

Table SM2. Details of the literature search strategy for survival studies.

PubMed

("Joint Prosthesis"[Mesh:NoExp] OR "Hip Prosthesis"[Mesh] OR "Knee Prosthesis"[Mesh] OR "hip prosthesis"[tiab] OR "knee prosthesis"[tiab] OR "hip prostheses"[tiab] OR "knee prostheses"[tiab] OR "prosthetic hip"[tiab] OR "prosthetic knee"[tiab] OR "TKA"[tiab] OR "THA"[tiab] OR "THR"[tiab] OR "TKR"[tiab] OR "joint replacement"[tiab] OR "Arthroplasty, Replacement"[mesh:NoExp] OR "total knee replacement"[tiab] OR "total hip replacement"[tiab] OR "total knee arthroplasty"[tiab] OR "total hip arthroplasty"[tiab] OR "Arthroplasty, Replacement, Hip"[Mesh] OR "Arthroplasty, Replacement, Knee"[Mesh]) AND ("Prosthesis Failure"[Mesh:NoExp] OR "Prosthesis Failures" [tiab] OR "Prosthesis Failure"[tiab] OR "Prosthetic Failure"[tiab] OR "Prosthetic Failures"[tiab] OR "Prosthesis Survival" [tiab] OR "Prosthesis Survivals"[tiab] OR "Prosthesis Durability" [tiab] OR "Prosthesis Durabilities" [tiab] OR "Prosthesis Loosening" [tiab] OR "Prosthesis Loosenings" [tiab] OR "prosthetic loosening" [tiab] OR "aseptic loosening" [tiab] OR "implant loosening" [tiab] OR "implant failure" [tiab] OR "Prosthesis migration"[tiab] OR "Prosthesis migrations"[tiab]) AND ("survival analysis"[MeSH:NoExp] OR "Survival Analyses" [tiab] OR "Survival Analysis"[tiab] OR "Survival Rates" [tiab] OR "Survival Rate"[tiab])

Filters: from 2008 - 2022/12/28

Web of Science

TS=("Joint Prosthe*" OR "hip prosthe*" OR "knee prosthe*" OR TKA OR TKR OR THA OR THR OR "hip arthroplast*" OR "knee arthroplast*" OR "knee replacement*" OR "hip replacement*") AND TS=("Prosthesis Failure*" OR "Prosthetic Failure*" OR "Prosthesis Survival*" OR "Prosthetic Survival*" OR "Prosthesis Durab*" OR "Prosthesis Loosening*" OR "prosthetic loosening*" OR "aseptic loosening*" OR "implant loosening*" OR "implant failure*" OR "Prosthesis migration*" OR "Prosthetic migration*") AND TI=(surviv*) AND PY=(2008-2023)

Cochrane database

("hip prosthesis" OR "knee prosthesis" OR "hip prostheses" OR "knee prostheses" OR TKA OR THA OR "hip arthroplasty" OR "knee arthroplasty" OR "knee replacement" OR "hip replacement"):ti,ab,kw AND ("Prosthesis Failure*" OR "Prosthetic Failure*" OR "Prosthesis Survival*" OR "Prosthetic Survival*" OR "Prosthesis Durab*" OR "Prosthesis Loosening*" OR "prosthetic loosening*" OR "aseptic loosening*" OR "implant loosening*" OR "implant failure*" OR "Prosthesis migration*" OR "Prosthetic migration*"):ti,ab,kw AND (surviv*):ti,ab,kw

Embase

(joint prosthesis/ OR exp hip prosthesis/ OR exp knee prosthesis/ OR "hip prosthe*".ti,ab. OR "hip arthroplast*".ti,ab. OR "hip replacement*".ti,ab. OR "knee prosthe*".ti,ab. OR "knee arthroplast*".ti,ab. OR "knee replacement*".ti,ab. OR "prosthetic hip*".ti,ab. OR "prosthetic knee*".ti,ab. OR "TKA".ti,ab. OR "TKR".ti,ab. OR "THA".ti,ab. OR "THR".ti,ab. OR "joint replacement*".ti,ab. OR replacement arthroplasty/ OR exp hip replacement/ OR exp knee replacement/) AND (exp prosthesis loosening/ OR "Prosthesis Failure*".ti,ab. OR "Prosthetic Failure*".ti,ab. OR "Prosthesis Survival*".ti,ab. OR "Prosthesis Durab*".ti,ab. OR "Prosthesis Loosening*".ti,ab. OR "prosthetic loosening*".ti,ab. OR "aseptic loosening*".ti,ab. OR "implant loosening*".ti,ab. OR "implant failure*".ti,ab. OR "Prosthesis migration*".ti,ab. OR "Prosthetic migration*".ti,ab.) AND (exp survival analysis/ OR "Survival Analyses".ti,ab. OR "Survival Analysis".ti,ab. OR "Survival Rate*".ti,ab.) NOT (conference OR conference abstract OR "conference review").pt. AND 2008:2023.(sa_year).

Google Scholar

"Total knee arthroplasty" AND "loosening" AND "survival" from 2008 to 2023, no citations, no patents

Table SM3. Details of the literature search strategy for RSA studies.

PubMed

("Photogrammetry"[Mesh:NoExp] OR Radiostereometric Analysis [Mesh] OR "roentgen stereophotogrammetric analysis"[tiab] OR "RSA" [tiab] OR "Radiostereometric" [tiab] OR "Radiostereometrics" [tiab] OR "stereophotogrammetric" [tiab] OR "stereophotogrammetrics" [tiab] OR "stereophotogrammetry" [tiab] OR "stereophotogrammetric" [tiab] OR "stereophotogrammetrics" [tiab] OR "stereophotogrammetry" [tiab] OR "Photofluorography" [Mesh] OR "roentgen fluoroscopic"[tiab] OR "roentgen fluoroscopies"[tiab] OR "roentgen fluoroscopy"[tiab])) AND (("Joint Prosthesis"[Mesh:NoExp] OR "Hip Prosthesis"[Mesh] OR "Knee Prosthesis"[Mesh] OR "hip prosthesis"[tiab] OR "knee prosthesis"[tiab] OR "hip prostheses"[tiab] OR "knee prostheses"[tiab] OR "prosthetic hip"[tiab] OR "prosthetic knee"[tiab] OR "TKA"[tiab] OR "THA"[tiab] OR "THR"[tiab] OR "TKR"[tiab] OR "joint replacement"[tiab] OR "Arthroplasty, Replacement"[mesh:NoExp] OR "total knee replacement"[tiab] OR "total hip replacement"[tiab] OR "total knee arthroplasty"[tiab] OR "total hip arthroplasty"[tiab] OR "Arthroplasty, Replacement, Hip"[Mesh] OR "Arthroplasty, Replacement, Knee"[Mesh]))

Filters: from 2008 - 2022/12/28

Web of Science

TS=("Photogrammetr*" OR "RSA" OR "radiostereometr*" OR "radio-stereometr*" OR "stereophotogrammetr*" OR "stereo-photogrammetr*" OR "roentgen fluoroscop*" OR "Photofluorograph*" OR "Photo-fluorograph*") AND TS=("Joint Prosthe*" OR "hip prosthe*" OR "knee prosthe*" OR TKA OR TKR OR THA OR THR OR "hip arthroplast*" OR "knee arthroplast*" OR "knee replacement*" OR "hip replacement*") AND PY=(2016-2023)

Cochrane database

("Photogrammetr*" OR "RSA" OR "radiostereometr*" OR "radio-stereometr*" OR "stereophotogrammetr*" OR "stereophotogrammetr*" OR "roentgen fluoroscop*" OR "Photofluorograph*" OR "Photo-fluorograph*"):ti,ab,kw AND ("Joint Prosthe*" OR "hip prosthe*" OR "knee prosthe*" OR TKA OR TKR OR THA OR THR OR "hip arthroplast*" OR "knee arthroplast*" OR "knee replacement*" OR "hip replacement*"):ti,ab,kw

Embase

(Stereophotogrammetry/ OR exp radiostereometric analysis/ OR "RSA".ti,ab. OR "Radiostereometr*".ti,ab. OR "Radio-stereometr*".ti,ab. OR "stereophotogrammetr*".ti,ab. OR "stereo-photogrammetr*".ti,ab. OR exp fluorography/ OR "Photofluorograph*".ti,ab. OR "Photo-fluorograph*".ti,ab. OR "roentgen fluoroscop*".ti,ab.) AND (joint prosthesis/ OR exp hip prosthesis/ OR exp knee prosthesis/ OR "hip prosthe*".ti,ab. OR "hip arthroplast*".ti,ab. OR "hip replacement*".ti,ab. OR "knee prosthe*".ti,ab. OR "knee arthroplast*".ti,ab. OR "knee replacement*".ti,ab. OR "prosthetic hip*".ti,ab. OR "prosthetic knee*".ti,ab. OR "TKA".ti,ab. OR "TKR".ti,ab. OR "THA".ti,ab. OR "THR".ti,ab. OR "joint replacement*".ti,ab. OR replacement arthroplasty/ OR exp hip replacement/ OR exp knee replacement/) AND 2016:2023.(sa_year). NOT (conference OR conference abstract OR "conference review").pt.

Google Scholar

"Total knee arthroplasty" AND "radiostereometric" from 2016 to 2023, no citations, no patents

SM4. Match score item calculation

Age	Studies score 1 point for age if the mean age difference between matching studies is < 5 years; otherwise, 0 points if it exceeds 5 years or when it is not reported.
Gender	Studies score 1 point if the percentage difference between matching studies in females is < 10%; otherwise, 0 points if it exceeds 10% or when it is not reported.
Diagnosis	Studies score 1 point if the percentage difference between matching studies in diagnosis (osteoarthritis) is < 10%; otherwise, 0 points if it exceeds 10% or when it is not reported.
Hospital type	Studies score 1 point if the studies were performed in similar type of hospitals (i.e. Academic, Developer, Special institute, High volume, Public); otherwise, 0 points if not or when it is not reported.
Continent	Studies score 1 point if the studies were performed on the same continent; otherwise, 0 points if not or when it is not reported.

The match score was determined by a Delphi-study among 37 independent experts (Pijls et al. 2011 (doi: [10.1186/1471-2474-12-173](https://doi.org/10.1186/1471-2474-12-173))). The score ranges from 0 (poor) to 5 (excellent) points and is based on age, gender, diagnosis, hospital type, and continent.

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