

Appendix 1: search strategy

Source (platform)	RCT filter applied (item number)	Search strategy
<p>OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present (Ovid SP)</p>	<p>Cochrane – McGill formula (24)</p>	<ol style="list-style-type: none"> 1. exp Cartilage, Articular/ or exp Cartilage/ or exp Fractures, Cartilage/ or exp Hyaline Cartilage/ or exp Cartilage Diseases/ 2. cartilag*.mp. 3. chondr*.mp. 4. condyl*.mp. 5. trochle*.mp. 6. 1 or 2 or 3 or 4 or 5 7. exp Knee/ or exp Knee Joint/ or exp Knee Injuries/ 8. exp Patella/in, pa, su, tr [Injuries, Pathology, Surgery, Transplantation] 9. knee.mp. 10. patella.mp. 11. 7 or 8 or 9 or 10 12. 6 and 11 13. exp Arthroplasty, Subchondral/ 14. exp Bone Transplantation/ 15. exp Transplantation, Autologous/ 16. exp Transplantation, Homologous/ 17. autologous transplantation*.mp. 18. chondrocyte* implant*.mp. 19. chondrocyte* transplantation*.mp. 20. microfracture*.mp. 21. mosaicplast*.mp. 22. chondrosphere.mp. 23. amic.mp. 24. ((randomized controlled trial or controlled clinical trial).pt. or randomized.ab. or randomised.ab. or placebo.ab. or drug therapy.fs. or randomly.ab. or trial.ab. or groups.ab.) not (exp animals/ not humans.sh.) 25. 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 26. 12 and 24 and 25
<p>EMBASE (Ovid SP)</p>	<p>Cochrane – McGill formula (25)</p>	<ol style="list-style-type: none"> 1. cartilage/ or hyaline cartilage/ or cartilage fracture/ or cartilage injury/ 2. cartilag*.mp. 3. chondr*.mp. 4. condyl*.mp. 5. trochle*.mp. 6. 1 or 2 or 3 or 4 or 5 7. knee/ or knee injury/ 8. patella/su [Surgery] 9. knee.mp. 10. patella.mp. 11. 7 or 8 or 9 or 10 12. 6 and 11 13. chondrocyte implant/ 14. engineered cartilage graft/ 15. mosaicplasty/ 16. microfracture/ 17. spherex/ 18. autologous transplantation*.mp. 19. chondrocyte* implant*.mp. 20. microfracture*.mp. 21. mosaicplast*.mp. 22. chondrosphere.mp. 23. amic.mp. 24. 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 25. (Randomized controlled trial/ or Controlled clinical study/ or random\$.ti,ab. or randomization/ or intermethod comparison/ or placebo.ti,ab. or (compare or compared or comparison).ti. or ((evaluated or evaluate or evaluating or assessed or assess) and (compare or compared or comparing or comparison)).ab. or (open adj label).ti,ab. or ((double or single or doubly or singly) adj (blind or blinded or blindly)).ti,ab. or double blind procedure/ or parallel group\$1.ti,ab. or (crossover or cross over).ti,ab. or ((assign\$ or match or matched or allocation) adj5 (alternate or group\$1 or intervention\$1 or patient\$1 or subject\$1 or participant\$1)).ti,ab. or (assigned or allocated).ti,ab. or (controlled adj7 (study or design or trial)).ti,ab. or (volunteer or volunteers).ti,ab. or human experiment/ or trial.ti.) not (((random\$ adj sampl\$ adj7 ("cross section\$" or questionnaire\$1 or survey\$ or database\$1)).ti,ab. not (comparative study/ or controlled study/ or randomi?ed controlled.ti,ab. or randomly assigned.ti,ab.)) or (Cross-sectional study/ not (randomized controlled trial/ or controlled clinical study/ or controlled study/ or randomi?ed controlled.ti,ab. or control group\$1.ti,ab.)) or (((case adj control\$) and random\$) not randomi?ed controlled).ti,ab. or (Systematic review not (trial or study)).ti. or (nonrandom\$ not random\$).ti,ab. or "Random field".ti,ab. or (random cluster adj3 sampl\$).ti,ab. or (review.ab. and review.pt.) not trial.ti.)

		<p>or ("we searched".ab. and (review.ti. or review.pt.)) or "update review".ab. or (databases adj4 searched).ab. or ((rat or rats or mouse or mice or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset\$1).ti. and animal experiment/) or (Animal experiment/ not (human experiment/ or human/)))</p> <p>26. 12 and 24 and 25</p>
CINAHL (EBSCOhost)	Cochrane – McGill formula (23)	<ol style="list-style-type: none"> 1. (MH "Cartilage+") OR (MH "Fractures, Cartilage") OR (MH "Cartilage, Articular") OR (MH "Cartilage Diseases+") OR (MH "Chondrocytes") / 20791 2. cartilag* 3. chondr* 4. condyl* 5. trochle* 6. 1 or 2 or 3 or 4 or 5 7. (MH "Knee Injuries, Articular Cartilage") OR (MH "Knee") OR (MH "Knee Injuries+") 8. (MH "Patella") 9. "knee" 10. "patella" 11. 7 or 8 or 9 or 10 12. 6 and 11 13. (MH "Bone Regeneration") 14. (MH "Knee Surgery") 15. (MH "Arthroplasty, Subchondral") 16. autologous transplantation* 17. chondrocyte* implant* 18. microfracture* 19. mosaicplast* 20. chondrosphere 21. amic 22. 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 23. (randomized controlled trials OR MH double-blind studies OR MH single-blind studies OR MH random assignment OR MH pretest-posttest design OR MH cluster sample OR TI (randomised OR randomized) OR AB (random*) OR TI (trial) OR (MH (sample size) AND AB (assigned OR allocated OR control) OR MH (placebos) OR PT (randomized controlled trial) OR AB (control W5 group) OR MH (crossover design) OR MH (comparative studies) OR AB (cluster W3 RCT)) NOT ((MH animals+ OR MH animal studies OR TI animal model*) NOT MH human) 844987 24. 12 and 22 and 23
Web of Science core collection (Clarivate – Web of Science)	Any	<ol style="list-style-type: none"> 1. ALL=(cartilag*) 2. ALL=(chondr*) 3. ALL=(condyl*) 4. ALL=(trochle*) 5. 1 or 2 or 3 or 4 6. ALL=(knee) 7. ALL=(patella) 8. 6 or 7 9. 5 and 8 10. ALL=(autologous transplantation) 11. ALL=(chondrocyte* implant*) 12. ALL=(chondrocyte* transplantation*) 13. ALL=(microfracture*) 14. ALL=(mosaicplast*) 15. ALL=(chondrosphere) 16. ALL=(amic) 17. 10 or 11 or 12 or 13 or 14 or 15 or 16 18. ALL=(randomi?ed controlled trial) 19. 9 and 17 and 18
CENTRAL (The Cochrane Library)	Any	<ol style="list-style-type: none"> 1. MeSH descriptor: [Cartilage] this term only 2. MeSH descriptor: [Cartilage, Articular] explode all trees 3. MeSH descriptor: [Fractures, Cartilage] this term only 4. cartilag*:kw 5. chondr*:kw 6. condyl*:kw 7. trochle*:kw 8. 1 or 2 or 3 or 4 or 5 or 6 or 7 9. MeSH descriptor: [Knee] this term only 10. MeSH descriptor: [Knee Injuries] explode all trees 11. knee:kw 12. patella:kw 13. MeSH descriptor: [Patella] this term only 14. 9 or 10 or 11 or 12 or 13 15. 8 and 14

		<ul style="list-style-type: none"> 16. MeSH descriptor: [Arthroplasty, Subchondral] explode all trees 17. MeSH descriptor: [Bone Transplantation] this term only 18. MeSH descriptor: [Transplantation, Autologous] this term only 19. autologous transplantation*:kw 20. chondrocyte* implant*:kw 21. chondrocyte* transplantation*:kw 22. microfracture*:kw 23. mosaicplast*.kw 24. chondrosphere 25. amic 26. 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 27. 15 and 26
SPORTDiscus (EBSCOhost)	Cochrane – McGill formula for Cinhal (17)	<ul style="list-style-type: none"> 1. cartilag* 2. chondr* 3. condyl* 4. trochle* 5. 1 or 2 or 3 or 4 6. "knee" 7. "patella" 8. 6 or 7 9. 5 and 8 10. autologous transplantation* 11. chondrocyte* implant* 12. microfracture* 13. mosaicplast* 14. chondrosphere 15. amic 16. 10 or 11 or 12 or 13 or 14 or 15 17. (randomized controlled trials OR MH double-blind studies OR MH single-blind studies OR MH random assignment OR MH pretest-posttest design OR MH cluster sample OR TI (randomised OR randomized) OR AB (random*) OR TI (trial) OR (MH (sample size) AND AB (assigned OR allocated OR control)) OR MH (placebos) OR PT (randomized controlled trial) OR AB (control W5 group) OR MH (crossover design) OR MH (comparative studies) OR AB (cluster W3 RCT)) NOT ((MH animals+ OR MH animal studies OR TI animal model*) NOT MH human) 82598 18. 9 and 16 and 17
Clinicaltrials.gov (www.clinicaltrials.gov)	Interventional	Interventional Studies knee AND (cartilage OR chondral OR osteochondral) AND (implantation OR transplantation OR microfracture OR mosaicplasty) Also searched for Implant.
ICTRP Search Portal [includes: Australian New Zealand Clinical Trials Registry; ClinicalTrilas.gov; ISRCTN; Chinese Clinical Trial Registry; Clinical Trials Registry – India; Clinical Research Information Service – Republic of Korea; German Clinical Trials Register; Iranian Registry of Clinical Trials; Japan Primary Registries Network; Pan African Clinical Trial Registry; Sri Lanka Clinical Trials Registry; The Netherlands National Trial Register] (http://apps.who.int/trialssearch)	Any	Title: Knee AND Condition: cartilage OR Chondral OR Osteochondral AND Intervention: Transplantation OR Implantation OR Microfracture OR Mosaicplasty Recruitment status ALL