculoskeletal pain  | Hip, Knee, Ankle, Foot |
| Van straalen    | Netherlands | Prospective cohort        | Chronic pain (>3 months)           | 196  | Range 5-16 years              | 149 Female<br>47 Male  | Juvenile idiopathic arthritis & chronic musculoskeletal pain  | Hip, Knee, Ankle       |
| Vijayan         | USA         | Case report               | Pain (6 months)                    | 1    | 9 years                       | Female                 | Juvenile idiopathic arthritis                                 | Knee                   |
| Villalba        | Spain       | Prospective cohort        | Pain (>6 months)                   | 5    | Mean 15.2 years (range 12-18) | 1 Female<br>4 Male     | Osteochondritis dissecans                                     | Knee                   |
| Vukic           | Croatia     | Case report               | Chronic pain (>3 months)           | 1    | 15 years                      | Female                 | Juvenile fibromyalgia   | Hip                    |
| Waisel          | USA         | Case report               | Chronic pain (Undefined)           | 1    | 13 years                      | Female                 | Ehlers-Danlos   | Knee, Ankle            |
| Wang 2020       | USA         | Prospective cohort        | Chronic pain (>12 months)          | 22*  | Mean 12.3 years (SD±6.8)      | NR                     | Fibroadipose vascular anomaly (FAVA)                          | Hip, Knee, Ankle, Foot |

|             |             |                                     |   |          |                                    |                       |   |                  |
|-------------|-------------|-------------------------------------|---|----------|------------------------------------|-----------------------|---|------------------|
| Wang 2021   | China       | Retrospective medical record review | Chronic pain (post-op follow up 10-71 months) | 6 (feet) | Mean 12.8 years (range 11-20)      | NR                    | Sinus tarsi pain following subtalar arthroereisis | Foot             |
| Ward (2004) | Canada      | Case report                         | Chronic pain (Undefined)                      | 1        | 12 years                           | Female                | Osteopathia striata with cranial sclerosis        | Hip, Knee        |
| Ward (2023) | Ireland     | Prospective cross-sectional         | Chronic pain (>3 months)                      | 80       | Mean 11.6 years                    | 54 Female<br>26 Male  | Hypermobility                                     | Knee, Ankle      |
| Washington  | Thailand    | Case report                         | Pain (10 months)                              | 1        | 5 years                            | Male                  | Miliary & osteoarticular tuberculosis             | Hip              |
| Watanabe    | Japan       | Case report                         | Persistent pain (>6 months)                   | 1        | 3 years                            | Female                | Synovial hemangioma                               | Knee             |
| Watters     | USA         | Case report                         | Chronic (3 months or >)                       | 1        | 12 years                           | Male                  | Ewings sarcoma                                    | Hip              |
| Wei         | USA         | Case report                         | Persistent pain (Undefined)                   | 1        | 17 years                           | Female                | Gorham-stout syndrome                             | Hip              |
| Wells       | USA         | Retrospective medical record review | Chronic pain (follow up 6 months op)          | 6*       | 11,13,14,17 years                  | 4 Female<br>2 Male    | Osteonecrosis                                     | Hip              |
| Westbom     | Sweden      | Retrospective medical record review | Chronic pain (>6 months)                      | 185*     | Range 4-19 years                   | 80 Female<br>105 Male | Cerebral palsy                                    | Hip, Knee, Ankle |
| Widhalm     | Austria     | Cohort                              | Permanent pain (Undefined)                    | 20*      | Mean 14.2 years (SD±2.7)           | 9 Female<br>11 Male   | Cartilage lesion                                  | Knee             |
| Wiegerinck  | Netherlands | RCT                                 | Chronic pain (4 months)                       | 101      | Mean 10.6 years (SD±1.6)           | 25 Female<br>76 Male  | Calcaneal apophysitis                             | Ankle            |
| Wobma       | USA         | Case series                         | Persistent pain (12 months)                   | 1        | 10 years                           | Female                | Chronic recurrent multifocal osteomyelitis        | Hip              |
| Wong        | Hong Kong   | Case report                         | Pain (3 months)                               | 1        | 7 years                            | Female                | Neuroblastoma                                     | Hip              |
| Wong 2009   | USA         | Case report                         | Chronic pain (>3 months)                      | 1        | 12 years                           | Male                  | Patellofemoral pain syndrome & bipartite patella  | Knee             |
| Wong 2022a  | Denmark     | Prospective cohort                  | Chronic pain (Undefined)                      | 22       | Mean 9.1 years (range 2- 17 years) | 8 Female<br>14 Male   | Cerebral palsy                                    | Hip, Knee, Ankle |
| Wong 2022b  | USA         | Case report                         | Chronic pain (Undefined)                      | 1        | 12 years                           | Female                | Avascular necrosis                                | Hip              |
| Xie         | China       | Case report                         | Persistent pain (>9 months)                   | 1        | 4 years                            | Male                  | Post-surgical                                     | Fibular          |
| Yi          | China       | Case report                         | Pain (>12 months)                             | 1        | 6 years                            | Male                  | Synovial chondromatosis                           | Hip              |
| Yokouchi    | Japan       | Case report                         | Chronic pain (3 months)                       | 1        | 10 years                           | Male                  | Osteoid osteoma                                   | Mid tibia        |
| Yoshida     | Japan       | Case report                         | Persistent pain (Undefined)                   | 1        | 8 years                            | Female                | Osteosarcoma                                      | Knee             |
| Yothakol    | Thailand    | Case report                         | Chronic (5 months)                            | 1        | 12 years                           | Female                | Synovial chondromatosis                           | Knee             |
| Yuill       | Canada      | Case report                         | Persistent pain (>4 months)                   | 1        | 14 years                           | Male                  | Tibialis posterior tendonopathy                   | Foot             |
| Yuldashev   | Korea       | Retrospective medical cord review   | Chronic pain >10 years)                       | 1*       | 9 years                            | Male                  | Type I camuratingelmann                           | Tibia            |
| Zhang       | China       | Cohort                              | Chronic pain (Undefined)                      | *6       | Mean 14.3 years (range 13-17)      | Male                  | Haemophilic arthropathy                           | Knee             |
| Zhu         | China       | Case report                         | Chronic pain (>12 months)                     | 4*       | Range 12-14 years                  | 1 Female<br>3 Male    | Metaphyseal chondrodysplasia type schmid          | Knee             |



\* This is the population that each study described as meeting the inclusion criteria of having chronic lower limb pain

NR – Sex breakdown not reported for subpopulation of the full study