Bijlagen bij Conceptrichtlijn Chronische posttraumatische anterieure schouderinstabiliteit

INITIATIEF
Nederlandse Orthopaedische Vereniging (NOV)

IN SAMENWERKING MET
Koninklijk Nederlands Genootschap voor Fysiotherapie (KNGF)
Nederlandse Vereniging voor Heelkunde (NVvH)
Nederlandse Vereniging voor Radiologie (NVvR)
Vereniging voor Sport Geneeskunde (VSG)
Nationale Vereniging ReumaZorg Nederland

MET ONDERSTEUNING VAN
Kennisinstituut van de Federatie Medisch Specialisten

FINANCIERING
De richtlijnontwikkeling werd gefinancierd uit de Kwaliteitsgelden Medisch Specialisten (SKMS).

Inhoudsopgave

Bijlagen Module 2.1 Beeldvorming MRI of CT

Table 1 - Evidence tabellen

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Reference test</th><th>Follow-up</th><th>Outcome measures and effect size</th><th>Comments</th></tr>
<tr>
<td>Acid, 2012</td>
<td>Type of study[1]:
Cross-sectional study

Setting and country:
Radiology department, France

Funding and conflicts of interest:
No information available.</td>
<td>Inclusion criteria:
anterior shoulder instability with proposed arthroscopic treatment; MDCT arthrography and MR arthrography of the shoulder performed on the same day in our institution, according to a standardized protocol as part of the preoperative workup; and arthroscopy of the shoulder performed by the same</td>
<td>Describe index test:
MDCT arthrography: 16-MDCT helical unit (LightSpeed 16 Plus, GE Healthcare)

Comparator test[2]:
MR arthrography: 1.5-T unit (Intera, Philips Healthcare)</td>
<td>Describe reference test[3]:
Arthroscopic: performed by the same orthopedic surgeon specialized in shoulder and elbow surgery.</td>
<td>Time between the index test en reference test:
<1 month

For how many participants were no complete outcome data available?
N (%) 0.

Reasons for incomplete outcome data described?
Not applicable.</td>
<td>Humeral head fracture
<table>
<tr><td>N = 39/40</td><td>Sens</td><td>Spec</td><td>PPV</td><td>NPV</td></tr>
<tr><td>MDCTA</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
<tr><td>MRA</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
</table>
Glenoid rim fracture
<table>
<tr><td>N = 12/40</td><td>Sens</td><td>Spec</td><td>PPV</td><td>NPV</td></tr>
<tr><td>MDCTA</td><td>100%</td><td>96%</td><td>92%</td><td>100%</td></tr>
<tr><td>MRA</td><td>67%</td><td>100%</td><td>100%</td><td>87%</td></tr>
</table>
</td>
<td>Conclusion in the article:
MDCT arthrography showed better accuracy than did MR arthrography in the detection of osseous, cartilage, and labroligamentous injuries related to anterior shoulder instability. Because MDCT arthrography was particularly reliable for the detection of glenoid rim fractures and humeral avulsion of the inferior glenohumeral ligament lesions, which represent crucial findings in the preoperative planning, this technique may beneficially affect treatment by means of selecting the proper surgical treatment.</td>
</tr>
</table>

[1] In geval van een case-control design moeten de patiëntkarakteristieken per groep (cases en controls) worden uitgewerkt. NB; case control studies zullen de accuratesse overschatten (Lijmer et al., 1999)

[2] Comparator test is vergelijkbaar met de C uit de PICO van een interventievraag. Er kunnen ook meerdere tests worden vergeleken. Voeg die toe als comparator test 2 etc. Let op: de comparator test kan nooit de referentiestandaard zijn.

[3] De referentiestandaard is de test waarmee definitief wordt aangetoond of iemand al dan niet ziek is. Idealiter is de referentiestandaard de Gouden standaard (100% sensitief en 100% specifiek). Let op! dit is niet de "comparison test/index 2".

[4] Beschrijf de statistische parameters voor de vergelijking van de indextest(en) met de referentietest, en voor de vergelijking tussen de indextesten onderling (als er twee of meer indextesten worden vergeleken).

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Reference test	Follow-up	Outcome measures and effect size	Comments
		orthopedic surgeon, with a prospective description of the intraarticular lesions related to anterior shoulder instability. **Exclusion criteria:** a history of arthroscopic or open shoulder surgery, and a time delay between imaging and arthroscopy longer than 1 month. **N=40** **Prevalence:** See outcome measures **Mean age (range):** 26 (17-48 ys) **Sex:** 75% M / 25% F					

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Reference test</th><th>Follow-up</th><th>Outcome measures and effect size</th><th>Comments</th></tr>
<tr>
<td>Khedr, 2013</td>
<td>Type of study: Cross-sectional study

Setting and country: Radiology department, Egypt

Funding and conflicts of interest: None to declare.</td>
<td>Inclusion criteria: anterior shoulder instability with proposed arthroscopic treatment; MDCT arthrography and MR arthrography of the shoulder performed (with the time interval between the two examinations is 1 h) in our institution, according to a standardized protocol as part of the preoperative workup; and arthroscopy of the shoulder performed by the same orthopedic surgeon, with a prospective description of the intraarticular lesions related</td>
<td>Describe index test: MR arthrography: using MR arthrography: Magnitom Symphony 1.5 Tesla, Syngo, Seimens and dedicated phased array shoulder coil.

Comparator test: CT arthrography: a 64-MDCT helical unit (VCT 64, GE Healthcare)</td>
<td>Describe reference test: Arthroscopic: performed by the same orthopedic surgeon specialized in shoulder and elbow surgery.</td>
<td>Time between the index test en reference test: <1 month;

For how many participants were no complete outcome data available? N (%) 0

Reasons for incomplete outcome data described? Not applicable.</td>
<td>Humeral head fracture
<table>
<tr><th>N =27/47</th><th>Sens</th><th>Spec</th><th>PPV</th><th>NPV</th><th>Accuracy</th></tr>
<tr><td>MDCTA</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
<tr><td>MRI</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
</table>
Glenoid fracture
<table>
<tr><th>N = 7/47</th><th>Sens</th><th>Spec</th><th>PPV</th><th>NPV</th><th>Accuracy</th></tr>
<tr><td>MDCTA</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
<tr><td>MRI</td><td>71.4%</td><td>97.5%</td><td>83.3%</td><td>95.2%</td><td>95.7%</td></tr>
</table>
</td>
<td>Conclusion in the article: CTA and MRA were equivalent in demonstrating labro-ligamentous and cartilaginous lesions associated with shoulder instability. CTA was superior in detecting post operative instability and glenoid rim osseous lesions that are known to be a decisional element in the surgical strategy. Hence, CTA may be considered a method of choice in the preoperative evaluation of shoulder anterior instability.</td>
</tr>
</table>

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Reference test</th><th>Follow-up</th><th>Outcome measures and effect size</th><th>Comments</th></tr>
<tr><td></td><td></td><td>to anterior shoulder instability.

Exclusion criteria:
a time delay between imaging and arthroscopy longer than 1 month.
N=47

Prevalence:
See outcome measures

Mean age (range): 26 (21-48)

Sex: 35/47 M / 12/47 F</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Mahmoud, 2013</td><td>Type of study:
Cross-sectional study

Setting and country:
Department of diagnostic radiology, Egypt</td><td>Inclusion criteria:
consecutive patients referred from the orthopedic clinic with planned arthroscopy for a clinical diagnosis of shoulder lesion.</td><td>Describe index test:
MDCTA, a 64 slice MDCT.

Comparator test:
MRI, a 1.5-T MRI system (Gyroscan NT, Philips Medical Systems),</td><td>Describe reference test:
Arthroscopy: All patients subsequently underwent shoulder arthroscopy, and care was taken to evaluate all the compartments</td><td>Time between the index test en reference test:
<100 days

For how many participants were no complete outcome</td><td>Hill-Sachs (and bone lesions)<table><tr><td>N = 11/31</td><td>Sens</td><td>Spec</td><td>PPV</td><td>NPV</td><td>Accuracy</td></tr><tr><td>MDCTA</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr><tr><td>MRA</td><td>81.8%</td><td>95.2%</td><td>90%</td><td>91%</td><td>90.6%</td></tr></table></td><td>Conclusion in the article:
The diagnostic performance of MDCTA is comparable with MRA for labral lesions, including SLAP and Bankart lesions, Hill-Sachs lesions, and full-thickness rotator cuff tears.</td></tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Reference test	Follow-up	Outcome measures and effect size	Comments
	Funding and conflicts of interest: Not reported**.**	**Exclusion criteria:** fractures, septic shoulder, and a gap of more than 100 days between the imaging and the operation. Also all metallic (non-titanium) body implants (that may include cardiac pacemakers, brain aneurysm clips, cochlear implants, vascular stents) and early pregnancy were con- sidered an absolute contraindication to the performance of MRA and MDCTA procedures, respectively. **N**=31 **Prevalence:** See outcome measures		of the shoulder. After the completion of surgery, the arthroscopic findings were incorporated on a standard form by the operator.	**data available? N (%)** 0 **Reasons for incomplete outcome data described?** Not applicable.		

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Reference test</th><th>Follow-up</th><th>Outcome measures and effect size</th><th>Comments</th></tr>
<tr><td></td><td></td><td>Age range: 21-70 ys

Sex: 24/31 M / 7/31 F</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Moroder, 2013</td><td>Type of study: Retrospective diagnostic study

Setting and country: surgical department, Germany

Funding and conflicts of interest: none.</td><td>Inclusion criteria:
(1) history of recurrent anterior shoulder instability, including failed prior arthroscopic or open stabilization surgery; and (2) complete pre-operative MRI and CT-scans with 3D-reconstruction of the glenoid.

Exclusion criteria:
None.

N=48/83 patients were surgically treated at the author’s institution for recurrent anterior</td><td>Describe index test: CT, a 64-slice CT scanner (Siemens Somatom Sensation 64, Siemens, Erlangen/Germany)

Comparator test: MRI: obtained by the patients at 23 different radiological institutions. At least 1.5 T devices were used.</td><td>Describe reference test: open surgery:
All 48 patients underwent surgical stabilization at the author’s institution. All shoulder stabilization surgeries were performed in beach chair position under general anesthesia in combination with an interscalene nerve block. A standard arthroscopic capsulo- labral repair is performed to treat labral lesions. A posterior, antero-superior and antero-</td><td>Time between the index test en reference test:
Not reported.

For how many participants were no complete outcome data available? N (%)
35 (35/84)

Reasons for incomplete outcome data described?
Missing CT and MRI.</td><td>Significant glenoid defect (defect >=20% of the glenoid width)
<table><tr><td>N = 17/48</td><td>Sens</td><td>Spec</td><td>PPV</td><td>NPV</td></tr><tr><td>CT</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr><tr><td>MRI</td><td>35.3%</td><td>100%</td><td>100%</td><td>73.8%</td></tr></table>
Hill-Sachs lesion
<table><tr><td>N = 43/48</td><td>Sens</td><td>Spec</td><td>PPV</td><td>NPV</td></tr><tr><td>CT</td><td>95.3%</td><td>80%</td><td>97.6%</td><td>66.7%</td></tr><tr><td>MRI</td><td>86.0%</td><td>80%</td><td>100%</td><td>73.8%</td></tr></table></td><td>Conclusion in the article:
Despite the advantages of MRI in the detection of soft tissue damages in recurrent anterior shoulder instability CT imaging proved to be more important for pre-operative planning by prevailing in the detection of glenoid defects. Therefore, the replacement of MRI as preoperative imaging standard with CT imaging is recommended.</td></tr>
</table>

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Reference test</th><th>Follow-up</th><th>Outcome measures and effect size</th><th>Comments</th></tr>
<tr><td></td><td></td><td>shoulder instability.

Prevalence:
See outcome measures

Mean age (range): 30.8 (20-78)

Sex: 40/48 M / 8/48 F</td><td></td><td>inferior portal has been used. Bony Bankart lesions with a significant fragment size have been addressed by arthroscopic or open screw fixation to restore the bony anatomy of the anterior glenoid rim.</td><td></td><td></td><td></td></tr>
<tr><td>Oh, 2010</td><td>Type of study:
Cross-sectional study

Setting and country:
Department of Orthopaedic Surgery, Korea

Funding and conflicts of interest: none to declare.</td><td>Inclusion criteria:
consecutive patients who underwent CTA or MRA of the shoulder and a subsequent arthroscopic surgical procedure performed by a single surgeon.

Exclusion criteria:
fracture, septic shoulder, and a gap of more than 100 days between the</td><td>Describe index test:
CTA: a 16-channel MDCT (Mx 8000 IDT, Philips Medical Systems, Best, Netherlands)

Comparator test:
MRA: 1.5 T system (Gyroscan Intera, Philips)</td><td>Describe reference test:
shoulder arthroscopy</td><td>Time between the index test en reference test:
<100 days

For how many participants were no complete outcome data available?
N (%)
20/168

Reasons for incomplete outcome</td><td>Hill-Sachs (and bone lesions)<table><tr><th></th><th>Sens</th><th>Spec</th><th>PPV</th><th>NPV</th><th>Accu</th><th>AUROC</th></tr><tr><td>CTA N=?/78</td><td>93%</td><td>90%</td><td>67%</td><td>98%</td><td>90%</td><td>0.915(0.83-1.0)</td></tr><tr><td>MRA N=?/70</td><td>75%</td><td>98%</td><td>86%</td><td>97%</td><td>96%</td><td>0.866(0.684-1.0)</td></tr></table></td><td>Conclusion in the article:
CTA is a cost-effective, useful method in the preoperative evaluation of labral abnormalities, such as Bankart and SLAP lesions. It may also be useful for the detection of full- thickness rotator cuff tears.</td></tr>
</table>

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Reference test</th><th>Follow-up</th><th>Outcome measures and effect size</th><th>Comments</th></tr>
<tr><td></td><td></td><td>imaging test and the operation.

N=148/168, of whom 78 were randomly referred for CTA and 70 patients for MRA

Prevalence:
See outcome measures

Mean age (range):46.6 (17-78)

Sex: 89/168 M / 59/168 F</td><td></td><td></td><td>data described?
Yes. See exclusion criteria.</td><td></td><td></td></tr>
<tr><td>Sgroi, 2022</td><td>Type of study:
Cross-sectional study?
Setting and country:
department of orthopaedic surgery, Germany

Funding and conflicts of interest: None to declare.</td><td>Inclusion criteria:
patients with available preoperative AP radiographs, WP radiographs, CT, and MR images of the affected shoulder as potentially eligible.

Exclusion criteria:</td><td>Describe index test:
MRI, 1.5 Tesla MRI scanner without contrast.

Comparator test:
CT (Siemens Somatom Emotion, protocol: ST: 1.0 mm, pitch: 0.8, 130 kV)</td><td>Describe reference test:
Arthroscopic performed by two experienced, high-volume shoulder surgeons who were not involved in the radiologic examinations. The surgical in- dication was based on</td><td>Time between the index test and reference test:
Not reported.

For how many participants were no complete outcome data available?</td><td>Glenoid bone los
<table><tr><th>N=50</th><th>Sens</th><th>Spec</th><th>PPV</th><th>NPV</th><th>Accu</th><th>AUROC</th></tr><tr><td>CT</td><td>0.89(0.65-0.98)</td><td>0.69(0.50-0.83)</td><td>0.61(0.48-0.73)</td><td>0.91(0.74-0.97)</td><td>0.76(0.61-0.86)</td><td>0.79(0.66-0.92)</td></tr><tr><td>MRI</td><td>0.94(0.71-0.99)</td><td>0.63(0.45-0.80)</td><td>0.59(0.47-0.70)</td><td>0.95(0.74-0.99)</td><td>0.74(0.60-0.86)</td><td>0.83(0.70-0.94)</td></tr></table></td><td>Conclusion in the article:
CT and MRI can accurately detect glenoid bone loss. Considering the advantages including lower radiation exposure and the ability to assess the condition of the labrum using MRI, we believe MRI can help surgeons avoid ordering additional CT imaging in clinical practice for the diagnosis of anterior shoulder instability in patients with glenoid bone loss. Future studies</td></tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Reference test	Follow-up	Outcome measures and effect size	Comments
		1) not all planes or layers (such as sagittal, axial, or frontal) of each diagnostic imaging modalities were available; 2) insufficient quality of diagnostic images (for example, setting of the layers did not allow adequate en face view of the glenoid). **N**=63% (50/80) **Prevalence:** Not reported. **Mean age ± SD:** 26 ±12 **Sex:** 74% M / 26% F **Other important characteristics:** smokers 28%		patient history, clinical examination, and it was MRI-confirmed. All analyzed patients had clinically relevant anterior shoulder instability after at least one shoulder dislocation, and all patients were diagnosed with at least anterior labral Bankart lesion by MRI. In all patients, the decision regarding surgery was made in-dependently from the current reporting study. All Bankart lesions and glenoid bone losses were	**N (%)** 30 (37%) **Reasons for incomplete outcome data described?** Yes, see exclusion crieteria.		should investigate the reproducibility of our results with a larger number of patients, using other measurement methods that include examination of the opposite side or with three-dimensional reconstructions.

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Reference test	Follow-up	Outcome measures and effect size	Comments
				confirmed during diagnostic arthroscopy.			

Abbreviations: Sens, sensitivity; Spec, specificity; PPV, positive predictive value; NPV, negative predictive value; Accu, accuracy; AUROC, area under receiver operating characteristic curve.

Table 2 - Risk of bias assessment diagnostic accuracy studies (QUADAS II, 2011)

Study reference	Patient selection	Index test	Reference standard	Flow and timing	Comments with respect to applicability
Acid, 2012	Was a consecutive or random sample of patients enrolled? Unclear (patients were prospectively enrolled, further no explanation) Was a case-control design avoided? Yes Did the study avoid inappropriate exclusions? Yes	Were the index test results interpreted without knowledge of the results of the reference standard? Yes If a threshold was used, was it pre-specified? Thresholds were not defined. The criteria for the diagnoses were pre-described.	Is the reference standard likely to correctly classify the target condition? Yes Were the reference standard results interpreted without knowledge of the results of the index test? No (During arthroscopy, MDCT arthrography and MR arthrography images on film hard copy were available to the surgeon.)	Was there an appropriate interval between index test(s) and reference standard? Yes (<1 month) Did all patients receive a reference standard? Yes (one of the inclusion criteria) Did patients receive the same reference standard? Yes Were all patients included in the analysis? Probably yes	Are there concerns that the included patients do not match the review question? No Are there concerns that the index test, its conduct, or interpretation differ from the review question? No Are there concerns that the target condition as defined by the reference standard does not match the review question? No
	CONCLUSION: Could the selection of patients have introduced bias? **RISK: UNCLEAR**	CONCLUSION: Could the conduct or interpretation of the index test have introduced bias? **RISK: LOW**	CONCLUSION: Could the reference standard, its conduct, or its interpretation have introduced bias? **RISK: HIGH**	CONCLUSION Could the patient flow have introduced bias? **RISK: LOW**	
Khedr, 2013	Was a consecutive or random sample of patients enrolled? Unclear (patients were prospectively enrolled, further no explanation) Was a case-control design avoided? Yes Did the study avoid inappropriate exclusions? Yes	Were the index test results interpreted without knowledge of the results of the reference standard? Yes If a threshold was used, was it pre-specified? Thresholds were not defined. The criteria for the diagnoses were pre-described.	Is the reference standard likely to correctly classify the target condition? Yes Were the reference standard results interpreted without knowledge of the results of the index test? No (During arthroscopy, MDCT arthrography and MR arthrography images on film	Was there an appropriate interval between index test(s) and reference standard? Yes (<1 month) Did all patients receive a reference standard? Yes (one of the inclusion criteria) Did patients receive the same reference standard?	Are there concerns that the included patients do not match the review question? No Are there concerns that the index test, its conduct, or interpretation differ from the review question? No

Study reference	Patient selection	Index test	Reference standard	Flow and timing	Comments with respect to applicability
			hard copy were available to the surgeon.)	Yes Were all patients included in the analysis? Probably yes	Are there concerns that the target condition as defined by the reference standard does not match the review question? No
	CONCLUSION: Could the selection of patients have introduced bias? **RISK: UNCLEAR**	CONCLUSION: Could the conduct or interpretation of the index test have introduced bias? **RISK: LOW**	CONCLUSION: Could the reference standard, its conduct, or its interpretation have introduced bias? **RISK: HIGH**	CONCLUSION Could the patient flow have introduced bias? **RISK: LOW**	
Mahmoud, 2013	Was a consecutive or random sample of patients enrolled? Yes (consecutive) Was a case-control design avoided? Yes Did the study avoid inappropriate exclusions? Yes	Were the index test results interpreted without knowledge of the results of the reference standard? Yes If a threshold was used, was it pre-specified? Thresholds were not defined. The criteria for the diagnoses were pre-described.	Is the reference standard likely to correctly classify the target condition? Yes Were the reference standard results interpreted without knowledge of the results of the index test? Unclear (Unknown whether the MRI/CT results were blinded to the surgeon who the arthroscopy performed)	Was there an appropriate interval between index test(s) and reference standard? Yes (<100 days, longer than other studies, unclear whether this might influence the diagnosis since it is a maximal time range) Did all patients receive a reference standard? Yes Did patients receive the same reference standard? Unclear (No description about under which standard the arthroscopy was performed) Were all patients included in the analysis? Yes	Are there concerns that the included patients do not match the review question? No Are there concerns that the index test, its conduct, or interpretation differ from the review question? No Are there concerns that the target condition as defined by the reference standard does not match the review question? No

Study reference	Patient selection	Index test	Reference standard	Flow and timing	Comments with respect to applicability
	CONCLUSION: Could the selection of patients have introduced bias? **RISK: LOW**	CONCLUSION: Could the conduct or interpretation of the index test have introduced bias? **RISK: LOW**	CONCLUSION: Could the reference standard, its conduct, or its interpretation have introduced bias? **RISK: UNCLEAR**	CONCLUSION Could the patient flow have introduced bias? **RISK: UNCLEAR**	
Moroder, 2013	Was a consecutive or random sample of patients enrolled? No (only patients with complete pre-operative MRI from other physicians and CT-scans were included, 48/83 due to incompleteness of MRI or CT) Was a case-control design avoided? Yes Did the study avoid inappropriate exclusions? Yes	Were the index test results interpreted without knowledge of the results of the reference standard? No (The index tests were retrospectively evaluated. All available MRIs and CT-scans were re-evaluated for study purposes in a blinded fashion by the same musculoskeletal radiologist. Pathological findings were listed and compared with the intra-operatively described pathomorphological findings documented on the surgical report.) If a threshold was used, was it pre-specified? Thresholds were not defined.	Is the reference standard likely to correctly classify the target condition? Yes Were the reference standard results interpreted without knowledge of the results of the index test? Unclear (Not specifically described. However, the information from MRI and CI were used for the planning of the open surgery)	Was there an appropriate interval between index test(s) and reference standard? Unclear (Not described, MRI reports were from other physicians apart from the research institution; MRI and CT were retrospectively evaluated) Did all patients receive a reference standard? Yes Did patients receive the same reference standard? Yes Were all patients included in the analysis? Probably yes	Are there concerns that the included patients do not match the review question? Yes (All patients included in the analysis underwent surgical stabilization, among who the incidence of the outcomes might be higher than other diagnostic studies) Are there concerns that the index test, its conduct, or interpretation differ from the review question? Yes (MRI and CT were retrospectively evaluated after the surgery, and it was unclear whether the information from the index text were interpreted without the knowledge of the reference test, also the other way around) Are there concerns that the target condition as defined by the reference standard does not match the review question? Yes (open surgery was chosen over arthroscopy as the reference standard)

Study reference	Patient selection	Index test	Reference standard	Flow and timing	Comments with respect to applicability
	CONCLUSION: Could the selection of patients have introduced bias? **RISK: UNCLEAR**	CONCLUSION: Could the conduct or interpretation of the index test have introduced bias? **RISK: HIGH**	CONCLUSION: Could the reference standard, its conduct, or its interpretation have introduced bias? **RISK: UNCLEAR**	CONCLUSION Could the patient flow have introduced bias? **RISK: UNCLEAR**	
Oh, 2010	Was a consecutive or random sample of patients enrolled? Yes (consecutive. The present study ultimately enrolled 148 patients, of whom 78 were randomly referred for CTA and 70 patients for MRA. Patients were randomly selected to perform CT or MRI, but in Table 1 differences in patient characteristics are clearly shown) Was a case-control design avoided? No (The present study ultimately enrolled 148 patients, of whom 78 were randomly referred for CTA and 70 patients for MRA.) Did the study avoid inappropriate exclusions? Yes	Were the index test results interpreted without knowledge of the results of the reference standard? Yes If a threshold was used, was it pre-specified? Thresholds were not defined. The criteria for the diagnoses were not pre-described in detail. Whether this would have an influence on the results is not clear.	Is the reference standard likely to correctly classify the target condition? Yes Were the reference standard results interpreted without knowledge of the results of the index test? Unclear (Unknown whether the MRI/CT results were blinded to the surgeon who the arthroscopy performed)	Was there an appropriate interval between index test(s) and reference standard? Yes (<100 days, longer than other studies, unclear whether this might influence the diagnosis since it is a maximal time range) Did all patients receive a reference standard? Yes Did patients receive the same reference standard? Unclear (No description about under which standard the arthroscopy was performed) Were all patients included in the analysis? Probably yes	Are there concerns that the included patients do not match the review question? Yes (Patients were randomly selected to perform CT or MRI, but in Table 1 differences in patient characteristics are clearly shown) Are there concerns that the index test, its conduct, or interpretation differ from the review question? No Are there concerns that the target condition as defined by the reference standard does not match the review question? No
	CONCLUSION: Could the selection of patients have introduced bias? **RISK: HIGH**	CONCLUSION: Could the conduct or interpretation of the index test have introduced bias? **RISK: UNCLEAR**	CONCLUSION: Could the reference standard, its conduct, or its interpretation have introduced bias? **RISK: UNCLEAR**	CONCLUSION Could the patient flow have introduced bias? **RISK: UNCLEAR**	

Study reference	Patient selection	Index test	Reference standard	Flow and timing	Comments with respect to applicability
Sgroi, 2022	Was a consecutive or random sample of patients enrolled? No (only patients with available preoperative AP radiographs, WP radiographs, CT, and MR images of the affected shoulder as potentially eligible.) Was a case-control design avoided? Yes Did the study avoid inappropriate exclusions? Yes	Were the index test results interpreted without knowledge of the results of the reference standard? Unclear (The assessment was perioperatively performed and postoperatively analysed. During the analyzation, all imaging modalities were anonymized, but it is unclear whether it was blinded to the results from the arthroscopies.) If a threshold was used, was it pre-specified? Thresholds were not defined. The diagnosis focused on glenoid bone loss.	Is the reference standard likely to correctly classify the target condition? Yes Were the reference standard results interpreted without knowledge of the results of the index test? No (The surgical indication was based on patient history, clinical examination, and it was MRI-confirmed. All analysed patients had clinically relevant anterior shoulder instability after at least one shoulder dislocation, and all patients were diagnosed with at least anterior labral Bankart lesion by MRI.)	Was there an appropriate interval between index test(s) and reference standard? Unclear (No description about the interval between the preoperative assessment and the arthroscopies.) Did all patients receive a reference standard? Yes Did patients receive the same reference standard? Yes Were all patients included in the analysis? No (Not all planes or layers (such as sagittal, axial, or frontal) of each diagnostic imaging modalities were available and 6% (5 of 80) because of the insufficient quality of diagnostic images (for example, setting of the layers did not allow adequate en face view of the glenoid. The effect on the results is unclear).	Are there concerns that the included patients do not match the review question? Yes (All analyzed patients had clinically relevant anterior shoulder instability after at least one shoulder dislocation, and all patients were diagnosed with at least anterior labral Bankart lesion by MRI.) Are there concerns that the index test, its conduct, or interpretation differ from the review question? Unclear (The index tests were shortly described) Are there concerns that the target condition as defined by the reference standard does not match the review question? No
	CONCLUSION: Could the selection of patients have introduced bias? **RISK: UNCLEAR**	CONCLUSION: Could the conduct or interpretation of the index test have introduced bias? **RISK: UNCLEAR**	CONCLUSION: Could the reference standard, its conduct, or its interpretation have introduced bias? **RISK: HIGH**	CONCLUSION Could the patient flow have introduced bias? **RISK: UNCLEAR**	

Judgments on risk of bias are dependent on the research question: some items are more likely to introduce bias than others, and may be given more weight in the final conclusion on the overall risk of bias per domain:

1. Patient selection:
    - Consecutive or random sample has a low risk to introduce bias.
    - A case control design is very likely to overestimate accuracy and thus introduce bias.
    - Inappropriate exclusion is likely to introduce bias.
2. Index test:
    - This item is similar to “blinding” in intervention studies. The potential for bias is related to the subjectivity of index test interpretation and the order of testing.
    - Selecting the test threshold to optimise sensitivity and/or specificity may lead to overoptimistic estimates of test performance and introduce bias.
3. Reference standard:
    - When the reference standard is not 100% sensitive and 100% specific, disagreements between the index test and reference standard may be incorrect, which increases the risk of bias.
    - This item is similar to “blinding” in intervention studies. The potential for bias is related to the subjectivity of index test interpretation and the order of testing.
4. Flow and timing:
    - If there is a delay or if treatment is started between index test and reference standard, misclassification may occur due to recovery or deterioration of the condition, which increases the risk of bias.
    - If the results of the index test influence the decision on whether to perform the reference standard or which reference standard is used, estimated diagnostic accuracy may be biased.
    - All patients who were recruited into the study should be included in the analysis, if not, the risk of bias is increased.

Judgement on applicability:
1. Patient selection: there may be concerns regarding applicability if patients included in the study differ from those targeted by the review question, in terms of severity of the target condition, demographic features, presence of differential diagnosis or co-morbidity, setting of the study and previous testing protocols.
2. Index test: if index tests methods differ from those specified in the review question there may be concerns regarding applicability.
3. Reference standard: the reference standard may be free of bias but the target condition that it defines may differ from the target condition specified in the review question.

Table 3 – list of excluded studies

Reference	Reason for exclusion
3-D CT is the most reliable imaging modality when quantifying glenoid bone loss shoulder	Wrong outcome
Zero echo time imaging of the shoulder: Enhanced osseous detail by using MR imaging	Wrong outcome
Does Bone Loss Imaging Modality, Measurement Methodology, and Interobserver Reliability Alter Treatment in Glenohumeral Instability?	Wrong outcome
3D-MRI FRACTURE Sequence is equivalent to 3D-CT in quantifying bone loss and measuring shoulder morphology in patients with shoulder dislocation	Wrong outcome
Three-Dimensional Zero Echo Time Magnetic Resonance Imaging Versus 3-Dimensional Computed Tomography for Glenoid Bone Assessment	Wrong outcome
Shoulder joint instability evaluation by CT arthrography and MR arthro graphy	Wrong outcome
Assessment of glenoid bone loss and other osseous shoulder pathologies comparing MR-based CT-like images with conventional CT	Wrong outcome
Glenoid bone loss measurement in recurrent shoulder dislocation: Assessment of measurement agreement between CT and MRI	Wrong outcome
Diagnostic accuracy of MRI in the measurement of glenoid bone loss	Wrong outcome
3DMR osseous reconstructions of the shoulder using a gradient-echo based two-point Dixon reconstruction: A feasibility study	Wrong outcome
Use of 3D MR reconstructions in the evaluation of glenoid bone loss: A clinical study	Wrong outcome
Quantification of a glenoid defect with three-dimensional computed tomography and magnetic resonance imaging: a cadaveric study	Wrong outcome
Variability in quantifying the Hill-Sachs lesion: A scoping review	Wrong study design; unclear study population
A PROSPECTIVE STUDY TO ASSESS THE ROLE OF MAGNETIC RESONANCE IMAGING IN ASSESSING GLENOID BONE LOSS IN SHOULDER DISLOCATION	Wrong outcome
Comparison of computed tomography and 3D magnetic resonance imaging in evaluating glenohumeral instability bone loss	Wrong outcome
Automated 3-Dimensional Magnetic Resonance Imaging Allows for Accurate Evaluation of Glenoid Bone Loss Compared With 3-Dimensional Computed Tomography	Wrong outcome
Glenoid bone loss: Assessment with MR imaging	Wrong outcome
Feasibility of using an inversion-recovery ultrashort echo time (UTE) sequence for quantification of glenoid bone loss	Wrong outcome
How to measure a Hill-Sachs lesion: A systematic review	Unclear study population
The quantification of glenoid bone loss in anterior shoulder instability; MR-arthro compared to 3D-CT	Wrong outcome
Area Measurement Percentile of 3-Dimensional Computed Tomography Has the Highest Interobserver Reliability When Measuring Anterior Glenoid Bone Loss	Wrong outcome
Comparison of various imaging techniques to quantify glenoid bone loss in shoulder instability	Wrong outcome
With the exception of the Hill-Sachs interval, CT and MRI show no significant differences in the diagnostic value of the HSL measurement regardless of the measurement technique	Wrong outcome
MRI can assess glenoid bone loss after shoulder luxation: inter- and intra-individual comparison with CT	Wrong outcome
3D-MR vs. 3D-CT of the shoulder in patients with glenohumeral instability	Wrong outcome
Glenoid bone lesions: Comparison between 3D VIBE images in MR arthrography and nonarthrographic MSCT	Wrong outcome
Measurement of Glenoid Bone Loss With 3-Dimensional Magnetic Resonance Imaging: A Matched Computed Tomography Analysis	Wrong outcome
Glenoid bone loss in shoulder instability: Superiority of three-dimensional computed tomography over two-dimensional magnetic resonance imaging using established methodology	Wrong outcome
A Comparative Study on the Diagnostic Value of CTA and MRA in Anterior Dislocation of Shoulder	Wrong outcome

Three-Dimensional Magnetic Resonance Imaging Quantification of Glenoid Bone Loss Is Equivalent to 3-Dimensional Computed Tomography Quantification: Cadaveric Study	Wrong outcome
Glenoid bone loss in anterior shoulder dislocation: a multicentric study to assess the most reliable imaging method	Wrong outcome
Comparison of magnetic resonance imaging and computed tomography scans of the glenoid version in anterior dislocation of the shoulder	Wrong outcome

Zoekverantwoording

Cluster/richtlijn: Schouderinstabiliteit - Module 2 Posttraumatische schouderinstabiliteit	
Uitgangsvraag/modules: Welk (aanvullend?) beeldvormend onderzoek moet worden verricht bij post traumatische schouderinstabiliteit?	
Database(s): Embase.com, Ovid/Medline	Datum: 6-2-2024
Periode: vanaf 2000	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/922035
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen Schouderinstabiliteit en MRI. à De sleutelartikelen PMID 22996361, PMID 18061117 en PMID 35452020 worden gevonden met deze search. Zoals besproken is er gezocht met de P, I en het diagnostisch filter. In overleg zijn bij de P ook de zoektermen 'glenoid bone loss' en 'glenoid defect' meegenomen, omdat anders relevante artikelen gemist worden.	
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 6 februari 2024 systematisch gezocht naar systematische reviews, RCTs en observationele studies over de diagnostische accuratesse van MRI bij patiënten met verdenking op posttraumatische schouderinstabiliteit (ossale component). De literatuurzoekactie leverde 960 unieke treffers op.	

Zoekopbrengst 6-2-2024

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	80	11	83
RCT	199	30	210
Observationeel	633	206	667
Totaal	912	247	**960***

****in Rayyan***

Zoekstrategie Embase.com 6-2-2024

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR 'bankart lesion'/exp OR ((('shoulder*' OR 'gleno-humer*' OR 'glenoid*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*' OR 'defect*')):ti,ab,kw) OR (('shoulder*':ti,ab,kw OR glenoid*:ti,ab,kw OR 'gleno-humer*':ti,ab,kw OR 'humer*':ti,ab,kw OR 'scapulohumer*':ti,ab,kw OR 'glenohumer*':ti,ab,kw) AND (('bon*' NEAR/3 ('loss*' OR 'erosion*')):ti,ab,kw)) OR ((('bankart' OR 'hill-sachs') NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/3 ('hill sachs' OR 'bone loss*' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	17298
#2	'nuclear magnetic resonance imaging'/exp OR 'mri scanner'/exp OR ('magnetic resonance':ab,ti AND (image:ab,ti OR images:ab,ti OR imaging:ab,ti)) OR mri:ab,ti OR mris:ab,ti OR nmr:ab,ti OR mra:ab,ti OR mras:ab,ti OR	1604297

	zeugmatograph*:ab,ti OR 'mr tomography':ab,ti OR 'mr tomographies':ab,ti OR 'mr tomographic':ab,ti OR 'mr imag*':ti,ab,kw OR 'proton spin':ab,ti OR ((magneti*:ab,ti OR 'chemical shift':ab,ti) AND imaging:ab,ti) OR fmri:ab,ti OR fmris:ab,ti OR rsfmri:ti,ab,kw	
#3	'diagnostic procedure'/exp OR 'sensitivity and specificity'/de OR sensitivity:ab,ti OR specificity:ab,ti OR predict*:ab,ti OR 'roc curve':ab,ti OR 'receiver operator':ab,ti OR 'receiver operators':ab,ti OR likelihood:ab,ti OR 'diagnostic error'/exp OR 'diagnostic accuracy'/exp OR 'diagnostic test accuracy study'/exp OR 'inter observer':ab,ti OR 'intra observer':ab,ti OR interobserver:ab,ti OR intraobserver:ab,ti OR validity:ab,ti OR kappa:ab,ti OR reliability:ab,ti OR reproducibility:ab,ti OR ((test NEAR/2 're-test'):ab,ti) OR ((test NEAR/2 'retest'):ab,ti) OR 'reproducibility'/exp OR accuracy:ab,ti OR 'differential diagnosis'/exp OR 'validation study'/de OR 'measurement precision'/exp OR 'diagnostic value'/exp OR 'reliability'/exp OR 'predictive value'/exp OR ppv:ti,ab,kw OR npv:ti,ab,kw OR (((false OR true) NEAR/3 (negative OR positive)):ti,ab) OR diagnos*:ti,ab	24669709
#4	#1 AND #2 AND #3	2429
#5	#4 AND [2000-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	1863
#6	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	999431
#7	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	3963976
#8	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8055848
#9	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR	14796927

	'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR (('or' OR 'rr') NEAR/6 ci):ab)))	
#10	#5 AND #6 **– SR's**	80
#11	#5 AND #7 NOT #10 **– RCT's**	199
#12	#5 AND (#8 OR #9) NOT (#10 OR #11) **– Observationele studies**	633
#13	#10 OR #11 OR #12	912

Zoekstrategie Ovid/Medline 6-2-2024

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	13706
2	exp magnetic resonance imaging/ or ("magnetic resonance" and (image or images or imaging)).ti,ab,kf. or mri.ti,ab,kf. or mris.ti,ab,kf. or nmr.ti,ab,kf. or mra.ti,ab,kf. or mras.ti,ab,kf. or zeugmatograph*.ti,ab,kf. or "mr tomography".ti,ab,kf. or "mr tomographies".ti,ab,kf. or "mr tomographic".ti,ab,kf. or 'mr imag*'.ti,ab,kf. or "proton spin".ti,ab,kf. or ((magneti* or "chemical shift") and imaging).ti,ab,kf. or fmri.ti,ab,kf. or fmris.ti,ab,kf. or rsfmri.ti,ab,kf.	981588
3	exp "Sensitivity and Specificity"/ or (sensitivity or specificity).ti,ab. or (predict* or ROC-curve or receiver-operator*).ti,ab. or (likelihood or LR*).ti,ab. or exp Diagnostic Errors/ or (inter-observer or intra-observer or interobserver or intraobserver or	5006646

	validity or kappa or reliability).ti,ab. or reproducibility.ti,ab. or (test adj2 (re-test or retest)).ti,ab. or "Reproducibility of Results"/ or accuracy.ti,ab. or Diagnosis, Differential/ or Validation Study/ or ((false or true) adj3 (negative or positive)).ti,ab.	
4	1 and 2 and 3	408
5	limit 4 to yr="2000 -Current"	349
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	343
7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	724616
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2687808
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4645843
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or	5616453

	multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	
11	6 and 7 **– SR's**	11
12	(6 and 8) not 11 **– RCT's**	30
13	(6 and (9 or 10)) not (11 or 12) **– Observationele studies**	206
14	11 or 12 or 13	247

Bijlagen Module 2.2 Meetmethoden Glenoidaal botverlies

Table 1 - Summary of included studies

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Outcome measures and effect size</th><th>Risk of bias *</th></tr>
<tr><td colspan="7">Studies from systematic review Liu 2024</td></tr>
<tr><td>Lander 2022</td><td>Diagnostic study</td><td>N=18

Mean /median age ± SD/range:
34 (not reported)

Sex: 67% M/ 33% F</td><td>3D CT: 64-multidetector row CT and helical imaging

3D MRI (3T): Siemens Skyra (3 Tesla magnets)</td><td>Best-fit circle (circle diameter): The glenoid height line (blue) runs from the supraglenoid tubercle to the medial aspect of the inferior base. Glenoid bone loss size (orange) and circle diameter (green) was quantified with the glenoid height line marking the center of the circle. Percentage glenoid bone loss was determined as [(glenoid bone loss size/circle diameter) *100%].</td><td>
<table>
<tr><td>N=18</td><td>CT</td><td>MRI</td><td>Difference</td></tr>
<tr><td>GBL (%)</td><td>11.8</td><td>11.94</td><td>1.58±1.68</td></tr>
<tr><td>Glenoid defect (mm)</td><td>3.35</td><td>3.48</td><td>Not reported</td></tr>
</table>
Extracted from individual study:
Bland-Altman analysis
<table>
<tr><td rowspan="2">N=18</td><td rowspan="2">Mean difference</td><td colspan="2">95% limits of agreement</td></tr>
<tr><td>Upper</td><td>Lower</td></tr>
<tr><td>GBL (%), best fit circle: diameter bone loss/ diameter circle x100</td><td>0.08</td><td>3.80</td><td>-3.65</td></tr>
</table>
Glenoid track ([(0.83 * circle diameter) – glenoid bone loss size): After calculating the glenoid track for each imaging modality, we determined no difference between any of the 4 imaging modalities and, therefore, were identical (on vs. off) for each patient analysis</td><td>QUADAS-C
Patient selection: low
Index test: low
Reference standard: unclear
Flow & Timing: high</td></tr>
</table>

<table>
<tr>
<td>Lansdown 2019</td>
<td>Retrospective study</td>
<td>N=16

Mean /median age ± SD/range: 33.8±9.4

Sex: 69% M/ 31% F</td>
<td>3D CT: Not reported.

3D MRI (1.5T): 1.5-T imager (MAGNETOM Espree; Siemens Healthcare, Erlangen, Germany)</td>
<td>Best-fit circle (PICO method): A: area of a perfect circle that was fit to the inferior two-thirds of the intact glenoid (healthy shoulder)
B: remaining area of intact glenoid (injured shoulder)
GBL percentage=1-[(B/A) *100%]</td>
<td>
<table>
<tr><td>GBL (%)</td><td>CT</td><td>MRI</td><td>Difference</td></tr>
<tr><td>R1</td><td>13±8</td><td>13±7</td><td>2.19±1.65</td></tr>
<tr><td>R2</td><td>16±8</td><td>16±8</td><td>0.38±0.16</td></tr>
<tr><td>R2’</td><td>14±8</td><td>14±7</td><td>0.79±0.88</td></tr>
</table>
Extracted from individual study:
<table>
<tr><td rowspan="2">GBL (%) N=16</td><td rowspan="2">Mean</td><td colspan="2">95% limits of agreement</td><td rowspan="2">ICC</td></tr>
<tr><td>Upper</td><td>Lower</td></tr>
<tr><td>R1</td><td>Not reported</td><td>5.9%</td><td>-4.9%</td><td>0.94 (0.83-0.98)</td></tr>
<tr><td>R2</td><td>Not reported</td><td>0.9%</td><td>-0.8%</td><td>0.99 (0.99-1.00)</td></tr>
<tr><td>R2’</td><td>Not reported</td><td>2.6%</td><td>-1.9%</td><td>0.99 (0.97-1.00)</td></tr>
</table>
For 88% of the measurements (42 of 48), a less than 2% difference between MR- and CT-based estimates was found.
</td>
<td>QUADAS-C
Patient selection: high
Index test: low
Reference standard: unclear
Flow & Timing: high</td>
</tr>
</table>

<table>
<tr>
<td>Vopat 2018</td>
<td>Case-control study</td>
<td>N=8

Mean /median age ± SD/range: 44±19

Sex: 75% M/ 25% F</td>
<td>3D CT: Ethier a GE 64- or 16-slice CT scanner; GE Healthcare, Waukesha, WI

3D MRI (3T): 3-Tesla scanner (Siemens Trio; Siemens Healthcare)</td>
<td>Best-fit circle (PICO method): A: surface area of the best-fit circle
B: glenoid surface area (projected surface area of a glenoid socket within the best-fit circle)
GBL percentage = (A-B)/A *100%</td>
<td>GBL and glenoid SA
<table>
<tr><th>GBL</th><th>CT</th><th>MRI</th><th>Difference</th></tr>
<tr><td>GBL (%)</td><td>6.6 (3.8-8.9)</td><td>6.5 (4.6-9.5)</td><td>Ma: 1.0±0.76
Auto: 0.9±0.74 ?</td></tr>
<tr><td>GBL (mm^2)</td><td>42.2 (20.1-55.0)</td><td>40.0 (23.2-55.0)</td><td>Not reported</td></tr>
<tr><td rowspan="2">Glenoid SA (mm^2)</td><td>Ma: 644.3 (522.7-869.0)</td><td>Ma: 622.1 (469.7-980.6)</td><td>Ma: 8.9±4.22</td></tr>
<tr><td>Auto: 640.3 (517.6-865.9)</td><td>Auto: 617.9 (468.3-979.6)</td><td>Auto: 9.3±4.23</td></tr>
</table></td>
<td>QUADAS-C
Patient selection: low
Index test: low
Reference standard: unclear
Flow & Timing: high</td>
</tr>
<tr>
<td>Stillwater 2017</td>
<td>Prospective study</td>
<td>N=10

Mean /median age ± SD/range: 29 (not reported)

Sex: % M/ % F</td>
<td>3D CT: 64-multidetector row CT (VCT, GE Medical Systems)

3D MRI (3T): 3-T Siemens scanner (MAGNETOM Verio, Siemens Healthcare)</td>
<td>Best-fit circle (circle diameter): A: circle diameter of the best-fit circle
B: residual width (a line through the center of the circle at the maximal anterior-posterior diameter)
GBL percentage= [(A - B)/A]*100%</td>
<td>
<table>
<tr><th>N=10</th><th>CT</th><th>MRI</th><th>Difference</th></tr>
<tr><td>GBL (%)</td><td>15.6±5.8</td><td>15.2±5.5</td><td>Not reported</td></tr>
<tr><td>GBL (mm)</td><td>4.1±2.0</td><td>4.0±1.9</td><td>Not reported</td></tr>
<tr><td>Width(mm)</td><td>25.0±3.3</td><td>24.7±3.1</td><td>Not reported</td></tr>
<tr><td>Length (mm)</td><td>39.4±3.7</td><td>39.2±3.6</td><td>Not reported</td></tr>
</table>
</td>
<td>QUADAS-C
Patient selection: low
Index test: low
Reference standard: unclear
Flow & Timing: high</td>
</tr>
<tr><td colspan="6">Individual studies</td></tr>
<tr>
<td>Tian 2012</td>
<td>Type of study: diagnostic study

Setting and country: Department of</td>
<td>Inclusion criteria: This diagnostic test was performed on 56 patients (age range, 14–51 years; mean age, 26 years) referred to our</td>
<td>Describe index test: 3D MRI using a 3.0 Tesla MR (Magnetom Trio with TIM system, Siemens, Erlangen, Germany). Plus, an</td>
<td>Best-fit circle (circle diameter)
On a sagittal view, a circle is placed on the glenoid that best fits the 3- to 9-o’clock</td>
<td>
<table>
<tr><th>N=40</th><th>MSCT</th><th>3D MRA</th><th>Difference & correlation</th></tr>
<tr><td>GBL (%)</td><td>10.96± 9.00;</td><td>10.48± 8.71;</td><td>Not significant*</td></tr>
</table>
</td>
<td></td>
</tr>
</table>

	Radiology, China **Funding and conflicts of interest:** not declared.	department for shoulder MR arthrography. Patients with glenoid bone loss on nonarthrographic MSCT examination were included, including 35 with recurrent anterior dislocation and five with shoulder pain and motion limitation. **Exclusion criteria:** Patients with prior shoulder surgery were excluded. **N**= 40/56 (diagnosed with GBL) **Mean age** (range): 26 (14-51) for all 56 patients **Sex**: 82% M /18% F for all 56 patients	arthrography-specific imaging protocol using a commercially available fat-suppressed 3D VIBE sequence was performed **Comparator test**: nonar- throgaphic MSCT, using a 16-row multidetector CT unit (Sensation 16, Siemens Medical Solutions). The time between MR arthrography and MSCT ranged from 0–27 days (mean, 5.55-6.36 days).	inferior contour. A line is drawn from the posterior side to the anterior side of the circle to determine the diameter (A); this represents an intact glenoid. A second straight line is drawn following the glenoid defect; this will enable measurement of the glenoid defect (B). The percentage of glenoid bone loss is calculated using the following expression: (B/A)* 100%.	<table><tr><td></td><td>range, 0–31.40</td><td>range, 0–30.21</td><td>Spearman rank coefficient (r)=0.912</td></tr></table>*paired t-test was used.	
Stecco 2013	**Type of study**: Cross-sectional study **Setting and country**: not reported, Italy **Funding and conflicts of**	**Inclusion criteria:** Twenty-three patients affected by post-traumatic, unidirectional anterior instability (22 males and 1 female; mean age, 34.7 years) were enrolled, underwent MRI and	**Describe index test:** MRI: a 1.5 Tesla Philips Achieva (Philips Medical Systems, Best, The Netherlands) **Comparator test**: **CT:** a Light Speed VCT with 64 detec-	Best-fit circle (Pico method) : The PICO method involves drawing a circular area (X) on an oblique sagittal *en face* image of the healthy shoulder using the lower glenoid margin as a	<table><tr><td>N=23</td><td>CT</td><td>MRI</td><td>Difference</td></tr><tr><td>GBL (mm2)</td><td>Range: 0-94.79</td><td>Range: 0-92.78</td><td>Not reported</td></tr><tr><td>GBL area (%)</td><td>4.34%</td><td>4.38%</td><td>Not significant*</td></tr></table>*using the MedCalc 12.2.0.1 statistical package. Bland-Altman plot	

<table>
<tr>
<td></td>
<td>interest: none to declare.</td>
<td>CT of their healthy and pathological shoulders on the same day.

Exclusion criteria: Not reported.

N=22/166

Mean age (range): 28.8 (15-60)

Sex: 91% M /9% F</td>
<td>tor rows (GE, Milwaukee, Wisconsin, USA). Patients underwent MRI and CT of their healthy and pathological shoulders on the same day.</td>
<td>base. This circle is then transposed to the image of the pathological shoulder and the area of the sector with missing bone is drawn and calculated (bone loss, Y_i). Bone loss was measured three times by two operators in consensus (in order to reduce measurement error), and the mean value of the three measurements was recorded (Y), whereas X was only calculated once by the two operators in consensus.
% bone loss=Area Y/area X *100%.</td>
<td>
<table>
<tr><td rowspan="2">N=23</td><td rowspan="2">Mean</td><td colspan="2">95% limits of agreement</td></tr>
<tr><td>Upper</td><td>Lower</td></tr>
<tr><td>glenoid surface area (mm^2)</td><td>-1.5</td><td>9.5</td><td>-12.5</td></tr>
<tr><td>GBL area (mm^2)</td><td>-0.7</td><td>2.4</td><td>-3.7</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Chalmers 2020</td>
<td>Type of study: Retrospective study

Setting and country: a single institution, Department for Orthopaedic Surgery, the USA</td>
<td>Inclusion criteria: (1) patients who underwent the surgical treatment for glenohumeral instability as coded using the Common Procedure Terminology codes 29806, 23455, 23466, 23462, 23460, and 23465 at the</td>
<td>Describe index test:
MRI

Comparator test:
CT

Both the CT and MRI images were downloaded in DICOM format (Digital Imaging</td>
<td>On the en face glenoid image, glenoid width at the center of the best fit circle was measured, glenoid defect width, as defined as the distance between the anterior glenoid rim and the best fit circle, and</td>
<td>Mean measurement
<table>
<tr><td>N=53</td><td>CT</td><td>MRI</td><td>Difference</td></tr>
<tr><td>Linear % GBL</td><td>23.5±9.6</td><td>20.5±8.6</td><td>2.9 [0.8-5.1]
P<0.008</td></tr>
<tr><td>Area % GBL</td><td>18.4±7.5</td><td>16.8±7.1</td><td>1.6 (0.5-2.7]
P<0.03</td></tr>
</table>
NOTE. Results are displayed as mean± standard deviation. Differences are displayed as mean [95% confidence intervals]. P-values were generated using paired Student t-tests.</td>
<td></td>
</tr>
</table>

	Funding and conflicts of interest: The authors report potential conflicts of interest or sources of funding, details please see the article.	University of Utah, and (2) who underwent both a CT and an MRI performed within 1 year of each other. **Exclusion criteria:** Patients in whom an intervening surgical pro- cedure was performed on the shoulder. **N**=53/55 **Mean age** ± SD: 31 ± 11 **Sex**: 49% M / 51% F	and Communications in Medicine) and uploaded into a free- available viewing software (OsiriX; Pixmeo Sarl, Berne, Switzerland). The MRI and CT scans were obtained within 1 year of each other. The mean (sd) was 45±83 days between scans.	glenoid defect area, as defined as the area of anterior glenoid between the anterior glenoid rim and the best fit circle. From these measurements, linear percent glenoid bone loss was calculated as the width of the glenoid defect divided by the width of the best-fit circle multiplied by 100 and area percent glenoid bone loss as the area of the glenoid defect divided by the area of the best fit circle multiplied by 100. The area of the bone loss was outlined and autocalculated by the software used (OsiriX).	<u>On/Off track, n and % on-track:</u> Observer 1: CT 15/53 (38.3%), MRI 22/53 (41.5%), agreement CT-MRI 40/53 (75%) Observer 2: CT 20/53 (37.7%), MRI 21/53 (39.6%), agreement CT-MRI 91% (48/53)	
Sgroi 2021	**Type of study**: Cross-sectional study **Setting and country**: a single institution, Department for Orthopaedic	**Inclusion criteria:** Eighty consecutive patients with anterior shoulder instability scheduled from 2013 to 2017 in our department for arthroscopy were retrospectively enrolled postoperatively in this	**Describe index test**: MRI: a 1.5-Tesla MRI scanner (Siemens Symphony, Germany) **Comparator test**: For all patients CT: Siemens Somatom	The glenoid track method: First, the diameter (D) of the lower glenoid and the extent of glenoid bone loss (GBL) were measured using the best-it-circle method. Second, the glenoid track	**Measurements of the glenoid track (mean)** N =50 / CT / MRI / P Glenoid track (mm) / 21.6 ± 0.5 / 21.5 ± 0.4 / n.s. n. s. not signiicant; none of the measurement results was normally distributed. The Wilcoxon signed-rank test was used to compare the interval-scaled measurements; Yates's Chi-square test was used for nominal-scaled variables. Signiicant correlations are marked in bold Signiicance level = < 0.05	

<table>
<tr>
<td></td>
<td>Surgery, Germany

Funding and conflicts of interest: none declared.</td>
<td>study: (1) arthroscopic or open shoulder stabilisation and (2) available CT and MRI scans of the afected shoulder.

Exclusion criteria:
(1) concomitant rotator cuf tear, (2) incomplete imaging diagnostics, and (3) insuicient CT or MRI scans quality.

N=50/80

Prevalence:
HSL: 100%

Mean age ± SD: 26.4 ± 11.8

Sex: 74% M / 26% F</td>
<td>Emotion, ST: 1.0 mm, pitch: 0.8, 130 kV.

For all patients CT and MRI scans of the shoulders were performed as part of their preoperative diagnostic screening according to our routine clinical setup.
Study-related radiological analysis of all patients was conducted postoperatively at 34.7 ± 11.4 months (range: 24.1–52.0 months). Two orthopaedic trainees re-analysed and re-evaluated preoperative CT and MRI scans.</td>
<td>was extrapolated using the following formula: GT = (0.83 * D)-GBL. Finally, the Hill–Sachs interval (HSI) was deined as the sum of the width of the HSL and the extent of intact bone between the rotator cuf insertion and the lateral rim of the HSL. The HSL was deined as of-track if the HSI was greater than the glenoid track (HSI > GT); otherwise, it was defined as on-track.</td>
<td>N off-track lesions:
CT: 33.3%
17.1 % (p= n.s.)</td>
<td></td>
</tr>
<tr>
<td>Sgroi 2022</td>
<td>Type of study: retrospective diagnostic study
Setting and country:
a single institution, Department of Orthopaedic</td>
<td>Inclusion criteria: patients with available preoperative AP radiographs, WP radiographs, CT, and MR images of the af-fected shoulder as potentially eligible.</td>
<td>Describe index test:
MRI: a Philips 3-T MRI scanner (Amsterdam, The Netherlands) and an 8- channel phased-array coil.</td>
<td>depth and length of a glenoid bone loss: A best-fit circle is placed on the lower two-thirds of the glenoid. A line connecting the anteroinferior and</td>
<td>
<table>
<tr><td>N=50</td><td>CT</td><td>MRI</td><td>Difference of medians</td><td>p</td></tr>
<tr><td>length (cm)</td><td>2.33 (0.35-4.53)</td><td>2.26 (0.90-3.47)</td><td>0.07</td><td>n.s.</td></tr>
</table>
</td>
<td></td>
</tr>
</table>

	Surgery, Germany **Funding and conflicts of interest**: none declared.	**Exclusion criteria:** 31% (25 of 80) were excluded because not all planes or layers (such as sagittal, axial, or frontal) of each diagnostic imaging modalities were available and 6% (5 of 80) because of the insufficient quality of diagnostic images (for example, setting of the layers did not allow adequate en face view of the glenoid). **N**=50/80 **Mean age** ± SD: 26 ±12 **Sex**: 74% M / 26% F	**Comparator test:** CT: a Siemens Dual Source CT scanner (Erlangen, Germany). All measurements were performed during the same period.	anterosuperior rim of the glenoid bone loss was used to measure the length of the bony defect (blue line). To measure the depth of the glenoid bone loss, a second line (red line) perpendicular to the first line was drawn between the deepest point of the glenoid bone loss and the best-fit circle **The best- fit circle width loss method**: A best-fit circle was drawn on the inferior part of the glenoid on an en face view of the glenoid. The diameter (blue line) of the best-fit circle was measured. Using a parallel line to the diameter of the best fit circle, the width (red line) of the glenoid bone loss was measured. **AP distance method**: The bare spot was identified and a best-fit circle with the bare spot as the center was	<table><tr><td>GBL depth (cm)</td><td>0.42 (0.08-1.39)</td><td>0.40 (0.06-1.17)</td><td>0.02</td><td>n.s.</td></tr><tr><td>Best-fit circle width, %</td><td>15.02 (2.48-41.59)</td><td>13.38 (2.00-36.34)</td><td>1.64</td><td>n.s.</td></tr><tr><td>AP distances, %</td><td>15.48 (1.44-42.01)</td><td>12.88 (1.43-36.34)</td><td>2.60</td><td>n.s.</td></tr><tr><td>Surface area, %</td><td>14.01 (0.87-38.25)</td><td>11.72 (2.45-37.97)</td><td>2.29</td><td>n.s.</td></tr><tr><td>Gerber X ratio</td><td>0.75 (0.13-1.47)</td><td>0.76 (0.27-1.13)</td><td>0.01</td><td>n.s.</td></tr></table> Data presented as the median (range); the results of each measurement were not normally distributed; the Wilcoxon signed-rank test was used to compare the interval scaled measurements; ordinal scaled variables were tested with the sign test.	

				drawn over the inferior glenoid. The distance A from the bare- spot area to the anterior rim of the glenoid was measured. In the same manner, the distance between the bare spot and posterior rim of the glenoid was determined. The amount of glenoidal bone loss was then calculated using the following formula: A/B x100. **Surface area measurement**: A best-fit circle is placed on the lower two-thirds of the glenoid, starting at the 3 o'clock position (yellow circle). The area of the best-fit circle was calculated digitally. The bony fragment (white line) was identified and delineated. The surface area of the bony fragment was determined digitally. The glenoid bone loss was finally		

<table>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>calculated by determining the ratio between the two areas.
Gerber X ratio method: Using an en face view of the glenoid, a best-fit circle was drawn over the lower part of the glenoid, and its diameter (red line) was measured. Then, the length of the glenoid bone loss was measured using a line (blue line) connecting the anterocranial and anterocaudal edges of the glenoid bone loss.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cui 2023</td>
<td>Type of study:
Cross-sectional study
Setting and country:
a single institution, Department of Radiology and department of Orthopaedics, China

Funding and conflicts of interest: none declared.</td>
<td>Inclusion criteria:
Patients with shoulder disloca- tion between July 2022 and June 2023 were identified retrospectively. The inclusion criteria were (1) age of 18 years or older, (2) shoulder anterior dislocation, (3) completion of both MRI and CT of the shoulder joint, and (4) interval between MRI and CT was 1 week or less. Both patients with</td>
<td>Describe index test:
MRI: a Philips 3-T MRI scanner (Amsterdam, The Netherlands) and an 8- channel phased-array coil.

Comparator test:
CT: a Siemens Dual Source CT scanner (Erlangen, Germany).</td>
<td>Genood defect: A circle was placed on the inferior two-thirds portion of the glenoid with the posterior and inferior margins as guides, ensuring that the center of the circle was on the glenoid height line. Then, the radius (R) of the best-fit circle was obtained directly. The glenoid width was determined as the diameter (D) of</td>
<td>Mean measurement
<table>
<tr><td>N=16</td><td>3D CT</td><td>3D MRI</td><td>P*</td></tr>
<tr><td>Glenoid defect (mm)</td><td>4.05±1.44</td><td>4.16±1.39</td><td>n.s.</td></tr>
<tr><td>Glenoid defect (%)</td><td>16.21±5.95</td><td>16.61±5.66</td><td>n.s.</td></tr>
<tr><td>Glenoid track (mm)</td><td>18.02 ± 2.97</td><td>18.08 ± 2.98</td><td>n.s.</td></tr>
</table>
*paired t test was used.

Bland-Altman plots
<table>
<tr><td>N=16</td><td>Mean</td><td>Upper</td><td>Lower</td></tr>
<tr><td>Glenoid defect (mm)</td><td>0.06</td><td>0.80</td><td>-0.68</td></tr>
<tr><td>Glenoid defect (%)</td><td>0.29</td><td>2.11</td><td>-1.54</td></tr>
</table></td>
<td></td>
</tr>
</table>

		primary dislocation and patients with recurrent dislocation were included. **Exclusion criteria:** Patients with a history of shoulder osseous surgery. **N**=16/56 **Mean age** ± SD: 27.5 ±9.5 of all 56 patients **Sex**: 70% M / 30% F of all 56 patients		the best-fit circle (D 1⁄4 2R). A line segment (W) perpendicular to the glenoid height line was drawn from the center of the best-fit circle to the anterior edge of the remaining glenoid. Glenoid defect (d) was then calculated as d=R-W. The percentage of glenoid defect was determined as follows: (Glenoid defect/Glenoid width) *100%. The GT was calculated using the glenoid diameter (D) and gle- noid defect (d) measured on the en face view (GT=0.83D -d).	Glenoid track (mm) -0.02 1.17 -1.22	
Feuerriegel 2023	**Type of study:** Cross-sectional study	**Inclusion criteria:** Patients admitted to the emergency	**Describe index test:**	Glenoid bone loss (%):	**Mean measurement** N=20 CT T1 GRE Fracture UTE	

	Setting and country: Single institution, emergency department, Germany **Funding and conflicts of interest:** K.W. is employed by Philips GmbH Market DACH but was not involved in data acquisition or analysis. The rest of the authors of this manuscript declare no relationships with any companies, whose products or services may be related to the subject matter of the article.	department with suspected traumatic dislocation of the shoulder. All participants underwent 3-T MRI of the shoulder within 2 days after trauma, and in patients with fractures a CT examination was commenced as part of the diagnostic workup in clinical routine. **Exclusion criteria:** Not reported. **N**=20/46 **Mean age** ± SD: 40±14.5 **Sex**: 59% M / 41% F	MRI: a 3-T MR scanner (Ingenia Elition X; Philips Healthcare) with a dedicated 16-channel shoulder coil (dStream shoulder 16ch coil, Philips Healthcare). UTE images were acquired in the sag- ittal plane. Due to the isotropic acquisition voxel size, the T1 GRE and FRACTURE sequences were acquired in axial orientation und reformatted in the sagittal and coronal plane as well as inverted to resemble a bright CT-like bone contrast. **Comparator test:** CT: either an IQon Spectral CT scanner (Philips Healthcare) or a Siemens Somatom go.Top scanner (Sie- mens Healthineers). The interval between MRI and CT unclear, but	A circle was drawn using the anterior, posterior, and inferior margin of the glenoid surface as outer boundary and the percentage of bone loss was calculated by dividing the width of the anterior bone loss with the diameter of the circle; **Glenoid track (mm):** The glenoid track is calculated as 0.83 D − d, in which D repre- sents the diameter of the intact glenoid in millimeters and the d corresponds to the amount of glenoid bone loss in millimeters	<table><tr><td>Genood bone loss (%)</td><td>20.3±8.0</td><td>20.4±7.6</td><td>20.6±7.9</td><td>20.3±7.7</td></tr><tr><td>Anterior straight line (mm)</td><td>19.2±3.6</td><td>19.1±3.8</td><td>19.1±3.9</td><td>19.2±3.7</td></tr><tr><td>Glenoid track (mm)</td><td>8.2 ± 7.1</td><td>8.1 ± 7.1</td><td>8.2 ± 7.1</td><td>8.2 ± 7.1</td></tr><tr><td>Genoid bone width (mm)</td><td>22.1±3.8</td><td>21.5±5.9</td><td>21.0±5.9</td><td>22.1±3.7</td></tr></table> The comparison between CT and MRI using Student's t-test were all not significant. Agreement examined using an Bland-Altman plot showed 95% limits of agreement for CT versus T1 GRE MRI (95%LoA: -1.8% to 1.4%), CT versus Fracture (95%LoA: -2.1% to 1.6%), and CT versus UTE MRI (95%LoA: -1.9% to 1.9%). **Pearson's Correlation regarding percentage of glenoid bone loss** <table><tr><td>N=20</td><td>T1 GRE</td><td>Fracture</td><td>UTE</td></tr><tr><td>r</td><td>0.94, P<0.001</td><td>0.91, P<0.001</td><td>0.98 P<0.001</td></tr></table> On/off track: All-in agreement; n=6 offtrack and n=14 on-track Kappa = 1.00	

			seemed both in clinial routine.			
Kumar 2023	**Type of study:** Prospective **Setting and country**: hospital **Funding and conflicts of interest:** not reported in the manuscript	**Inclusion criteria:** History of shoulder dislocation **Exclusion criteria:** Contraindications for MRI **N**=38 **Mean age** ± SD: 28.92 (7.79. **Sex**: 100% male Cause of dislocation: Sports 5.6%	**Describe index test:** 3D MRI **Comparator test:** 3D CT		Kumar (2023) did not find statistical significant difference of 3D CT and 3D MRI measurements (CT: 16.53% [SD: 11.47], MRI: 61.03% [SD: 11.06]). The intraclass correlation coefficient between 3D CT and 3D MRI was 0.998.	

Table 2 - COSMIN risk of bias assessment of included studies

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Chalmers 2020					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population (NB: CT is considered an adequate reference)**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	**Statistical method applied NOT optimal**	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Cui 2023					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	Constructs measured by the comparator instrument(s) is clear			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	Statistical method applied NOT optimal	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	No other important methodological flaws		Other minor methodological flaws only data presented that both MRI and CT were measured	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Feuerriegel 2023					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	Constructs measured by the comparator instrument(s) is clear			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	Statistical method applied NOT optimal	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	No other important methodological flaws		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Kumar 2023					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population (NB: CT is considered an adequate reference)	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	**No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)** **(NB: no information on methods or sequences for CT and MRI)**	
Was the statistical method appropriate for the hypotheses to be tested?	**Statistical method was appropriate**	Assumable that statistical method was appropriate	**Statistical method applied NOT optimal**	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Sgroi 2021					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	Constructs measured by the comparator instrument(s) is clear			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	Statistical method applied NOT optimal Paired data were analyzed with un-paired statistics; Focused on mean measurement, No Bland-Altman plot where individual data is used.	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	No other important methodological flaws		Other methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Stecco 2013					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population (NB: CT is considered an adequate reference)**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s) (NB: no information on methods or sequences for CT and MRI)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	**Statistical method applied NOT optimal**	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	No other important methodological flaws		**Other minor methodological flaws: when calculating mean differences from table 1, they do not seem to agree with the mean difference of the bland-altman plot in fig 6.**	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Tian 2012					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population (NB: CT is considered an adequate reference)**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s) (NB: no information on methods or sequences for CT and MRI)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	**Assumable that statistical method was appropriate**	Statistical method applied NOT optimal	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Table 3 - list of excluded studies

Reference	Reason for exclusion
Lee 2013	Wrong outcome
E Souza 2014	Wrong intervention
Markenstein 2014	Wrong outcome
Gyftopoulos 2015	Wrong intervention
Acid 2012	Wrong population
Aliprandi 2006	Wrong population
Aygün 2017	Wrong population
Bencardino 2013	Wrong study design
Bishop 2013	Wrong population
Bitzer 2004	Article in German
Cagle 2019	Wrong outcome
Crossan 2023	Wrong study design
Cusmano 2000	Article in Italian
Dickens 2019	No intervention
Dobson 2009	No intervention
Elkharbotly 2016	Wrong population
Foster 2023	Wrong intervention
Galvin 2016	Wrong intervention
Gómez Bermúdez 2022	Article in Spain
Gyftopoulos 2012	Wrong population
Gyftopoulos 2013	Wrong population
Gyftopoulos 2014	Wrong intervention
Huijsmans 2007	Wrong population
Jezycki 2024	Article in German
Khan 2023	Wrong population
Khedr 2013	Wrong population
Koh 2018	No intervention
Vopat 2020	Wrong outcome
Madhuchandra 2022	Wrong outcome
Mahmoud 2013	Wrong population
Moroder 2013	Wrong population
Oh 2010	Wrong population
Owens 2014	Wrong population
Parmar 2002	Wrong population
Rossi 2021	Wrong study design
Rutgers 2022	Wrong population
Thacher 2023	Wrong study design
Vopat 2021	Wrong intervention
Weel 2016	Wrong study design
Weil 2022	Wrong study design
Wu 2022	Wrong population
Yanke 2017	Wrong population
DGMSR 2023	Wrong study design
Breighner 2018	Wrong outcome
Ma 2018	Included in the Systematic review Liu 2024
de Mello 2020	Wrong outcome
Vopat 2018	Included in the Systematic review Liu 2024
Lansdown 2019	Included in the Systematic review Liu 2024
Rerko 2013	Wrong outcome
Makovicka 2023	Wrong outcome
Min 2023	Wrong outcome
Friedman 2014	Wrong outcome
Saliken 2015	Wrong intervention (Review)
Miao 2019	Wrong intervention (Review)
Walter 2019	Wrong intervention (Review)
Kumar 2023	Wrong outcome
Zappia 2023	Wrong outcome

Verweij 2020	Not the latest review (Review)
Kim 2023	Wrong outcome
Weber 2021	Wrong outcome
Lander 2022	Included in the Systematic review Liu 2024

Zoekverantwoording

Cluster/richtlijn: Schouderinstabiliteit - Module 2 Posttraumatische schouderinstabiliteit	
Uitgangsvraag/modules: Welk (aanvullend?) beeldvormend onderzoek moet worden verricht bij post traumatische schouderinstabiliteit?	
Database(s): Embase.com, Ovid/Medline	Datum: 6-2-2024
Periode: vanaf 2000	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/922035
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen Schouderinstabiliteit en MRI. → De sleutelartikelen PMID 22996361, PMID 18061117 en PMID 35452020 worden gevonden met deze search. Zoals besproken is er gezocht met de P, I en het diagnostisch filter. In overleg zijn bij de P ook de zoektermen 'glenoid bone loss' en 'glenoid defect' meegenomen, omdat anders relevante artikelen gemist worden.	
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 6 februari 2024 systematisch gezocht naar systematische reviews, RCTs en observationele studies over de diagnostische accuratesse van MRI bij patiënten met verdenking op posttraumatische schouderinstabiliteit (ossale component). De literatuurzoekactie leverde 960 unieke treffers op.	

5 ***Zoekopbrengst 6-2-2024***

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	80	11	83
RCT	199	30	210
Observationeel	633	206	667
Totaal	912	247	**960***

****in Rayyan***

Zoekstrategie Embase.com 6-2-2024

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR 'bankart lesion'/exp OR ((('shoulder*' OR 'gleno-humer*' OR 'glenoid*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*' OR 'defect*')):ti,ab,kw) OR (('shoulder*':ti,ab,kw OR glenoid*:ti,ab,kw OR 'gleno-humer*':ti,ab,kw OR 'humer*':ti,ab,kw OR 'scapulohumer*':ti,ab,kw OR 'glenohumer*':ti,ab,kw) AND (('bon*' NEAR/3 ('loss*' OR 'erosion*')):ti,ab,kw)) OR ((('bankart' OR 'hill-sachs') NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/3 ('hill sachs' OR 'bone loss*' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	17298

#2	'nuclear magnetic resonance imaging'/exp OR 'mri scanner'/exp OR ('magnetic resonance':ab,ti AND (image:ab,ti OR images:ab,ti OR imaging:ab,ti)) OR mri:ab,ti OR mris:ab,ti OR nmr:ab,ti OR mra:ab,ti OR mras:ab,ti OR zeugmatograph*:ab,ti OR 'mr tomography':ab,ti OR 'mr tomographies':ab,ti OR 'mr tomographic':ab,ti OR 'mr imag*':ti,ab,kw OR 'proton spin':ab,ti OR ((magneti*:ab,ti OR 'chemical shift':ab,ti) AND imaging:ab,ti) OR fmri:ab,ti OR fmris:ab,ti OR rsfmri:ti,ab,kw	1604297
#3	'diagnostic procedure'/exp OR 'sensitivity and specificity'/de OR sensitivity:ab,ti OR specificity:ab,ti OR predict*:ab,ti OR 'roc curve':ab,ti OR 'receiver operator':ab,ti OR 'receiver operators':ab,ti OR likelihood:ab,ti OR 'diagnostic error'/exp OR 'diagnostic accuracy'/exp OR 'diagnostic test accuracy study'/exp OR 'inter observer':ab,ti OR 'intra observer':ab,ti OR interobserver:ab,ti OR intraobserver:ab,ti OR validity:ab,ti OR kappa:ab,ti OR reliability:ab,ti OR reproducibility:ab,ti OR ((test NEAR/2 're-test'):ab,ti) OR ((test NEAR/2 'retest'):ab,ti) OR 'reproducibility'/exp OR accuracy:ab,ti OR 'differential diagnosis'/exp OR 'validation study'/de OR 'measurement precision'/exp OR 'diagnostic value'/exp OR 'reliability'/exp OR 'predictive value'/exp OR ppv:ti,ab,kw OR npv:ti,ab,kw OR (((false OR true) NEAR/3 (negative OR positive)):ti,ab) OR diagnos*:ti,ab	24669709
#4	#1 AND #2 AND #3	2429
#5	#4 AND [2000-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	1863
#6	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	999431
#7	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	3963976
#8	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8055848

#9	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	14796927
#10	#5 AND #6 **– SR's**	80
#11	#5 AND #7 NOT #10 **– RCT's**	199
#12	#5 AND (#8 OR #9) NOT (#10 OR #11) **– Observationele studies**	633
#13	#10 OR #11 OR #12	912

5 ***Zoekstrategie Ovid/Medline 6-2-2024***

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	13706
2	exp magnetic resonance imaging/ or ("magnetic resonance" and (image or images or imaging)).ti,ab,kf. or mri.ti,ab,kf. or mris.ti,ab,kf. or nmr.ti,ab,kf. or mra.ti,ab,kf. or mras.ti,ab,kf. or zeugmatograph*.ti,ab,kf. or "mr tomography".ti,ab,kf. or "mr	981588

	tomographies".ti,ab,kf. or "mr tomographic".ti,ab,kf. or 'mr imag*'.ti,ab,kf. or "proton spin".ti,ab,kf. or ((magneti* or "chemical shift") and imaging).ti,ab,kf. or fmri.ti,ab,kf. or fmris.ti,ab,kf. or rsfmri.ti,ab,kf.	
3	exp "Sensitivity and Specificity"/ or (sensitivity or specificity).ti,ab. or (predict* or ROC-curve or receiver-operator*).ti,ab. or (likelihood or LR*).ti,ab. or exp Diagnostic Errors/ or (inter-observer or intra-observer or interobserver or intraobserver or validity or kappa or reliability).ti,ab. or reproducibility.ti,ab. or (test adj2 (re-test or retest)).ti,ab. or "Reproducibility of Results"/ or accuracy.ti,ab. or Diagnosis, Differential/ or Validation Study/ or ((false or true) adj3 (negative or positive)).ti,ab.	5006646
4	1 and 2 and 3	408
5	limit 4 to yr="2000 -Current"	349
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	343
7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	724616
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2687808
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4645843
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or	5616453

	control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	
11	6 and 7 **– SR's**	11
12	(6 and 8) not 11 **– RCT's**	30
13	(6 and (9 or 10)) not (11 or 12) **– Observationele studies**	206
14	11 or 12 or 13	247

Zoekverantwoording (Update 1-7-2024)

Cluster/richtlijn: Schouderinstabiliteit - Module 2 Posttraumatische schouderinstabiliteit Update	
Uitgangsvraag/modules: Welk (aanvullend?) beeldvormend onderzoek moet worden verricht bij post traumatische schouderinstabiliteit?	
Database(s): Embase.com, Ovid/Medline	Datum: 1-7-2024
Periode: vanaf 6-7-2024	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/1080630
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen Schouderinstabiliteit en MRI. à Het sleutelartikel van Gaoming Liu et al. (2024) wordt gevonden met deze search. Zoals besproken is er gezocht met de P, I en het diagnostisch filter. In overleg zijn bij de P ook de zoektermen 'glenoid bone loss' en 'glenoid defect' meegenomen, omdat anders relevante artikelen gemist worden.	
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 1 juli 2024 systematisch gezocht naar systematische reviews, RCTs en observationele studies over de diagnostische accuratesse van MRI bij patiënten met verdenking op posttraumatische schouderinstabiliteit (ossale component). De literatuurzoekactie leverde 67 unieke treffers op.	

Zoekopbrengst 1-7-2024

	EMBASE	**OVID/MEDLINE**	**Rayyan**	**Ontdubbeld**
SR	87	12	83	8
RCT	208	30	210	12
Observationeel	666	215	667	47
Totaal	961	257	960	**67***

in Rayyan

Zoekopbrengst 6-2-2024

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	80	11	83
RCT	199	30	210
Observationeel	633	206	667
Totaal	912	247	**960***

in Rayyan

Zoekstrategie Embase.com 1-7-2024

No.	Query	Results

#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR 'bankart lesion'/exp OR ((('shoulder*' OR 'gleno-humer*' OR 'glenoid*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*' OR 'defect*')):ti,ab,kw) OR (('shoulder*':ti,ab,kw OR glenoid*:ti,ab,kw OR 'gleno-humer*':ti,ab,kw OR 'humer*':ti,ab,kw OR 'scapulohumer*':ti,ab,kw OR 'glenohumer*':ti,ab,kw) AND (('bon*' NEAR/3 ('loss*' OR 'erosion*')):ti,ab,kw)) OR ((('bankart' OR 'hill-sachs') NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/3 ('hill sachs' OR 'bone loss*' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	17924
#2	'nuclear magnetic resonance imaging'/exp OR 'mri scanner'/exp OR ('magnetic resonance':ab,ti AND (image:ab,ti OR images:ab,ti OR imaging:ab,ti)) OR mri:ab,ti OR mris:ab,ti OR nmr:ab,ti OR mra:ab,ti OR mras:ab,ti OR zeugmatograph*:ab,ti OR 'mr tomography':ab,ti OR 'mr tomographies':ab,ti OR 'mr tomographic':ab,ti OR 'mr imag*':ti,ab,kw OR 'proton spin':ab,ti OR ((magneti*:ab,ti OR 'chemical shift':ab,ti) AND imaging:ab,ti) OR fmri:ab,ti OR fmris:ab,ti OR rsfmri:ti,ab,kw	1648669
#3	'diagnostic procedure'/exp OR 'sensitivity and specificity'/de OR sensitivity:ab,ti OR specificity:ab,ti OR predict*:ab,ti OR 'roc curve':ab,ti OR 'receiver operator':ab,ti OR 'receiver operators':ab,ti OR likelihood:ab,ti OR 'diagnostic error'/exp OR 'diagnostic accuracy'/exp OR 'diagnostic test accuracy study'/exp OR 'inter observer':ab,ti OR 'intra observer':ab,ti OR interobserver:ab,ti OR intraobserver:ab,ti OR validity:ab,ti OR kappa:ab,ti OR reliability:ab,ti OR reproducibility:ab,ti OR ((test NEAR/2 're-test'):ab,ti) OR ((test NEAR/2 'retest'):ab,ti) OR 'reproducibility'/exp OR accuracy:ab,ti OR 'differential diagnosis'/exp OR 'validation study'/de OR 'measurement precision'/exp OR 'diagnostic value'/exp OR 'reliability'/exp OR 'predictive value'/exp OR ppv:ti,ab,kw OR npv:ti,ab,kw OR (((false OR true) NEAR/3 (negative OR positive)):ti,ab) OR diagnos*:ti,ab	25239131
#4	#1 AND #2 AND #3	2539
#5	#4 AND [2000-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	1935
#6	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	1041201
#7	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti	4060691

	OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	
#8	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8297412
#9	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	15203455
#10	#5 AND #6 **– SR's**	87
#11	#5 AND #7 NOT #10 **– RCT's**	208
#12	#5 AND (#8 OR #9) NOT (#10 OR #11) **– Observationele studies**	666
#13	#10 OR #11 OR #12	961

Zoekstrategie Ovid/Medline 1-7-2024

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or	14039

	gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	
2	exp magnetic resonance imaging/ or ("magnetic resonance" and (image or images or imaging)).ti,ab,kf. or mri.ti,ab,kf. or mris.ti,ab,kf. or nmr.ti,ab,kf. or mra.ti,ab,kf. or mras.ti,ab,kf. or zeugmatograph*.ti,ab,kf. or "mr tomography".ti,ab,kf. or "mr tomographies".ti,ab,kf. or "mr tomographic".ti,ab,kf. or 'mr imag*'.ti,ab,kf. or "proton spin".ti,ab,kf. or ((magneti* or "chemical shift") and imaging).ti,ab,kf. or fmri.ti,ab,kf. or fmris.ti,ab,kf. or rsfmri.ti,ab,kf.	1002425
3	exp "Sensitivity and Specificity"/ or (sensitivity or specificity).ti,ab. or (predict* or ROC-curve or receiver-operator*).ti,ab. or (likelihood or LR*).ti,ab. or exp Diagnostic Errors/ or (inter-observer or intra-observer or interobserver or intraobserver or validity or kappa or reliability).ti,ab. or reproducibility.ti,ab. or (test adj2 (re-test or retest)).ti,ab. or "Reproducibility of Results"/ or accuracy.ti,ab. or Diagnosis, Differential/ or Validation Study/ or ((false or true) adj3 (negative or positive)).ti,ab.	5126703
4	1 and 2 and 3	423
5	limit 4 to yr="2000 -Current"	364
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	356
7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	756806
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2744645
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4763832
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled	5725437

	study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	
11	6 and 7 **– SR's**	12
12	(6 and 8) not 11 **– RCT's**	30
13	(6 and (9 or 10)) not (11 or 12) **– Observationele studies**	215
14	11 or 12 or 13	257

Bijlagen Module 2.3 Meetmethoden Humeraal botverlies

Table 1 - Summary of included studies

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr>
<td>Stillwater 2017</td>
<td>Type of study: Cross-sectional study

Setting and country: Setting not reported, Canada

Funding and conflicts of interest: None declared.</td>
<td>Inclusion criteria:
All patients with glenohumeral instability or recurrent dislocations were identified. Those patients >18 years of age, who were to be imaged with both CT and MRI, as requested by their orthopedic surgeons, were included in the study. This included patients who either had their first dislocation or had recurrent dislocations. Patients underwent CT and MRI examinations in no particular order; however, the CT and MRI examination were performed</td>
<td>Describe index test:
MRI: a 3-T Siemens scanner (MAGNETOM Verio, Siemens Heatlhcare, Erlangen, Germany). Additionally, for the purposes of this study, a 3D isotropic volumetric interpolated breath-hold examination (VIBE) with a water excitation sequence was added on to the standard protocol.

Comparator test:
CT: a 64-multidetector row CT (VCT, GE Medical Systems, Milwaukee, WI), with a protocol consisting of:</td>
<td>A line parallel to the orientation of the Hill-Sachs lesion was drawn to determine the maximal humeral head height (A). A line perpendicular to the humeral head height line was then drawn to determine the residual humeral head width (B). Using these measurements, the width of the humeral head defect could be determined (A-B), as could the percent humeral head bone loss [(A-B/A)*100]

The definition of size of Hill-Sachs lesions was not clearly</td>
<td>Time between the index test and reference test:
Not applicable as no reference test were included.

For how many participants were no complete outcome data available?
1 (9%)

Reasons for incomplete outcome data described?
A total of 11 patients who met the criteria were consecutively enrolled over a 6-month period, from November 2014 to April</td>
<td>Mean measurements
<table>
<tr><th>N=12</th><th>CT</th><th>MRI</th><th>P-value (Paired t-test)</th><th>P-value (TOST)</th></tr>
<tr><td>Humeral head height (mm)</td><td>46.6±4.3</td><td>46.1±4.6</td><td>0.02</td><td>0.02</td></tr>
<tr><td>Humeral head width(mm)</td><td>40.6±3.6</td><td>40.2±3.7</td><td>0.07</td><td>0.004</td></tr>
<tr><td>Size of Hill-Sachs(mm)</td><td>6.0±2.1</td><td>5.9±2.1</td><td>0.27</td><td><0.001</td></tr>
<tr><td>Humeral head loss (%)</td><td>12.7±4.1</td><td>12.6±4.1</td><td>0.90</td><td><0.001</td></tr>
</table>
TOST (Two one-sided t-tests for equivalence) were used with an equivalence margin of 1 mm for measurements and 1% for percent bone loss. A significant result indicates significantly equivalence within the priori defined margin.</td>
</tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Measurement method	Follow-up	Outcome measures and effect size
		within 24 h of one another. **Exclusion criteria:** One patient was excluded because of not presenting for the CT component of the study. **N**=10 patients (12 shoulders) **Prevalence:** Hill-Sachs lesions: 100% **Mean age** ± SD: 29 **Sex**: 70% M/ 30% F	helical imaging, 20% adaptive statistical iterative reconstruction dose reduction, detector coverage 20 mm, pitch 0.531:1, table speed 10.62, slice thickness 0.625 mm, FOV 18 cm, kVp 120, rotation time 0.8 s, auto mA and noise index 22. A radiology resident with 3 years of experi-ence performed the CT and MRI measurements. CT and MRI measurements were performed separately, approximately 2 days apart, with the measurer blinded to measurements from the other modality.	described, assumed to be similar with Hill-Sachs depths.	2015. A total of 13 shoulders were imaged. One patient was excluded because of not presenting for the CT component of the study. A total of 12 shoulders were therefore included in the study.	

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr>
<td>Breighner 2018</td>
<td>Type of study: Cross-sectional study

Setting and country: a single institution, Department of radiology and imging and department of orthopedic surgery and sports medicine, the USA

Funding and conflicts of interest: This study was performed with financial support and technical assistance from GE Healthcare.</td>
<td>Inclusion criteria:
Thirty-four patients undergoing MR imaging assessment of the shoulder were identified for prior or scheduled CT studies within 6 months of MR imaging without intervening shoulder surgery or trauma and were enrolled in the study after providing informed consent/assent.

Exclusion criteria:
excessive metal in the shoulder, as this produces artifacts in both modalities. Suture an- chors were not cause for exclusion.

N=14/34

Prevalence:</td>
<td>Describe index test:
ZTE MRI: a 1.5-Tesla MRI scanner (Siemens Symphony, Germany)

Comparator test:
CT: a GE Discovery CT750 HD scanner (n = 30) or a GE LightSpeed VCT scanner (n = 4) (GE Healthcare, Waukesha, Wis).

The average time between CT and MR imaging was 10 days ±32 (standard deviation), with most patients’ (29 of 34) CT and MR imaging examinations performed on the same day.</td>
<td>Hill-Sachs lesion size was measured in the radial and tangential directions depth and width, respectively</td>
<td>Time between the index test en reference test:
Not applicable as no reference test were included.

For how many participants were no complete outcome data available?
0

Reasons for incomplete outcome data described?
Not applicable.</td>
<td>Intermodal Agreement between CT and ZTE MRI
<table>
<tr><td>N =14</td><td colspan="2">Rater 1</td><td colspan="2">Rater 2</td></tr>
<tr><td></td><td>ICC</td><td>LOA</td><td>ICC</td><td>LOA</td></tr>
<tr><td>Hill-Sachs Width (mm)</td><td>0.77*</td><td>-5.57,8.03</td><td>0.66*</td><td>-7.53, 4.91</td></tr>
<tr><td>Hill-Sachs Depth (mm)</td><td>0.85*</td><td>-2.09, 2.40</td><td>0.90*</td><td>-2.27, 1.50</td></tr>
</table>
Note.LOA = Bland-Altman 95% limits of agreement.
* Statistically significant (P = 0.05). If significant, agreement was substantial or better (ICC >=0.61).</td>
</tr>
</table>

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr><td></td><td></td><td>HSL: 100% in the population with HSL

Mean age ± SD: 40 ± 22 for the whole 34 patients

Sex: 76% M / 24% F fort he whole 34 patients</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Chalmers 2020</td><td>Type of study: Retrospective study

Setting and country: a single institution, Department for Orthopaedic Surgery, the USA

Funding and conflicts of interest: The authors report potential conflicts of interest or sources of funding, details please see the article.</td><td>Inclusion criteria: (1) patients who underwent the surgical treatment for glenohumeral instability as coded using the Common Procedure Terminology codes 29806, 23455, 23466, 23462, 23460, and 23465 at the University of Utah, and (2) who underwent both a CT and an MRI performed within 1 year of each other.</td><td>Describe index test:
MRI

Comparator test:
CT
Both the CT and MRI images were down-loaded in DICOM format (Digital Imaging and Communications in Medicine) and uploaded into a free- available viewing software (OsiriX; Pixmeo Sarl, Berne, Switzerland).</td><td>on the HillSachs view, the distance from the posterior aspect of the articular surface (the anteromedial most aspect of the Hill-Sachs defect) to the rotator cuff attachment (the posterolateral most aspect of the HillSachs defect) was measured. “on- track” or “off-track.”: the width of the glenoid was multiplied by 0.83 and the</td><td>Time between the index test en reference test:
Not applicable as no reference test were included.

For how many participants were no complete outcome data available?
53 (96.3%)

Reasons for incomplete outcome data described?</td><td>On- /Off-track
<table><tr><th>N =53</th><th>CT (on-track)</th><th>MRI (on-track)</th><th>% Agreement</th></tr><tr><td>Observer 1</td><td>28.3% (15/53)</td><td>41.5% (22/53)</td><td>75% (40/53)</td></tr><tr><td>Observer 2</td><td>37.7% (20/53)</td><td>39.6% (21/53)</td><td>91% (48/53)</td></tr><tr><td>Observer 1+2</td><td>33.0% (35/106)</td><td>40.5% (43/106)</td><td>83% (88/106)</td></tr></table></td></tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Measurement method	Follow-up	Outcome measures and effect size
		Exclusion criteria: Patients in whom an intervening surgical pro-cedure was performed on the shoulder. **N**=53/55 **Prevalence**: HSL: unclear **Mean age** ± SD: 31 ± 11 **Sex**: 49% M / 51% F	The MRI and CT scans were obtained within 1 year of each other. The mean (sd) was 45±83 days between scans.	width of the glenoid defect was subtracted from this number.[15] If the result was larger than the width of the HillSachs, the shoulder was considered to be “on-track” and if the result was smaller than the width of the HillSachs the shoulder was considered to be “off-track.” These calculations were made for each observer and each imaging modality.	Two patients with scans with more than 1 year between scans were excluded.	

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr>
<td>Sgroi 2021</td>
<td>Type of study: Cross-sectional study

Setting and country: a single institution, Department for Orthopaedic Surgery, Germany

Funding and conflicts of interest: none declared.</td>
<td>Inclusion criteria:
Eighty consecutive patients with anterior shoulder instability scheduled from 2013 to 2017 in our department for arthroscopy were retrospectively enrolled postoperatively in this study: (1) arthroscopic or open shoulder stabilisation and (2) available CT and MRI scans of the afected shoulder.

Exclusion criteria:
(1) concomitant rotator cuf tear, (2) incomplete imaging diagnostics, and (3) insuicient CT or MRI scans quality.

N=50/80</td>
<td>Describe index test:
MRI: a 1.5-Tesla MRI scanner (Siemens Symphony, Germany)

Comparator test:
For all patients CT: Siemens Somatom Emotion, ST: 1.0 mm, pitch: 0.8, 130 kV.

For all patients CT and MRI scans of the shoulders were performed as part of their preoperative diagnostic screening according to our routine clinical setup. Study-related radiological analysis of all patients was conducted postoperatively at 34.7 ± 11.4 months (range:</td>
<td>The width of the HSL was measured by drawing a line between both of its edges. The depth of the HSL was obtained by placing a virtual circle on the humeral head. The longest perpendicular line from the ground of the lesion to the surface of the circle was deined as the depth of the HSL.
The glenoid track method: First, the diameter (D) of the lower glenoid and the extent of glenoid bone loss (GBL) were measured using the best-it-circle method. Second, the glenoid track was</td>
<td>Time between the index test en reference test:
Not applicable as no reference test were included.

For how many participants were no complete outcome data available?
30 (37.5%)

Reasons for incomplete outcome data described?
Thirty patients were excluded according to the exclusion criteria: 25 due to incomplete CT scans and 5 due to the insuicient CT scan quality.</td>
<td>Measuring methods (mean)
<table>
<tr><td>N =50</td><td>CT</td><td>MRI</td><td>P</td></tr>
<tr><td>Width (cm)</td><td>1.4 ± 0.7</td><td>1.3 ± 0.7</td><td>n.s.</td></tr>
<tr><td>Depth (cm)</td><td>0.7 ± 0.3</td><td>0.7 ± 0.4</td><td>n.s.</td></tr>
</table>
Measurements of the glenoid track (mean)
<table>
<tr><td>N =50</td><td>CT</td><td>MRI</td><td>P</td></tr>
<tr><td>HSI (mm)</td><td>16.6 ± 0.5</td><td>14.3 ± 0.5</td><td>0.016</td></tr>
<tr><td>N of “off-track” lesions (%)</td><td>33.3</td><td>17.1</td><td>n.s.</td></tr>
</table>
n. s. not signiicant; none of the measurement results was normally distributed. The Wilcoxon signed-rank test was used to compare the interval-scaled measurements; Yates’s Chi- square test was used for nominal-scaled variables. Signiicant correlations are marked in bold
Signiicance level = < 0.05</td>
</tr>
</table>

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr><td></td><td></td><td>Prevalence:
HSL: 100%

Mean age ± SD:
26.4 ± 11.8

Sex: 74% M / 26% F</td><td>24.1–52.0 months). Two orthopaedic trainees re-analysed and re-evaluated preoperative CT and MRI scans.</td><td>extrapolated using the following formula: GT = (0.83 * D)-GBL. Finally, the Hill–Sachs interval (HSI) was deined as the sum of the width of the HSL and the extent of intact bone between the rotator cuf insertion and the lateral rim of the HSL. The HSL was deined as of-track if the HSI was greater than the glenoid track (HSI > GT); otherwise, it was defined as on-track.</td><td></td><td></td></tr>
<tr><td>Lander 2022</td><td>Type of study:
Unclear

Setting and country: a single institution, Department of Orthopaedic Surgery, the USA</td><td>Inclusion criteria:
Consecutive patients with recurrent glenohumeral instability dislocations were identified. Patients older than 16 years,</td><td>Describe index test:
MRI (n=12) and MRA (n=6) were performed on a Siemens Skyra (3-tesla magnets) MRI scanner. In order to produce 3D MRI</td><td>A line (blue) was placed to determine maximal humeral head height (A) and then a perpendicular line (green) was drawn to measure the</td><td>Time between the index test en reference test:
Not applicable as no reference test were included.</td><td>Mean measurements<table><tr><th>N=18</th><th>2D CT</th><th>2D MRI</th><th>3D CT</th><th>3D MRI</th><th>MRI Vibe</th></tr><tr><td>Humeral defect (%)</td><td>6.04</td><td>5.98</td><td>8.29</td><td>8.17</td><td></td></tr><tr><td>Humeral defect (mm)</td><td>18.19</td><td>18.65</td><td>14.14</td><td>12.39</td><td>19.28</td></tr></table>Paired t tests were used. No significant differences were found between 3D CT and 3D MRI using paired t-test.</td></tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Measurement method	Follow-up	Outcome measures and effect size
	Funding and conflicts of interest: Several authors receive financial or material support from Arthrex, Inc., Breg, DJOrtho, Mitek, and Smith & Nephew; intellectual property loy- alties from DePuy, a Johnson & Johnson Company; and receives research support from Smith & Nephew, Arthrex, Inc., and Wright Medical Technology, Inc. Details please see the article.	without prior surgery, were identified and underwent both CT and MRI imaging modalities, as well as 3D osseous reformats, which were ordered by their orthopedic surgeon. Patients received CT and MRI evaluations in no particular order but whichever could be obtained first per patient and radiology schedule. interval between MRI and CT was unclear. **Exclusion criteria:** Not reported. **N**=18 (18 shoulders) **Prevalence:**	osseous reformats, a 3D isotropic volumetric interpolated breath-hold examination (VIBE) with water excitation sequence was performed in addition to the standard protocol. **Comparator test:** CT: a standard 64-multidetector-row CT and helical imaging, including 20% adap- tive statistical iterative reconstruction dose reduction, detector coverage 20 mm, pitch 0.531:1, table speed 10.62, slice thickness 0.625 mm, field of view 18 cm, tube voltage 120 kVp, rotation	residual humeral head (B) and thereby the bone defect (A - B) (orange). Percentage bone loss was determined through the formula [(A - B)/A) * 100]. Two-dimensional humeral head defect measurements were made on 2D CT and T1 MRI axial views at the point of greatest defect, measured in millimeters. (Similar to Hill-Sachs width in other studies)	**For how many participants were no complete outcome data available?** 0 **Reasons for incomplete outcome data described?** Not reported as only patients with complete outcome data were included.	

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr><td></td><td></td><td>recurrent glenohumeral instability: 100%

Mean age ± SD: 34
Sex: 66% M / 34% F</td><td>time 0.8 seconds, automatic tube current modulation, and noise index 22. A 3D osseous reconstruction was performed with a protocol to isolate the pixel values by Hounsfield units to manually segment the anatomy.

The interval between MRI and CT was unclear.</td><td></td><td></td><td></td></tr>
<tr><td>Cui 2023</td><td>Type of study:
Cross-sectional study
Setting and country:
a single institution, Department of Radiology and department of Orthopaedics, China

Funding and conflicts of</td><td>Inclusion criteria:
Patients with shoulder disloca-tion between July 2022 and June 2023 were identified retrospectively. The inclusion criteria were (1) age of 18 years or older, (2) shoulder anterior</td><td>Describe index test:
MRI: a Philips 3-T MRI scanner (Amsterdam, The Netherlands) and an 8-channel phased-array coil.

Comparator test:
CT: a Siemens Dual Source CT</td><td>Two parallel lines were drawn at the medial edge of the Hill-Sachs lesion and the medial margin of the posterior rotator cuff attachment, along the orientation parallel to the Hill-Sachs lesion. The</td><td>Time between the index test en reference test:
Not applicable as no reference test were included.

For how many participants were no</td><td>Mean measurement
<table><tr><td>N=21</td><td>3D CT</td><td>3D MRI</td><td>P*</td></tr><tr><td>HSI (mm)</td><td>14.29 ± 1.93</td><td>14.35 ± 2.07</td><td>n.s.</td></tr></table>*paired t test was used.

Bland-Altman plots
<table><tr><td>N=21</td><td>Mean</td><td>Upper</td><td>Lower</td></tr><tr><td>HSI (mm)</td><td>-0.06</td><td>1.12</td><td>-1.24</td></tr></table></td></tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Measurement method	Follow-up	Outcome measures and effect size
	interest: none declared.	dislocation, (3) completion of both MRI and CT of the shoulder joint, and (4) interval between MRI and CT was 1 week or less. Both patients with primary dislocation and patients with recurrent dislocation were included. **Exclusion criteria:** Patients with a history of shoulder osseous surgery. **N**=21/56 **Prevalence:** 21/56 HSL 16 bipolar bone defect (both HSL and glenoid defect) 35/56 without bone defect **Mean age** ± SD: 27.5 ±9.5	scanner (Erlangen, Germany). The interval between MRI and CT was 1 week or less.	width between these 2 parallel lines was measured as the HSI (Fig 2). the GT was calculated using the glenoid diameter (D) and gle- noid defect (d) measured on the en face view (GT= 0.83D-d). If the HSI was greater than the GT, the lesion was determined to be off-track; if the HSI was less than the GT, the lesion was determined to be on-track.	**complete outcome data available?** 0 (%) **Reasons for incomplete outcome data described?** Not reported as only patients with complete outcome data were included.	

<table>
<tr><th>Study reference</th><th>Study characteristics</th><th>Patient characteristics</th><th>Index test (test of interest)</th><th>Measurement method</th><th>Follow-up</th><th>Outcome measures and effect size</th></tr>
<tr><td></td><td></td><td>Sex: 70% M / 30% F</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Feuerriegel 2023</td><td>Type of study:
Cross-sectional study

Setting and country: Single institution, emergency department, Germany

Funding and conflicts of interest: K.W. is employed by Philips GmbH Market DACH but was not involved in data acquisition or analysis.
The rest of the authors of this manuscript declare no relationships with any companies, whose products or services may be related to the subject matter of the article.</td><td>Inclusion criteria:
Patients admitted to the emergency department with suspected traumatic dislocation of the shoulder. All participants underwent 3-T MRI of the shoulder within 2 days after trauma,
and in patients with fractures a CT examination was commenced as part of the diagnostic workup in clinical routine.

Exclusion criteria:
Not reported.

N=46

Prevalence:</td><td>Describe index test:
MRI: a 3-T MR scanner (Ingenia Elition X; Philips Healthcare) with a dedicated 16-channel shoulder coil (dStream shoulder 16ch coil, Philips Healthcare). UTE images were acquired in the sag- ittal plane. Due to the isotropic acquisition voxel size, the T1 GRE and FRACTURE sequences were acquired in axial orientation und reformatted in the sagittal and coronal plane as well as inverted to resemble a bright CT-like bone contrast.

Comparator test:</td><td>The humerus was assessed for Hill-Sachs lesions and in patients with a bipolar lesion. The definition and measurement of Hill-Sachs interval was not clear.</td><td>Time between the index test en reference test:
Not applicable as no reference test were included.

For how many participants were no complete outcome data available?
0

Reasons for incomplete outcome data described?
Not reported.</td><td>Mean measurement
<table><tr><td>N=25</td><td>CT</td><td>T1 GRE</td><td>Fracture</td><td>UTE</td></tr><tr><td>HSI (mm)</td><td>17.4 ± 4.1</td><td>17.4 ± 4.2</td><td>17.3 ± 4.1</td><td>17.4 ± 4.2</td></tr></table>Bland-Altman plots

Bland-Altman plots (estimated based on the figure):
CT vs T1 GRE mean difference not clear, 95% limits of agreement: -1.20,0.99;
CT vs Fracture mean difference not clear, 95% limits of agreement: -1.05,0.75;
CT vs T1 GRE mean difference not clear, 95% limits of agreement: -0.80,0.80;

Correlation regarding percentage of glenoid bone loss
<table><tr><td>N=20</td><td>T1 GRE</td><td>Fracture</td><td>UTE</td></tr><tr><td>r</td><td>0.94, P<0.001</td><td>0.91, P<0.001</td><td>0.98 P<0.001</td></tr></table></td></tr>
</table>

Study reference	Study characteristics	Patient characteristics	Index test (test of interest)	Measurement method	Follow-up	Outcome measures and effect size
		25/46 with osseous pathologies Prevalence of bony Bankart lesions and HSL were 100%. **Mean age** ± SD: 40±14.5 **Sex**: 59% M / 41% F	CT: either an IQon Spectral CT scanner (Philips Healthcare) or a Siemens Somatom go.Top scanner (Sie- mens Healthineers). The interval between MRI and CT unclear, but seemed both in clinial routine.			

Table 2 - COSMIN risk of bias assessment of included studies

Reliability					
Author: Breighner 2018					
Instrument: ZTE MRI					
	Very Good	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Were patients stable in the interim period on the construct to be measured?	Evidence provided that patients were stable	**Assumable that patients were stable**	Unclear if patients were stable	Patients were NOT stable	
Was the time interval appropriate?	**Time interval appropriate**		Doubtful whether time interval was appropriate or time interval was not stated	Time interval NOT appropriate	
Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions	Test conditions were similar (evidence provided)	**Assumable that test conditions were similar**	Unclear if test conditions were similar	Test conditions were NOT similar	
For continuous scores: Was an intraclass correlation coefficient (ICC) calculated?	ICC calculated and model or formula of the ICC is described	**ICC calculated but model or formula of the ICC not described or not optimal. (No mean difference in the Bland-Altman plot reported) Pearson or Spearman correlation coefficient calculated with evidence provided that no systematic change has occurred**	Pearson or Spearman correlation coefficient calculated WITHOUT evidence provided that no systematic change has occurred or WITH evidence that systematic change has occurred	No ICC or Pearson or Spearman correlations calculated	Not applicable
For dichotomous/nominal/ordinal scores: Was kappa calculated?	Kappa calculated			No kappa calculated	**Not applicable**
For ordinal scores: Was a weighted kappa calculated?	Weighted Kappa calculated		Unweighted Kappa calculated or not described		**Not applicable**
For ordinal scores: Was the weighting scheme described? e.g. linear, quadratic	Weighting scheme described	Weighting scheme NOT described			**Not applicable**

Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Reliability					
Author: Chalmers 2020					
Instrument: MRI					
	Very Good	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Were patients stable in the interim period on the construct to be measured?	Evidence provided that patients were stable	Assumable that patients were stable	**Unclear if patients were stable**	Patients were NOT stable	
Was the time interval appropriate?	Time interval appropriate		**Doubtful whether time interval was appropriate or time interval was not stated**	Time interval NOT appropriate	
Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions	Test conditions were similar (evidence provided)	**Assumable that test conditions were similar**	Unclear if test conditions were similar	Test conditions were NOT similar	
For continuous scores: Was an intraclass correlation coefficient (ICC) calculated?	ICC calculated and model or formula of the ICC is described	ICC calculated but model or formula of the ICC not described or not optimal. (No mean difference in the Bland-Altman plot reported) Pearson or Spearman correlation coefficient calculated with evidence provided that no systematic change has occurred	Pearson or Spearman correlation coefficient calculated WITHOUT evidence provided that no systematic change has occurred or WITH evidence that systematic change has occurred	No ICC or Pearson or Spearman correlations calculated	Not applicable
For dichotomous/nominal/ordinal scores: Was kappa calculated?	Kappa calculated			**No kappa calculated**	Not applicable
For ordinal scores: Was a weighted kappa calculated?	Weighted Kappa calculated		Unweighted Kappa calculated or not described		Not applicable
For ordinal scores: Was the weighting scheme described? e.g. linear, quadratic	Weighting scheme described	Weighting scheme NOT described			Not applicable
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Cui 2023					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	**Statistical method was appropriate**	Assumable that statistical method was appropriate	Statistical method applied NOT optimal	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws only data presented that both MRI and CT were measured	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Feuerriegel 2023					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	**Statistical method was appropriate**	Assumable that statistical method was appropriate	Statistical method applied NOT optimal	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Lander 2022					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	**Statistical method applied NOT optimal**	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	No other important methodological flaws		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Sgroi 2021					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	**Statistical method applied NOT optimal Paired data were analyzed with un-paired statistics; Focused on mean measurement, No Bland-Altman plot where individual data is used.**	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	**No other important methodological flaws**		Other minor methodological flaws	Other important methodological flaws	

Hypothesis testing for construct validity (comparison with other outcome measurement instruments)					
Author: Stillwater 2017					
Instrument: MRI					
Convergent validity	**Very Good**	**Adequate**	**Doubtful**	**Inadequate**	**NA**
Is it clear what the comparator instrument(s) measure(s)?	**Constructs measured by the comparator instrument(s) is clear**			Constructs measured by the comparator instrument(s) is not clear	
Where the measurement properties of the comparator instrument(s) sufficient?	**Sufficient measurement properties of the comparator instrument(s) in a population similar to the study population**	Sufficient measurement properties of the comparator instrument(s) but not sure if these apply to the study population	Some information on measurement properties of the comparator instrument(s) in any study population	No information on the measurement properties of the comparator instrument(s), OR evidence for insufficient measurement properties of the comparator instrument(s)	
Was the statistical method appropriate for the hypotheses to be tested?	Statistical method was appropriate	Assumable that statistical method was appropriate	**Statistical method applied NOT optimal**	Statistical method applied NOT appropriate	
Were there any other important flaws in the design or statistical methods of the study?	No other important methodological flaws		Other minor methodological flaws	Other important methodological flaws	

Table 3 - list of excluded studies

Reference	Reason for exclusion
Lee 2013	Wrong outcome
E Souza 2014	Wrong intervention
Markenstein 2014	Wrong outcome
Gyftopoulos 2015	Wrong intervention
Acid 2012	Wrong population
Aliprandi 2006	Wrong population
Aygün 2017	Wrong population
Bencardino 2013	Wrong study design
Bishop 2013	Wrong population
Bitzer 2004	Article in German
Cagle 2019	Wrong outcome
Crossan 2023	Wrong study design
Cusmano 2000	Article in italian
Dickens 2019	No intervention
Dobson 2009	No intervention
Elkharbotly 2016	Wrong population
Foster 2023	Wrong intervention
Galvin 2016	Wrong intervention
Gómez Bermúdez 2022	Article in spain
Gyftopoulos 2012	Wrong population
Gyftopoulos 2013	Wrong population
Gyftopoulos 2014	Wrong intervention
Huijsmans 2007	Wrong population
Jezycki 2024	Article in german
Khan 2023	Wrong population
Khedr 2013	Wrong population
Koh 2018	No intervention
Vopat 2020	Wrong outcome
Madhuchandra 2022	Wrong outcome
Mahmoud 2013	Wrong population
Moroder 2013	Wrong population
Oh 2010	Wrong population
Owens 2014	Wrong population
Parmar 2002	Wrong population
Rossi 2021	Wrong study design
Rutgers 2022	Wrong population
Thacher 2023	Wrong study design
Vopat 2021	Wrong intervention
Weel 2016	Wrong study design
Weil 2022	Wrong study design
Wu 2022	Wrong population
Yanke 2017	Wrong population
DGMSR 2023	Wrong study design
Stecco 2013	Wrong population (Glenoid)
Ma 2018	Wrong population (Glenoid)
de Mello 2020	Wrong population (Glenoid)
Vopat 2018	Wrong population (Glenoid)
Lansdown 2019	Wrong population (Glenoid)
Friedman 2014	Wrong population (Glenoid)
Verweij 2020	Wrong population (Glenoid)
Weber 2021	Wrong population (Glenoid)
Sgroi 2022	Wrong population (Glenoid)
Rerko 2013	Wrong population (Glenoid)
Kumar 2023	Wrong population (Glenoid)
Makovicka 2023	Wrong population (Glenoid)
Min 2023	Wrong population (Glenoid)
Zappia 2023	Wrong population (Glenoid)

Tian 2012	Wrong population (Glenoid)
Saliken 2015	Wrong intervention (Review)
Miao 2019	Wrong intervention (Review)
Walter 2019	Wrong intervention (Review)

Zoekverantwoording

Cluster/richtlijn: Schouderinstabiliteit - Module 2 Posttraumatische schouderinstabiliteit	
Uitgangsvraag/modules: Welk (aanvullend?) beeldvormend onderzoek moet worden verricht bij post traumatische schouderinstabiliteit?	
Database(s): Embase.com, Ovid/Medline	Datum: 6-2-2024
Periode: vanaf 2000	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/922035
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen Schouderinstabiliteit en MRI. → De sleutelartikelen PMID 22996361, PMID 18061117 en PMID 35452020 worden gevonden met deze search. Zoals besproken is er gezocht met de P, I en het diagnostisch filter. In overleg zijn bij de P ook de zoektermen 'glenoid bone loss' en 'glenoid defect' meegenomen, omdat anders relevante artikelen gemist worden.	
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 6 februari 2024 systematisch gezocht naar systematische reviews, RCTs en observationele studies over de diagnostische accuratesse van MRI bij patiënten met verdenking op posttraumatische schouderinstabiliteit (ossale component). De literatuurzoekactie leverde 960 unieke treffers op.	

Zoekopbrengst 6-2-2024

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	80	11	83
RCT	199	30	210
Observationeel	633	206	667
Totaal	912	247	**960***

in Rayyan

Zoekstrategie Embase.com 6-2-2024

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR 'bankart lesion'/exp OR (('shoulder*' OR 'gleno-humer*' OR 'glenoid*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*' OR 'defect*')):ti,ab,kw) OR (('shoulder*':ti,ab,kw OR glenoid*:ti,ab,kw OR 'gleno-humer*':ti,ab,kw OR 'humer*':ti,ab,kw OR 'scapulohumer*':ti,ab,kw OR 'glenohumer*':ti,ab,kw) AND (('bon*' NEAR/3 ('loss*' OR 'erosion*')):ti,ab,kw)) OR ((('bankart' OR 'hill-sachs') NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/3 ('hill sachs' OR 'bone loss*' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	17298
#2	'nuclear magnetic resonance imaging'/exp OR 'mri scanner'/exp OR ('magnetic resonance':ab,ti AND (image:ab,ti OR images:ab,ti OR imaging:ab,ti)) OR mri:ab,ti OR mris:ab,ti OR nmr:ab,ti OR mra:ab,ti OR mras:ab,ti OR zeugmatograph*:ab,ti OR 'mr	1604297

	tomography':ab,ti OR 'mr tomographies':ab,ti OR 'mr tomographic':ab,ti OR 'mr imag*':ti,ab,kw OR 'proton spin':ab,ti OR ((magneti*:ab,ti OR 'chemical shift':ab,ti) AND imaging:ab,ti) OR fmri:ab,ti OR fmris:ab,ti OR rsfmri:ti,ab,kw	
#3	'diagnostic procedure'/exp OR 'sensitivity and specificity'/de OR sensitivity:ab,ti OR specificity:ab,ti OR predict*:ab,ti OR 'roc curve':ab,ti OR 'receiver operator':ab,ti OR 'receiver operators':ab,ti OR likelihood:ab,ti OR 'diagnostic error'/exp OR 'diagnostic accuracy'/exp OR 'diagnostic test accuracy study'/exp OR 'inter observer':ab,ti OR 'intra observer':ab,ti OR interobserver:ab,ti OR intraobserver:ab,ti OR validity:ab,ti OR kappa:ab,ti OR reliability:ab,ti OR reproducibility:ab,ti OR ((test NEAR/2 're-test'):ab,ti) OR ((test NEAR/2 'retest'):ab,ti) OR 'reproducibility'/exp OR accuracy:ab,ti OR 'differential diagnosis'/exp OR 'validation study'/de OR 'measurement precision'/exp OR 'diagnostic value'/exp OR 'reliability'/exp OR 'predictive value'/exp OR ppv:ti,ab,kw OR npv:ti,ab,kw OR (((false OR true) NEAR/3 (negative OR positive)):ti,ab) OR diagnos*:ti,ab	24669709
#4	#1 AND #2 AND #3	2429
#5	#4 AND [2000-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	1863
#6	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	999431
#7	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	3963976
#8	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8055848
#9	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR	14796927

	((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	
#10	#5 AND #6 **– SR's**	80
#11	#5 AND #7 NOT #10 **– RCT's**	199
#12	#5 AND (#8 OR #9) NOT (#10 OR #11) **– Observationele studies**	633
#13	#10 OR #11 OR #12	912

Zoekstrategie Ovid/Medline 6-2-2024

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	13706
2	exp magnetic resonance imaging/ or ("magnetic resonance" and (image or images or imaging)).ti,ab,kf. or mri.ti,ab,kf. or mris.ti,ab,kf. or nmr.ti,ab,kf. or mra.ti,ab,kf. or mras.ti,ab,kf. or zeugmatograph*.ti,ab,kf. or "mr tomography".ti,ab,kf. or "mr tomographies".ti,ab,kf. or "mr tomographic".ti,ab,kf. or 'mr imag*'.ti,ab,kf. or "proton spin".ti,ab,kf. or ((magneti* or "chemical shift") and imaging).ti,ab,kf. or fmri.ti,ab,kf. or fmris.ti,ab,kf. or rsfmri.ti,ab,kf.	981588
3	exp "Sensitivity and Specificity"/ or (sensitivity or specificity).ti,ab. or (predict* or ROC-curve or receiver-operator*).ti,ab. or (likelihood or LR*).ti,ab. or exp Diagnostic Errors/ or (inter-observer or intra-observer or interobserver or intraobserver or validity or kappa or reliability).ti,ab. or reproducibility.ti,ab. or (test adj2 (re-test or retest)).ti,ab. or "Reproducibility of Results"/ or accuracy.ti,ab. or Diagnosis, Differential/ or Validation Study/ or ((false or true) adj3 (negative or positive)).ti,ab.	5006646
4	1 and 2 and 3	408
5	limit 4 to yr="2000 -Current"	349
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	343
7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	724616
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2687808
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4645843
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or	5616453

	(match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	
11	6 and 7 **– SR's**	11
12	(6 and 8) not 11 **– RCT's**	30
13	(6 and (9 or 10)) not (11 or 12) **– Observationele studies**	206
14	11 or 12 or 13	247

Bijlagen Module 3 niet-operatieve behandeling

Table 1 - Risk of bias table for intervention studies (randomized controlled trials; based on Cochrane risk of bias tool and suggestions by the CLARITY Group at McMaster University)

Study reference	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding:	Was loss to follow-up (missing outcome data) infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at a risk of bias?	Overall risk of bias
Eshoj, 2020	Definitely yes Reason: Authors used computer-generated randomization.	Definitely yes Reason: List with randomization was sequentially numbered in opaque, concealed envelopes.	Definitely no Reason: Blinding of outcomes assessors, not of participants.	Definitely yes Reason: 6 of 28 lost to follow-up in intervention arm and 2 of 28 in control arm.	Definitely yes Reason: The study was performed according to the published protocol.	Probably no Reason: No conflict of interest, registered trial, no funding source reported. Compliance rate was 43% and 54%.	High risk of bias Reason: No blinding (not possible), low compliance rate.
Kearney, 2024	Definitely yes Reason: Authors used a secured web-based system.	Definitely yes Reason: by an independent team that had no role in recruitment.	Definitely no Reason: Blinding of outcomes assessors, and of participants until after the advice session.	Definitely yes Reason: 27% was loss to follow-up (n=75 and 63).	Definitely yes Reason: The study was performed according to the published protocol.	Probably yes Reason: Registered trial. The funder had no role in any part of the study. Completing interest are described. Complicate rate was 69% and 81%.	Some concerns Reason: No blinding (not possible).
Pulido, 2023	Probably yes Reason: Authors used 'controlled randomization', no further information provided.	Probably no Reason: No information provided.	Definitely no Reason: Blinding of outcomes assessors, not of participants.	Definitely no Reason: 1 missing due to shoulder surgery (in mixed group).	Probably yes Reason: Outcomes measured reported in the Methods are reported in the Results section.	Reason: No conflict of interest, no funding source reported, but there is a high suspicion of sponsoring. Complicate rate was 97.3%.	High risk of bias Reason: Unclear randomization, no blinding (not possible).

Table 2 – Table of excluded studies

Reference	Reason for exclusion
Ager AL, Borms D, Bernaert M, Brusselle V, Claessens M, Roy JS, Cools A. Can a Conservative Rehabilitation Strategy Improve Shoulder Proprioception? A Systematic Review. J Sport Rehabil. 2020 Jul 31;30(1):136-151. doi: 10.1123/jsr.2019-0400. PMID: 32736342.	Wrong population and wrong outcome.
Avila Lafuente JL, Moros Marco S, García Pequerul JM. Controversies in the Management of the First Time Shoulder Dislocation. Open Orthop J. 2017 Aug 31;11:1001-1010. doi: 10.2174/1874325001711011001. PMID: 29430264; PMCID: PMC5789581.	Wrong design: review, not systematic.
Bateman M, Osborne S, Smith B. Physiotherapy treatment for atraumatic recurrent shoulder instability: updated results of the Derby Shoulder Instability Rehabilitation Programme. J Arthrosc Jt Surg 2019;6:35–41. doi: 10.1016/j.jajs.2019.01.002	Wrong population: patients with atraumatic shoulder instability.
Buss DD, Lynch GP, Meyer CP, Huber SM, Freehill MQ. Nonoperative management for in-season athletes with anterior shoulder instability. Am J Sports Med. 2004 Sep;32(6):1430-3. doi: 10.1177/0363546503262069. Epub 2004 Jul 20. Erratum in: Am J Sports Med. 2004 Oct-Nov;32(7):1780. PMID: 15310567.	No comparison, descriptive study.
Coyle M, Jaggi A, Weatherburn L, Daniell H, Chester R. Post-operative rehabilitation following traumatic anterior shoulder dislocation: A systematic scoping review. Shoulder Elbow. 2023 Oct;15(5):554-565. doi: 10.1177/17585732221089636. Epub 2022 Mar 31. PMID: 37811389; PMCID: PMC10557935.	No intervention and comparison defined, wrong design: scoping review.
Donohue MA, Brelin AM, LeClere LE. Management of First-Time Shoulder Dislocation in the Contact Athlete. Operative Techniques in Sports Medicine. 2016; Aug. DOI: 10.1053/j.otsm.2016.09.001	No intervention and comparison defined, wrong desig.
Eljabu W, Klinger HM, von Knoch M. The natural course of shoulder instability and treatment trends: a systematic review. J Orthop Traumatol. 2017 Mar;18(1):1-8. doi: 10.1007/s10195-016-0424-9. Epub 2016 Aug 17. PMID: 27535060; PMCID: PMC5311001.	No intervention and comparison, wrong outcome.
Eshoj H, Rasmussen S, Frich LH, Hvass I, Christensen R, Jensen SL, Søndergaard J, Søgaard K, Juul-Kristensen B. A neuromuscular exercise programme versus standard care for patients with traumatic anterior shoulder instability: study protocol for a randomised controlled trial (the SINEX study). Trials. 2017 Feb 28;18(1):90. doi: 10.1186/s13063-017-1830-x. PMID: 28245853; PMCID: PMC5331774.	wrong design: study protocol.
Gibson K, Growse A, Korda L, Wray E, MacDermid JC. The effectiveness of rehabilitation for nonoperative management of shoulder instability: a systematic review. J Hand Ther. 2004 Apr-Jun;17(2):229-42. doi: 10.1197/j.jht.2004.02.010. PMID: 15162108.	No/wrong comparisons made.
Griffin J, Jaggi A, Daniell H, Chester R. A systematic review to compare physiotherapy treatment programmes for atraumatic shoulder instability. Shoulder Elbow. 2023 Aug;15(4):448-460. doi: 10.1177/17585732221080730. Epub 2022 Feb 18. PMID: 37538527; PMCID: PMC10395403.	Wrong design and population: scoping review.
Hagesæter AN, Løvold T, Juul-Kristensen B, Blomquist J, Hole R, Eshoj H, Magnussen LH. Feasibility of the SINEX program for patients with traumatic anterior shoulder instability. Pilot Feasibility Stud. 2020 Oct 6;6:148. doi: 10.1186/s40814-020-00679-x. PMID: 33042568; PMCID: PMC7541274.	No comparison, wrong outcome.
Hanchard NC, Goodchild LM, Kottam L. Conservative management following closed reduction of traumatic anterior dislocation of the shoulder. Cochrane Database Syst Rev. 2014 Apr 30;(4):CD004962. doi: 10.1002/14651858.CD004962.pub3. Update in: Cochrane Database Syst Rev. 2019 May 10;5:CD004962. doi: 10.1002/14651858.CD004962.pub4. PMID: 24782346.	Cochrane update, but not the most recent Cochrane. Also does Cochrane regard the wrong intervention.
Handoll HH, Hanchard NC, Goodchild L, Feary J. Conservative management following closed reduction of traumatic anterior	Not the most recent Cochrane.

dislocation of the shoulder. Cochrane Database Syst Rev. 2006 Jan 25;(1):CD004962. doi: 10.1002/14651858.CD004962.pub2. Update in: Cochrane Database Syst Rev. 2014 Apr 30;(4):CD004962. doi: 10.1002/14651858.CD004962.pub3. PMID: 16437506.	
Kavaja L, Lähdeoja T, Malmivaara A, Paavola M. Treatment after traumatic shoulder dislocation: a systematic review with a network meta-analysis. Br J Sports Med. 2018 Dec;52(23):1498-1506. doi: 10.1136/bjsports-2017-098539. Epub 2018 Jun 23. PMID: 29936432; PMCID: PMC6241619.	Meets PICO, but only one study meets our PICO.
Kearney RS, Dhanjal G, Parsons N, Ellard D, Parsons H, Haque A, Karasouli E, Mason J, Nwankwo H, Brown J, Liew Z, Drew S, Modi C, Bush H, Torgerson D, Underwood M. Acute Rehabilitation following Traumatic anterior shoulder dISlocAtioN (ARTISAN): protocol for a multicentre randomised controlled trial. BMJ Open. 2020 Nov 19;10(11):e040623. doi: 10.1136/bmjopen-2020-040623. PMID: 33444204; PMCID: PMC7678365.	Wrong design: study protocol.
Lafrance S, Ouellet P, Alaoui R, Roy JS, Lewis J, Christiansen DH, Dubois B, Langevin P, Desmeules F. Motor Control Exercises Compared to Strengthening Exercises for Upper- and Lower-Extremity Musculoskeletal Disorders: A Systematic Review With Meta-Analyses of Randomized Controlled Trials. Phys Ther. 2021 Jul 1;101(7):pzab072. doi: 10.1093/ptj/pzab072. PMID: 33609357.	Meets PICO, but only one study meets our PICO.
Liew Z, Mazuquin B, Ellard DR, Karasouli E, Drew S, Modi C, Bush H, Underwood M, Kearney RS. Development of a single-session physiotherapy and self-management intervention for the treatment of primary traumatic anterior shoulder dislocation for the 'Acute Rehabilitation following Traumatic anterior shoulder dISlocAtioN (ARTISAN)' multi centre RCT. Physiotherapy. 2021 Dec;113:80-87. doi: 10.1016/j.physio.2021.06.002. Epub 2021 Jun 17. PMID: 34607077; PMCID: PMC8612274.	Wrong design.
Olds M, Ellis R, Donaldson K, Parmar P, Kersten P. Risk factors which predispose first-time traumatic anterior shoulder dislocations to recurrent instability in adults: a systematic review and meta-analysis. Br J Sports Med. 2015 Jul;49(14):913-22. doi: 10.1136/bjsports-2014-094342. Epub 2015 Apr 21. PMID: 25900943; PMCID: PMC4687692.	No intervention and comparison.
Stokes DJ, McCarthy TP, Frank RM. Physical Therapy for the Treatment of Shoulder Instability. Phys Med Rehabil Clin N Am. 2023 May;34(2):393-408. doi: 10.1016/j.pmr.2022.12.006. Epub 2023 Feb 26. PMID: 37003660.	Wrong design.
Struyf F, Cagnie B, Cools A, Baert I, Brempt JV, Struyf P, Meeus M. Scapulothoracic muscle activity and recruitment timing in patients with shoulder impingement symptoms and glenohumeral instability. J Electromyogr Kinesiol. 2014 Apr;24(2):277-84. doi: 10.1016/j.jelekin.2013.12.002. Epub 2013 Dec 18. PMID: 24389333.	No intervention and comparison.

Literature search strategy

Algemene informatie

Cluster/richtlijn: Schouderinstabiliteit - Module 3 en 5.2 Conservatieve behandeling	
Uitgangsvraag/modules: • Bij welke patiënten met schouderinstabiliteit is conservatieve behandeling geïndiceerd? • Wat is de optimale revalidatie na een schouderoperatie bij schouderinstabiliteit om terug te keren naar ADL en sport?	
Database(s): Embase.com, Ovid/Medline	Datum: 26 augustus 2024
Periode: vanaf 2000	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/1134284
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Deduplication: voor het ontdubbelen is gebruik gemaakt van http://dedupendnote.nl/	

Toelichting: Voor deze vraag is gezocht op de elementen schouderinstabiliteit EN (oefentherapie OF conservatieve therapie). De sleutelartikelen worden gevonden met deze search.
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 26 augustus 2024 systematisch gezocht naar systematische reviews en RCTs over de plaats van oefentherapie/ conservatieve therapie bij patiënten met schouderinstabiliteit. De literatuurzoekactie leverde 675 unieke treffers op.

Zoekopbrengst 26 augustus 2024

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	159	128	201
RCT	377	230	474
Observationele studies	*827*	*578*	
Totaal	536	358	**675***

in Rayyan

5 *Zoekstrategie Embase.com 26 augustus 2024*

No.	**Query**	**Results**
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR ('shoulder'/exp AND ('dislocation'/de OR 'recurrent dislocation'/exp OR 'subluxation'/exp OR 'joint dislocation'/exp OR 'bone erosion'/exp OR 'joint instability'/de)) OR ((('shoulder*' OR 'gleno-humeral*' OR 'humer*' OR 'scapulohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*')):ti,ab,kw) OR ('shoulder*':ti,ab,kw AND (('bon*' NEAR/3 ('resorption' OR 'loss' OR 'erosion*')):ti,ab,kw)) OR 'bankart lesion'/exp OR (('bankart' NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR (('hill-sachs' NEAR/3 'lesion*'):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/6 ('hill sachs' OR 'bone loss' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	19245
#2	'physiotherapy'/exp OR 'kinesiotherapy'/exp OR 'occupational therapy'/exp OR 'exercise'/exp OR 'proprioception'/exp OR 'proprioceptive exercise'/exp OR 'rehabilitation'/exp OR 'neuromuscular exercise'/exp OR 'motor control exercise'/exp OR 'apprehension'/exp OR (((kinaesthetic OR kinesio* OR kinesthetic OR kinetic* OR 'rotator cuff') NEAR/3 (discrimination* OR perception* OR perceptual)):ti,ab,kw) OR (((neuromuscular OR resistance OR strength OR 'motor control' OR coordination OR stability) NEAR/3 (exercise* OR training*)):ti,ab,kw) OR 'proprioception*':ti,ab,kw OR physiotherap*:ti,ab,kw OR 'physio therap*':ti,ab,kw OR 'physical therap*':ti,ab,kw OR kinesiotherap*:ti,ab,kw OR kinesitherapeutic*:ti,ab,kw OR 'occupation* therap*':ti,ab,kw OR ergotherap*:ti,ab,kw OR rehabilit*:ti,ab,kw OR revalidat*:ti,ab,kw OR 'kinetic chain*':ti,ab,kw OR propriocepsis:ti,ab,kw OR proprioceptive*:ti,ab,kw OR 'apprehension':ti,ab,kw OR 'postoperative management':ti,ab,kw	1303348
#3	#1 AND #2	3595
#4	#3 AND [2000-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	2640
#5	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	1056009

#6	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	4094350
#7	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8376239
#8	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	15339755
#9	#4 AND #5 - SR	159
#10	#4 AND #6 NOT #9 - RCT	377
#11	*#4 AND (#7 OR #8) NOT (#9 OR #10) - Observationeel*	*827*
#12	#9 OR #10 OR #11 - Totaal	536

Zoekstrategie Ovid/Medline 26 augustus 2024

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	14152
2	exp Conservative Treatment/ or exp Physical Therapy Modalities/ or exp Occupational Therapy/ or exp Exercise/ or exp Exercise Therapy/ or exp Rehabilitation/ or ((kinaesthetic or kinesio* or kinesthetic or kinetic* or rotator cuff) adj3 (discrimination* or perception* or perceptual)).ti,ab,kf. or ((neuromuscular or resistance or strength or motor control or coordination or stability) adj3 (exercise* or training*)).ti,ab,kf. or proprioception*.ti,ab,kf. or physiotherap*.ti,ab,kf. or physio therap*.ti,ab,kf. or physical therap*.ti,ab,kf. or kinesiotherap*.ti,ab,kf. or kinesitherapeutic*.ti,ab,kf. or occupation* therap*.ti,ab,kf. or ergotherap*.ti,ab,kf. or rehabilit*.ti,ab,kf. or revalidat*.ti,ab,kf. or kinetic chain*.ti,ab,kf. or propriocepsis.ti,ab,kf. or proprioceptive*.ti,ab,kf. or apprehension.ti,ab,kf. or postoperative management.ti,ab,kf.	831252
3	1 and 2	2172
4	limit 3 to yr="2000 -Current"	1662
5	4 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	1606
6	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella	769650

	or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	
7	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2768340
8	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4809539
9	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	5768007
10	5 and 6 - SR	128
11	(5 and 7) not 10 - RCT	230
12	*(5 and (8 or 9)) not (10 or 11) - Observationeel*	*578*
13	10 or 11 or 12 - Totaal	358

Bijlagen Module 4 operatieve behandeling

1. *What are the benefits and harms of a soft tissue procedure compared to an osseous procedure for patients with shoulder instability* ***who suffered 2 or more dislocations*** *and/or with less than 25% bone loss?*

5

Table 1 - Risk of bias table for intervention studies (randomized controlled trials; based on Cochrane risk of bias tool and suggestions by the CLARITY Group at McMaster University), studies included for question 1

Study reference (first author, publication year)	**Was the allocation sequence adequately generated?** Definitely yes Probably yes Probably no Definitely no	**Was the allocation adequately concealed?** Definitely yes Probably yes Probably no Definitely no	**Blinding: Was knowledge of the allocated interventions adequately prevented?** **Were patients blinded?** **Were healthcare providers blinded?** **Were data collectors blinded?** **Were outcome assessors blinded?** **Were data analysts blinded?** Definitely yes Probably yes Probably no Definitely no	**Was loss to follow-up (missing outcome data) infrequent?** Definitely yes Probably yes Probably no Definitely no	**Are reports of the study free of selective outcome reporting?** Definitely yes Probably yes Probably no Definitely no	**Was the study apparently free of other problems that could put it at a risk of bias?** Definitely yes Probably yes Probably no Definitely no	**Overall risk of bias** **If applicable/necessary, per outcome measure** **LOW** **Some concerns** **HIGH**
Abouelsoud (2015)	Probably no Reason: Besides in – and exclusion criteria they did not report on the allocation sequence. Solely stated that ''*Odd number patients had a*	Probably no Reason: Not reported	Probably no Reason: Not reported	Probably yes Reason: Loss to follow-up over time not reported.	Probably yes Reason: Study free of selective outcome reporting.	Probably yes Reason: No other comments.	High concerns of bias

	modified Latarjet procedure and even number patients had arthroscopic remplissage procedure with capsulolabral repair using four anchors.'' This could suggest randomization however not specified.						
Kukkonen (2021)	Probably yes <u>Reason:</u> All patients were screened for the trial if they had been referred to the participating institutes with anteroinferior shoulder instability after an initial traumatic dislocation. The enrolled patients were randomised into either the arthroscopic Bankart or the Open Latarjet procedure. Further information not provided.	Probably no <u>Reason:</u> Not reported	Probably no <u>Reason:</u> Blinding not reported. Solely mentioned that all operations were carried out by experienced shoulder surgeons. Before commencing the trial, the surgeons held a wet-lab consensus meeting to decide how to perform both operations uniformly and in the best possible way. Additionally, a clinician or physiotherapist assessed the clinical outcomes.	Probably yes <u>Reason:</u> Drop-out rate was 25% at two-year follow-up. Further not specified what the percentage of drop-out was in each study group.	Probably yes <u>Reason:</u> Study free of selective outcome reporting. SSV, WOSI, Constant Score etc. solely presented in figures (Figure 5) → not quantified textually.	Probably yes <u>Reason:</u> Small comment: funding source not reported.	Some concerns of bias
Russo (2017)	Probably no <u>Reason:</u> From December 2011 to October 2015, 51 patients with anterior gleno-humeral instability underwent an open Latarjet procedure, and 40 to an ASA plus Bankart repair. Subsequently, 20 patients were selected from 51 patients treated with the Latarjet–Patte	Probably no <u>Reason:</u> Not reported	Probably no <u>Reason:</u> Blinding not reported. Solely stated that clinical and radiological assessments were performed by one radiologist and two different shoulder surgeons.	Probably yes <u>Reason:</u> Loss to follow-up over time not reported.	Probably yes <u>Reason:</u> Study free of selective outcome reporting.	Probably yes <u>Reason:</u> Funding source not reported, setting not reported (solely affiliations authors).	High concerns of bias

	procedure with a minimum and maximum follow-up of 20 and 30 months, and the first 20 cases out of 40, treated with the Bankart plus ASA procedure, with a minimum follow-up of 12 months, were selected.						
Zarezade (2014)	Probably no Reason: Patients with recurrent anterior shoulder dislocation who were candidates for surgical treatment were randomly divided into two groups More information was not provided.	Probably no Reason: Not reported	Probably no Reason: Not reported	Probably no Reason: In article it was stated that ''*During the study, we excluded three patients as they were unavailable and not coming to our centers, two from Bankart group and one from Bristow group. Finally, these two groups with a population of 18 and 19, respectively, were compared with each other*''.	Probably yes Reason: Study free of selective outcome reporting.	Probably yes Reason: No other comments.	Some concerns of Bias

Table 2 - Table of excluded studies, question 1

Reference	Reason for exclusion
An VV, Sivakumar BS, Phan K, Trantalis J. A systematic review and meta-analysis of clinical and patient-reported outcomes following two procedures for recurrent traumatic anterior instability of the shoulder: Latarjet procedure vs. Bankart repair. J Shoulder Elbow Surg. 2016 May;25(5):853-63. doi: 10.1016/j.jse.2015.11.001. Epub 2016 Jan 19. PMID: 26809355.	More recent and higher quality SR available (Imam, 2021)
Bessière C, Trojani C, Carles M, Mehta SS, Boileau P. The open latarjet procedure is more reliable in terms of shoulder stability than arthroscopic bankart repair. Clin Orthop Relat Res. 2014 Aug;472(8):2345-51. doi: 10.1007/s11999-014-3550-9. PMID: 24615422; PMCID: PMC4079884.	wrong design; retrospective cohort study
Billaud A, Baverel L; ReSurg; SoFEC; Metais P. Arthroscopic Latarjet yields better union and prevention of instability compared to arthroscopic bony Bankart repair in shoulders with recurrent anterior instability: a systematic review. Knee Surg Sports Traumatol Arthrosc. 2023 Dec;31(12):5994-6005. doi: 10.1007/s00167-023-07655-x. Epub 2023 Nov 18. PMID: 37980282.	More recent and higher quality SR available (Imam, 2021)
Bliven KCH, Parr GP. Outcomes of the Latarjet Procedure Compared With Bankart Repair for Recurrent Traumatic Anterior Shoulder Instability. J Athl Train. 2018 Feb;53(2):181-183. doi: 10.4085/1062-6050-232-16. Epub 2018 Jan 19. PMID: 29350555; PMCID: PMC5842908.	wrong desing; commentary paper
Davis WH, DiPasquale JA, Patel RK, Sandler AB, Scanaliato JP, Dunn JC, Parnes N. Arthroscopic Remplissage Combined With Bankart Repair Results in a Higher Rate of Return to Sport in Athletes Compared With Bankart Repair Alone or the Latarjet Procedure: A Systematic Review and Meta-analysis. Am J Sports Med. 2023 Oct;51(12):3304-3312. doi: 10.1177/03635465221138559. Epub 2023 Jan 9. PMID: 36622005.	No relevant papers included, included papers had wrong design; retrospective studies or non-comparative
Ernstbrunner L, De Nard B, Olthof M, Beeler S, Bouaicha S, Gerber C, Wieser K. Long-term Results of the Arthroscopic Bankart Repair for Recurrent Anterior Shoulder Instability in Patients Older Than 40 Years: A Comparison With the Open Latarjet Procedure. Am J Sports Med. 2020 Jul;48(9):2090-2096. doi: 10.1177/0363546520931090. Epub 2020 Jun 24. PMID: 32579397.	wrong design; retrospective cohort study
Haroun HK, Sobhy MH, Abdelrahman AA. Arthroscopic Bankart repair with remplissage versus Latarjet procedure for management of engaging Hill-Sachs lesions with subcritical glenoid bone loss in traumatic anterior shoulder instability: a systematic review and meta-analysis. J Shoulder Elbow Surg. 2020 Oct;29(10):2163-2174. doi: 10.1016/j.jse.2020.04.032. Epub 2020 Jun 9. PMID: 32807370.	Not all included papers were relevant, relevant papers were included individually in the analysis of literature
Hurley E, Anil U, Lim Fat D, Pauzenberger L, Strauss E, Mullett H. Operative Treatment of Anterior Shoulder Instability A Network Meta-Analysis. Bull Hosp Jt Dis (2013). 2020 Sep;78(3):202-209. PMID: 32857028.	More recent and higher quality SR available (Imam, 2021)
Hurley ET, Davey MS, Montgomery C, O'Doherty R, Gaafar M, Pauzenberger L, Mullett H. Arthroscopic Bankart Repair Versus Open Latarjet for Recurrent Shoulder Instability in Athletes. Orthop J Sports Med. 2021 Sep 8;9(9):23259671211023801. doi: 10.1177/23259671211023801. PMID: 34527752; PMCID: PMC8436306.	wrong design; retrospective cohort study
Imam MA, Shehata MSA, Martin A, Attia H, Sinokrot M, Bahbah EI, Gwilym S, Jacob J, Narvani AA, Meyer DC. Bankart Repair Versus Latarjet Procedure for Recurrent Anterior Shoulder Instability: A Systematic Review and Meta-analysis of 3275 Shoulders. Am J Sports Med. 2021 Jun;49(7):1945-1953. doi: 10.1177/0363546520962082. Epub 2020 Dec 2. Erratum in: Am J Sports Med. 2021 Jul;49(8):NP34. doi: 10.1177/03635465211024618. PMID: 33264030.	Not all included papers were relevant, relevant papers were included individually in the analysis of literature
Jeon YS, Jeong HY, Lee DK, Rhee YG. Borderline Glenoid Bone Defect in Anterior Shoulder Instability: Latarjet Procedure Versus Bankart Repair. Am J Sports Med. 2018 Jul;46(9):2170-2176. doi: 10.1177/0363546518776978. Epub 2018 Jun 7. PMID: 29879363.	wrong design; retrospective cohort study

Longo UG, Loppini M, Rizzello G, Ciuffreda M, Maffulli N, Denaro V. Latarjet, Bristow, and Eden-Hybinette procedures for anterior shoulder dislocation: systematic review and quantitative synthesis of the literature. Arthroscopy. 2014 Sep;30(9):1184-211. doi: 10.1016/j.arthro.2014.04.005. Epub 2014 Jun 4. PMID: 24907025.	More recent and higher quality SR available (Imam, 2021)
Mahirogullari M, Kuskucu M, Solakoglu C, Akmaz I, Pehlivan O, Kiral A, Kaplan H. Comparison of outcomes of two different surgeries in regarding to complications for chronic anterior shoulder instability. Arch Orthop Trauma Surg. 2006 Dec;126(10):674-9. doi: 10.1007/s00402-006-0190-x. Epub 2006 Jul 29. PMID: 16896744.	More recent and higher quality SR available (Imam, 2021)
Maiotti M, De Vita A, De Benedetto M, Cerciello S, Massoni C, Di Giunta A, Raffelini F, Lo Cascio R, Pirani P, Castricini R. Clinical outcomes and recurrence rate of 4 procedures for recurrent anterior shoulder instability: ASA, remplissage, open, and arthroscopic Latarjet: a multicenter study. J Shoulder Elbow Surg. 2023 May;32(5):931-938. doi: 10.1016/j.jse.2022.10.030. Epub 2022 Dec 5. PMID: 36470517.	wrong design; retrospective cohort study
Rai S, Tamang N, Sharma LK, Marasini RP, Singh JL, Khanal K, Ghimire Kc M, Sherchan B. Comparative study of arthroscopic Bankart repair versus open Latarjet procedure for recurrent shoulder dislocation. J Int Med Res. 2021 Apr;49(4):3000605211007328. doi: 10.1177/03000605211007328. PMID: 33845604; PMCID: PMC8047861.	wrong design; retrospective cohort study
Tucker A, Ma J, Sparavalo S, Coady CM, Wong I. Arthroscopic anatomic glenoid reconstruction has a lower rate of recurrent instability compared to arthroscopic Bankart repair while otherwise maintaining a similar complication and safety profile. J ISAKOS. 2022 Oct;7(5):113-117. doi: 10.1016/j.jisako.2022.05.003. Epub 2022 May 29. PMID: 35649503.	wrong design; retrospective cohort study
Wang, Yanjiao, Rui Wang, and Luning Sun. "Bankart pepair versus Bristow-Latarjet procedure for recurrent anterior instability of the shoulder: a meta-analysis." Chinese Journal of Tissue Engineering Research 25.21 2021: 3423.	More recent and higher quality SR available (Imam, 2021)
Wu D, Zhou Z, Song W, Chen D, Bai Z, Zhang X, Yu W, He Y. Arthroscopic Autologous Iliac Crest Grafting Results in Similar Outcomes and Low Recurrence Compared to Remplissage Plus Bankart Repair for Anterior Shoulder Instability With Bipolar Bone Defects. Arthroscopy. 2023 Jul;39(7):1600-1607. doi: 10.1016/j.arthro.2022.12.039. Epub 2023 Jan 25. PMID: 36708746.	wrong design; retrospective cohort study
Zimmermann SM, Scheyerer MJ, Farshad M, Catanzaro S, Rahm S, Gerber C. Long-Term Restoration of Anterior Shoulder Stability: A Retrospective Analysis of Arthroscopic Bankart Repair Versus Open Latarjet Procedure. J Bone Joint Surg Am. 2016 Dec 7;98(23):1954-1961. doi: 10.2106/JBJS.15.01398. PMID: 27926676.	wrong design; retrospective cohort study

Literature search strategy

Algemene informatie

Cluster/richtlijn: Schouderinstabiliteit Module 6 en 7 - Operatieve behandeling 1 en 2	
Uitgangsvraag/modules: Wat is de indicatie voor een operatieve behandeling bij patiënten met schouderinstabiliteit? Wat is de indicatie voor een operatieve behandeling bij patiënten met recidief schouderinstabiliteit na eerdere operatieve behandeling?	
Database(s): Embase.com, Ovid/Medline	Datum: 20-12-2023
Periode: vanaf 2003	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/879934
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen: - Patiënten met schouderinstabiliteit - Weke dele procedure - Ossale procedure	

Vanwege de grote opbrengst is in overleg gezocht met de P AND I AND C. → Het sleutelartikel PMID 33172578 wordt niet gevonden met deze search. Het valt uit op studiedesign.
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 20-12-2023 systematisch gezocht naar systematische reviews, RCTs en observationele studies over wekedelen procedures vergeleken met een ossale procedures voor patiënten met schouder instabiliteit. De literatuurzoekactie leverde 274 unieke treffers op.

Zoekopbrengst

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	42	36	46
RCT	38	17	44
Observationeel	161	151	185
Totaal	241	204	**275***

****in Rayyan***

5 ***Zoekstrategie Embase.com 20-12-2023***

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR ('shoulder'/exp AND ('dislocation'/de OR 'recurrent dislocation'/exp OR 'subluxation'/exp OR 'joint dislocation'/exp OR 'bone erosion'/exp OR 'joint instability'/de)) OR ((('shoulder' OR 'gleno-humeral*' OR 'humer*' OR 'scapulohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*')):ti,ab,kw) OR ('shoulder':ti,ab,kw AND (('bon*' NEAR/3 ('resorption' OR 'loss' OR 'erosion')):ti,ab,kw)) OR 'bankart lesion'/exp OR (('bankart' NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR (('hill-sachs' NEAR/3 'lesion*'):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/6 ('hill sachs' OR 'bone loss' OR 'shoulder' OR 'lesion*')):ti,ab,kw)	18193
#2	'soft tissue'/exp AND 'procedures'/exp OR 'bankart repair'/exp OR 'putti-platt operation'/exp OR 'slap repair'/exp OR ((('bankart' OR 'putti-platt' OR 'slap' OR 'superior labr* anterior posterior') NEAR/3 ('operation*' OR 'procedure*' OR 'repair*' OR 'surger*' OR 'technique')):ti,ab,kw) OR 'capsulolabral repair':ti,ab,kw OR 'remplissage':ti,ab,kw OR 'soft tissue procedure*':ti,ab,kw	60633
#3	'latarjet procedure'/exp OR 'eden-hybinette procedure'/exp OR 'bone graft'/exp OR 'bone transplantation'/exp OR ((('bon*' OR 'osseous') NEAR/3 ('graft*' OR 'autograft*' OR 'allograft*' OR 'augmentation' OR 'block*' OR 'transplant*')):ti,ab,kw) OR ((('bristow-latarjet' OR 'latarjet' OR 'latarjet-bristow' OR 'eden hybbinette' OR 'hybbinette eden') NEAR/3 ('operation*' OR 'procedure*' OR 'surger*' OR 'technique' OR 'stabilizat*' OR 'repair')):ti,ab,kw)	143704
#4	#1 AND #2 AND #3	561
#5	#4 AND [2003-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	417
#6	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR	987412

	((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	
#7	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	3939234
#8	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	7991815
#9	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR (('or' OR 'rr') NEAR/6 ci):ab)))	14679817
#10	#5 AND #6 **– SR's**	42
#11	#5 AND #7 NOT #10 **– RCT's**	38
#12	#5 AND (#8 OR #9) NOT (#10 OR #11) **– Observationele studies**	161
#13	#10 OR #11 OR #12	241

Ovid/Medline 20-12-2023

#	Searches	Results
1	exp Shoulder Dislocation/ or (exp Shoulder Joint/ and exp Joint Instability/) or ((shoulder or gleno-humeral* or humer* or scapulohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat*)).ti,ab,kf. or (shoulder and (bon* adj3 (resorption or loss or erosion or tear))).ti,ab,kf. or (exp Bankart Lesions/ or (bankart adj3 (fracture* or lesion* or tear*)).ti,ab,kf.) or (hill-sachs adj3 lesion*).ti,ab,kf. or ((on track or off track) adj6 (hill sachs or bone loss or shoulder or lesion*)).ti,ab,kf.	13289
2	(((bankart or putti-platt or slap or superior labr* anterior posterior) adj3 (operation* or procedure* or repair* or surger* or technique)) or capsulolabral repair or remplissage or soft tissue procedure*).ti,ab,kf.	2645

3	Bone Transplantation/ or ((bon* or osseous) adj3 (graft* or autograft* or allograft* or augmentation or block* or transplant*)).ti,ab,kf. or ((bristow-latarjet or latarjet or latarjet-bristow or eden hybbinette or hybbinette eden) adj3 (operation* or procedure* or surger* or technique or stabilizat*)).ti,ab,kf.	102551
4	1 and 2 and 3	369
5	limit 4 to yr="2003 -2024"	355
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	330
7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	714934
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2670491
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4610598
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	5583617
11	6 and 7 **– SR's**	36
12	(6 and 8) not 11 **– RCT's**	17
13	(6 and (9 or 10)) not (11 or 12) **– Observationele studies**	151
14	11 or 12 or 13	204

Research question:

*2a. What are the benefits and harms of an **arthroscopic soft tissue (Bankart) procedure, compared with an open soft tissue (Bankart) surgery** in patients with traumatic anterior shoulder instability (without clear bone loss of the glenoid)?*

*2b. What are the benefits and harms of an **arthroscopic osseous (Bristow-Latarjet) procedure compared with an open osseous (Bristow-Latarjet) procedure** in patients with traumatic anterior shoulder instability (with suspicion of bone loss of the anterior glenoid)?*

Table 3 - Risk of bias table for intervention studies (randomized controlled trials; based on Cochrane risk of bias tool and suggestions by the CLARITY Group at McMaster University), studies included for question 2A

Study reference (first author, publication year)	**Was the allocation sequence adequately generated?** Definitely yes Probably yes Probably no Definitely no	**Was the allocation adequately concealed?** Definitely yes Probably yes Probably no Definitely no	**Blinding: Was knowledge of the allocated interventions adequately prevented?** **Were patients blinded?** **Were healthcare providers blinded?** **Were data collectors blinded?** **Were outcome assessors blinded?** **Were data analysts blinded?** Definitely yes Probably yes Probably no Definitely no	**Was loss to follow-up (missing outcome data) infrequent?** Definitely yes Probably yes Probably no Definitely no	**Are reports of the study free of selective outcome reporting?** Definitely yes Probably yes Probably no Definitely no	**Was the study apparently free of other problems that could put it at a risk of bias?** Definitely yes Probably yes Probably no Definitely no	**Overall risk of bias** **If applicable/necessary, per outcome measure** **LOW** **Some concerns** **HIGH**
Gupta, 2024	No information	No information	Definitely no Reason: it was stated that surgeons were blinded. Patients, assessors and data-	No information	Probably no Reason: it was stated that outcomes were assessed at 3, 6 and 12 months follow-up. Only outcomes at 12 months	Probably yes; Reason: no other sources of bias could be identified	High; No information on allocation and randomization procedure

			analysts were not blinded		follow-up were presented.		Lack of blinding Selective outcome reporting

Table 4 - Risk of bias table for interventions studies (cohort studies based on risk of bias tool by the CLARITY Group at McMaster University), studies included for question 2B

Author Year	Selection of participants Was selection of exposed and non-exposed cohorts drawn from the same population?	Exposure Can we be confident in the assessment of exposure?	Outcome of interest Can we be confident that the outcome of interest was not present at start of study?	Confounding-assessment Can we be confident in the assessment of confounding factors?	Confounding-analysis Did the study match exposed and unexposed for all variables that are associated with the outcome of interest or did the statistical analysis adjust for these confounding variables?	Assessment of outcome Can we be confident in the assessment of outcome?	Follow up Was the follow up of cohorts adequate? In particular, was outcome data complete or imputed?	Co-interventions Were co-interventions similar between groups?	Overall Risk of bias
Nascimento (2024)	***Probably no*** Reason: Although both groups met the same indication criteria for operation and followed the same postoperative protocol, they were treated in two different hospitals by different surgeons, which introduces a potential selection bias as they may not represent the exact same source population.	***Probably no*** Reason: The type of surgical procedure was clearly documented in operative records and confirmed with postoperative imaging. However, the procedures were performed by different surgeons in different hospitals, which could introduce variability in how the procedures were executed.	***Definitely yes*** Reason: The outcome was assessed postoperatively at defined intervals, and baseline measurements were recorded preoperatively.	***Definitely yes*** Reason: The study identified potential confounders. Preoperative CTs and clinical records were systematically reviewed for these. Comprehensive confounder assessment was performed.	***Probably no*** Reason: The study performed post hoc comparisons of baseline variables and multiple regression analysis to adjust for potential confounders. However, as this was a retrospective cohort study without matching, there remains a risk of residual confounding and bias.	***Definitely yes*** Reason: Outcomes were evaluated at fixed postoperative time points using standardized, validated measures. The same evaluation protocol was followed for both groups.	***Probably yes*** Reason: Patients had scheduled follow-ups at 2 weeks, 3, 6, 12, and 24 months. The study specified a minimum follow-up of 24 months as an inclusion criterion. There's no mention of missing data or imputation, implying complete follow-up data for included participants.	***Definitely yes*** Reason: The postoperative rehabilitation protocol was standardized across both institutions, regardless of the surgical approach.	**High**
Girard	***Definitely no***	***Probably yes***	***Definitely yes***	***Probably no***	***Probably no***	***Definitely yes***	***Probably yes***	***Probably yes***	**High**

(2022)	Reason: Patients were treated in two consecutive time periods: arthroscopic procedures from January to June 2018, and open procedures from July to December 2018.	Reason: The type of surgical procedure (arthroscopic vs. open Latarjet) was clearly documented in operative reports, performed by the same experienced surgeon, and verified postoperatively.	Reason: All outcome measures were assessed postoperatively. Baseline clinical and radiological data were collected preoperatively.	Reason: Although baseline data were collected, there may still be unmeasured or uncontrolled confounders because no matching or advanced statistical adjustments were performed.	Reason: No matching or regression analysis; risk of residual confounding due to retrospective, time-based allocation.	Reason: Clinical and radiological outcomes were assessed by an independent observer blinded to the surgeon (for clinical follow-ups) and via standardized imaging protocols (CT at 6 months, repeated at 12 months if needed).	Reason: all patients had at least 12 months of clinical follow-up, with predefined follow-up visits at day 15, day 45, 3 months, 6 months, and 1 year.	Reason: Both groups received the same anesthesia protocol, perioperative medication regimen, and an identical, standardized rehabilitation protocol.	
Gaujac (2024)	***Probably no*** Reason: Patients were treated in two time periods: 2014–2017 vs. 2017–2019, but were slected from the same center and single operator.	***Probably yes*** Reason: The exposure (surgical technique: anterior drilling with screws vs. posterior drilling with buttons) is clearly defined and perfomed by a single operator.	***Defenitiy yes*** Reason: The study involves surgery for recurrent anterior shoulder instability; all patients had this condition before surgery.	***Probably no*** Reason: The groups were defined by time period, so temporal confounders may exist. There is no mention of baseline characteristic comparisons or additional confounder assessment.	***Definitely no*** Reason: The groups were not matched or randomized, and no statistical adjustment for confounders was reported.	***Probably yes*** Reason: Outcome measures were objective (CT scan with specific measurements), analyzed by two independent observers with good reproducibility. Observer 1 conducted blind measurements twice with a 2-month gap.	***Probably yes*** Reason: Follow-up was up to 24 months for complications and functional scores. There is no explicit statement about completeness or handling of missing data.	***Probably yes*** Reason: Postoperative care and rehabilitation protocols were the same for both groups.	**High**
Tanaka (2024)	***Probably yes*** Reason: Both groups (open Bristow and AS-assisted Bristow) were drawn from the same center, during overlapping but	***Probably yes*** Reason: Clearly documented with detailed surgical technique descriptions. The exposure is	***Definitiely yes*** Reason: The study focuses on postoperative outcomes.	***Probably no*** Reason: The study collected baseline clinical scores and demographic data, but there is no detailed description of	***Definitely no*** Reason: No clear evidence of matching or multivariate adjustment for confounders. The groups were compared using	***Probably no*** Reason: Blinding of outcome assessors was not stated, so detection bias is possible.	***Probably no*** Reason: Some patients were lost to follow-up (2 shoulders in AS-assisted group).	***Probably yes*** Reason: Both groups had similar rehab protocols, with no reported differences in adjunct treatments, so co-	**High**

	sequential time periods. The cohorts represent consecutive series of patients undergoing surgery for anterior shoulder instability who were rugby players.	well-defined and reliably assessed by surgical records.		adjustment or matching for confounders such as age, activity level, severity of instability, or prior surgeries between groups.	univariate statistical tests only (Mann-Whitney U and Fisher's exact test).			interventions were likely comparable.	
Glowez (2024)	***Probably no*** Reason: Only patients with failed Bankart repair treated by Bristow-Latarjet were included, but it is not clearly stated from what larger population these patients were selected.	***Probably yes*** Reason: Exposure is documented in surgical records.	***Probably yes*** Reason: All patients had recurrent instability or symptoms after primary Bankart, so the outcome was new.	***Probably no*** Reason: Some factors (sport type, bone loss severity) were assessed but not fully detailed.	***Definitely no*** Reason: No matching or multivariate adjustment reported.	***Probably yes*** Reason: Clinical and imaging outcomes assessed by two independent observers using validated tools.	***Probably yes*** Reason: Minimum 24 months follow-up with no mention of missing data or imputation.	No information Reason: This was not explicitly stated.	**High**

Table 5 – table of excluded studies question 2A and 2B

Reference	Reason for exclusion
Best MJ, Wang KY, Nayar SK, Agarwal AR, Kreulen RT, Sharma S, McFarland EG, Srikumaran U. Epidemiology of shoulder instability procedures: A comprehensive analysis of complications and costs. Shoulder Elbow. 2023 Aug;15(4):398-404. doi: 10.1177/17585732221116814. Epub 2022 Aug 4. PMID: 37538528; PMCID: PMC10395401.	wrong comparison: latarjet, anterior bone block reconstruction, arthroscopic bankart, open bankart
Markes AR, Cevallos N, Lansdown DA, Ma CB, Feeley BT, Zhang AL. Risk for recurrent instability and reoperation following arthroscopic and open shoulder stabilization in a large cross-sectional population. JSES Int. 2022 Jul 5;6(5):730-735. doi: 10.1016/j.jseint.2022.06.004. PMID: 36081703; PMCID: PMC9446191.	open versus arthrscopic stabilization surgery; not specified latarjet or Bankart
Bonnevialle N, Girard M, Dalmas Y, Martinel V, Faruch M, Mansat P. Short-Term Bone Fusion With Arthroscopic Double-Button Latarjet Versus Open-Screw Latarjet. Am J Sports Med. 2021 May;49(6):1596-1603. doi: 10.1177/03635465211001095. Epub 2021 Apr 8. PMID: 33830790.	Relevant data not reported
Prakash U, Kumar N. Open Versus Arthroscopic Surgical Management for Recurrent Anterior instability of the Shoulder: A Retrospective Analysis. International Journal of Pharmaceutical and Clinical Research 2024; 16(5); 1611-1614	Relevant data not reported
Russo (2017) Russo A, Grasso A, Arrighi A, Pistorio A, Molfetta L. Accuracy of Coracoid Bone Graft Placement: Open versus Arthroscopic Latarjet. Joints. 2017 Jul 28;5(2):85-88. doi: 10.1055/s-0037-1603934. PMID: 29114636; PMCID: PMC5672875.	No relevant outcomes reported
Taverna E, Guarrella V, Cartolari R, Ufenast H, Broffoni L, Barea C, Garavaglia G. Arthroscopically-assisted Latarjet: an easy and reproducible technique for improving the accuracy of graft and screw placement. Shoulder Elbow. 2018 Apr;10(2):99-106. doi: 10.1177/1758573217706701. Epub 2017 May 15. PMID: 29560035; PMCID: PMC5851123.	No relevant outcomes reported
Abdul-Rassoul, H. and Galvin, J. W. and Curry, E. J. and Simon, J. and Li, X. Return to Sport After Surgical Treatment for Anterior Shoulder Instability: A Systematic Review. The American journal of sports medicine. 2019; 47 (6) :1507-1515	wrong outcome
Ahmed AS, Gabig AM, Dawes A, Gottschalk MB, Lamplot JD, Wagner ER. Trends and projections in surgical stabilization of glenohumeral instability in the United States from 2009 to 2030: rise of the Latarjet procedure and fall of open Bankart repair. J Shoulder Elbow Surg. 2023 Aug;32(8):e387-e395. doi: 10.1016/j.jse.2023.03.011. Epub 2023 Apr 10. PMID: 37044304.	wrong design: database analysis
Bitar IJ, Marangoni LD, Bustos DG, Pezzutti L, Bitar LB. Open Bankart repair plus inferior capsular shift versus isolated arthroscopic Bankart repair in collision athletes with recurrent anterior shoulder instability: a prospective study. J Shoulder Elbow Surg. 2024 Dec;33(12):2572-2579. doi: 10.1016/j.jse.2024.03.041. Epub 2024 May 10. PMID: 38734129.	wrong design: geen randomisatie
Bottoni CR, Johnson JD, Zhou L, Raybin SG, Shaha JS, Cruz CA, Lindell KK, Thoma DC. Arthroscopic Versus Open Anterior Shoulder Stabilization: A Prospective Randomized Clinical Trial With 15-Year Follow-up With an Assessment of the Glenoid Being "On-Track" and "Off-Track" as a Predictor of Failure. Am J Sports	wrong outcome: clinical failure, defined as single redislocation, surgery for recurrent dislocation, subjective instability

Med. 2021 Jul;49(8):1999-2005. doi: 10.1177/03635465211018212. Epub 2021 Jun 8. Erratum in: Am J Sports Med. 2022 Feb;50(2):NP14-NP15. doi: 10.1177/03635465211067445. PMID: 34102075.	
Cerciello, S. and Corona, K. and Morris, B. J. and Santagada, D. A. and Maccauro, G. Early Outcomes and Perioperative Complications of the Arthroscopic Latarjet Procedure: Systematic Review and Meta-analysis. The American journal of sports medicine. 2019; 47 (9) :2232-2241	only case-series and case reports included
Chen, L. and Xu, Z. and Peng, J. and Xing, F. and Wang, H. and Xiang, Z. Effectiveness and safety of arthroscopic versus open Bankart repair for recurrent anterior shoulder dislocation: a meta-analysis of clinical trial data. Archives of Orthopaedic and Trauma Surgery. 2015; 135 (4) :529-538	More recent and higher quality SR available
Cho, Chul-Hyun and Na, Sang Soo and Choi, Byung-Chan and Kim, Du-Han Complications Related to Latarjet Shoulder Stabilization: A Systematic Review. The American journal of sports medicine. 2023; 51 (1) :263-270	wrong outcome: complication rate?
Desmeules, F. and Barry, J. and Roy, J. S. and Vendittoli, P. A. and Rouleau, D. M. Surgical interventions for post-traumatic anterior shoulder instability in adults. Cochrane Database of Systematic Reviews. 2014; 2014 (5) :CD011092	Low quality SR: SR (no specific description of the included primary studies)
Freedman, Kevin B. and Smith, Adam P. and Romeo, Anthony A. and Cole, Brian J. and Bach, Bernard R., Jr. Open Bankart repair versus arthroscopic repair with transglenoid sutures or bioabsorbable tacks for Recurrent Anterior instability of the shoulder: a meta-analysis. The American journal of sports medicine. 2004; 32 (6) :1520-1527	More recent and higher quality SR available
Gao, B. and DeFroda, S. and Bokshan, S. and Ready, L. V. and Sullivan, K. and Etzel, C. and Owens, B. D. Arthroscopic Versus Open Bankart Repairs in Recurrent Anterior Shoulder Instability: A Systematic Review of the Association Between Publication Date and Postoperative Recurrent Instability in Systematic Reviews. Arthroscopy - Journal of Arthroscopic and Related Surgery. 2020; 36 (3) :862-871	Wrong outcome; association between publication date and outcomes
Hobby, J. and Griffin, D. and Dunbar, M. and Boileau, P. Is arthroscopic surgery for stabilisation of chronic shoulder instability as effective as open surgery? A systematic review and meta-analysis of 62 studies including 3044 arthroscopic operations. Journal of Bone and Joint Surgery - Series B. 2007; 89 (9) :1188-1196	SR of comparative studies (no RCT) + case series
Hohmann, E. and Tetsworth, K. and Glatt, V. Open versus arthroscopic surgical treatment for anterior shoulder dislocation: a comparative systematic review and meta-analysis over the past 20 years. Journal of Shoulder and Elbow Surgery. 2017; 26 (10) :1873-1880	More recent and higher quality SR available
Horner, N. S. and Moroz, P. A. and Bhullar, R. and Habib, A. and Simunovic, N. and Wong, I. and Bedi, A. and Ayeni, O. R. Open versus arthroscopic Latarjet procedures for the treatment of shoulder instability: A systematic review of comparative studies. BMC Musculoskeletal Disorders. 2018; 19 (1) :255	More recent and higher quality SR available
Hurley, E. T. and Lim Fat, D. and Farrington, S. K. and Mullett, H. Open Versus Arthroscopic Latarjet Procedure for Anterior Shoulder Instability: A Systematic Review and Meta-analysis. The American journal of sports medicine. 2019; 47 (5) :1248-1253	More recent and higher quality SR available

Kumar S, Ranjan V, Utkarsh. A Retrospective Comparative Study of Arthroscopic Versus Open Surgical Treatment for Recurrent Anterior Instability of the Shoulder. Int J Pharm Clin Res. 2024;16(2):1214-1217. cite turn0search1	wrong design: retrospective study
Lee MS, Patel SM, Klug T, Moran J, Park N, Mahatme RJ, Fong S, Gillinov SM, Dawes A, Surucu S, Graf A, Jimenez AE. Over 89% of Patients Return to Work After Undergoing Arthroscopic or Open Latarjet Procedure for Anterior Shoulder Instability: A Systematic Review. Arthroscopy. 2024 Oct 9:S0749-8063(24)00781-3. doi: 10.1016/j.arthro.2024.09.056. Epub ahead of print. PMID: 39393429.	wrong outcome: return to work
Malahias, Michael-Alexander and Fandridis, Emmanouil and Chytas, Dimitrios and Chronopulos, Efstathios and Brilakis, Emmanouil and Antonogiannakis, Emmanouil Arthroscopic versus open Latarjet: a step-by-step comprehensive and systematic review. European journal of orthopaedic surgery & traumatology : orthopedie traumatologie. 2019; 29 (5) :957-966	More recent and higher quality SR available
Miura, K. and Tsuda, E. and Tohyama, H. and Iwahori, Y. and Mae, T. and Mochizuki, Y. and Nakagawa, K. and Nakamae, A. and Nakamura, T. and Takao, M. and Uchida, S. and Muneta, T. and Ochi, M. Can arthroscopic Bankart repairs using suture anchors restore equivalent stability to open repairs in the management of traumatic anterior shoulder dislocation? A meta-analysis. Journal of Orthopaedic Science. 2018; 23 (6) :935-941	Higher quality SR available
Mohtadi, N. G. H. and Bitar, I. J. and Sasyniuk, T. M. and Hollinshead, R. M. and Harper, W. P. Arthroscopic versus open repair for traumatic anterior shoulder instability: A meta-analysis. Arthroscopy - Journal of Arthroscopic and Related Surgery. 2005; 21 (6) :652-658	More recent and higher quality SR available
Pan D, Suo Y, Chen Q, Hou D, Zhang L. Effect of open versus minimally invasive surgery on postoperative wound site complications in patients with recurrent shoulder instability: A meta-analysis. Int Wound J. 2023 Sep 26;21(2):e14412. doi: 10.1111/iwj.14412. Epub ahead of print. Retraction in: Int Wound J. 2025 Mar;22(3):e70353. doi: 10.1111/iwj.70353. PMID: 37751908; PMCID: PMC10824617.	More recent and higher quality SR available
Petrera, M. and Patella, V. and Patella, S. and Theodoropoulos, J. A meta-analysis of open versus arthroscopic Bankart repair using suture anchors. Knee Surgery, Sports Traumatology, Arthroscopy. 2010; 18 (12) :1742-1747	More recent and higher quality SR available
Pulavarti, R. S. and Symes, T. H. and Rangan, A. Surgical interventions for anterior shoulder instability in adults. Cochrane Database of Systematic Reviews. 2009; (4) :CD005077	More recent and higher quality SR available
Randelli, P. and Fossati, C. and Stoppani, C. and Evola, F. R. and De Girolamo, L. Open Latarjet versus arthroscopic Latarjet: clinical results and cost analysis. Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA. 2016; 24 (2) :526-532	wrong outcome: cost analysis
Rollick, Natalie C. and Ono, Yohei and Kurji, Hafeez M. and Nelson, Atiba A. and Boorman, Richard S. and Thornton, Gail M. and Lo, Ian Ky Long-term outcomes of the Bankart and Latarjet repairs: a systematic review. Open access journal of sports medicine. 2017; 8 :97-105	Low quality SR: SR (no specific description of the included primary studies)
Uchiyama Y, Handa A, Shimpuku E, Omi H, Hashimoto H, Imai T, Watanabe M. Open Bankart repair plus inferior capsular shift versus arthroscopic Bankart repair without augmentations for traumatic anterior shoulder instability: A prospective study. J	wrong design: geen randomisatie

Orthop Surg (Hong Kong). 2017 Sep-Dec;25(3):2309499017727947. doi: 10.1177/2309499017727947. PMID: 28946834.	
Wang, L. and Liu, Y. and Su, X. and Liu, S. A meta-analysis of arthroscopic versus open repair for treatment of bankart lesions in the shoulder. Medical Science Monitor. 2015; 21 :3028-3035	More recent and higher quality SR available
Williams, H. L. M. and Evans, J. P. and Furness, N. D. and Smith, C. D. It's Not All About Redislocation: A Systematic Review of Complications After Anterior Shoulder Stabilization Surgery. The American journal of sports medicine. 2019; 47 (13) :3277-3283	Low quality SR: SR (no specific description of the included primary studies)
Zhu Y, Jiang C, Song G. Arthroscopic Versus Open Latarjet in the Treatment of Recurrent Anterior Shoulder Dislocation With Marked Glenoid Bone Loss: A Prospective Comparative Study. Am J Sports Med. 2017 Jun;45(7):1645-1653. doi: 10.1177/0363546517693845. Epub 2017 Mar 28. PMID: 28351205.	wrong design: geen randomisatie

Literature search strategy

Zoekverantwoording

Algemene informatie

Cluster/richtlijn: Richtlijn Schouderinstabiliteit - Module Artroscopisch versus open	
Uitgangsvraag/modules: Wat is de aanbevolen chirurgische ingreep (open of arthroscopisch) bij patiënten met traumatische anterieure instabiliteit en een indicatie voor operatieve behandeling?	
Database(s): Embase.com, Ovid/Medline	Datum: 20 november 2024
Periode: geen restrictie	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://new.rayyan.ai/reviews/1234657/overview
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Deduplication: voor het ontdubbelen is gebruik gemaakt van http://dedupendnote.nl/	
Toelichting: Voor deze vraag is gezocht op de elementen schouderinstabiliteit EN (Arthroscopische Latarjet OF Open Bankart repair). De sleutelartikelen worden gevonden met deze search. In overleg worden in eerste instantie alleen de SR's aangeboden in Rayyan. 23-01-2025: gerandomiseerde studies worden aangeboden in Rayyan 20-02-2025: observationeel onderzoek wordt gescreend met ASreview	

5

Zoekopbrengst 20 november 2024

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	259	255	**305***
RCT	401	224	478
Observationele studies	1545	1577	1868
Totaal	2205	2056	2651

in Rayyan

Zoekstrategie Embase.com 20 november 2024

No.	***Query***	***Results***

#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR 'bankart lesion'/exp OR ('shoulder'/exp AND ('dislocation'/de OR 'recurrent dislocation'/exp OR 'subluxation'/exp OR 'joint dislocation'/exp OR 'bone erosion'/exp OR 'joint instability'/de)) OR ((('shoulder*' OR 'gleno-humer*' OR 'glenoid*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*' OR 'defect*')):ti,ab,kw) OR (('shoulder*':ti,ab,kw OR glenoid*:ti,ab,kw OR 'gleno-humer*':ti,ab,kw OR 'humer*':ti,ab,kw OR 'scapulohumer*':ti,ab,kw OR 'glenohumer*':ti,ab,kw) AND (('bon*' NEAR/3 ('resorption*' OR 'loss*' OR 'erosion*')):ti,ab,kw)) OR ((('bankart' OR 'hill-sachs') NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/3 ('hill sachs' OR 'bone loss*' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	21034
#2	'latarjet procedure'/exp OR 'arthroscopic latarjet procedure'/exp OR 'eden-hybinette procedure'/exp OR 'bone graft'/exp OR 'bone transplantation'/exp OR ((('bon*' OR 'osseous') NEAR/3 ('graft*' OR 'autograft*' OR 'allograft*' OR 'augmentation*' OR 'block*' OR 'transplant*')):ti,ab,kw) OR ((('bristow-latarjet' OR 'latarjet' OR 'latarjet-bristow' OR 'eden hybbinette' OR 'hybbinette eden') NEAR/3 ('operat*' OR 'procedure*' OR 'surger*' OR 'technique*' OR 'stabilizat*' OR stabilisat* OR 'repair*' OR surgic*)):ti,ab,kw) OR ((arthroscopic* NEAR/7 latarjet):ti,ab,kw) OR ((arthroscopic* NEAR/3 (stabilizat* OR stabilisat*) NEAR/3 surger*):ti,ab,kw)	149011
#3	'soft tissue'/exp AND 'procedures'/exp OR 'bankart repair'/exp OR 'open bankart repair'/exp OR 'putti-platt operation'/exp OR 'slap repair'/exp OR ((('bankart' OR 'putti-platt' OR 'slap' OR 'superior labr* anterior posterior') NEAR/3 ('operat*' OR 'procedure*' OR 'repair*' OR 'surger*' OR 'technique*' OR surgic* OR 'stabilizat*')):ti,ab,kw) OR ((open NEAR/3 bankart):ti,ab,kw) OR 'capsulolabral repair*':ti,ab,kw OR 'remplissage':ti,ab,kw OR (('soft tissue*' NEAR/3 procedure*):ti,ab,kw)	64673
#4	#2 OR #3	211043
#5	#1 AND #4	4605
#6	#5 NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	3720
#7	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	1078783
#8	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	4145676
#9	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8498857

#10	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	15547564
#11	#6 AND #7 - SR	259
#12	#6 AND #8 NOT #11 - RCT	401
#13	#6 AND (#9 OR #10) NOT (#11 OR #12) - Observationeel	1545
#14	#11 OR #12 OR #13 - Totaal	2205

Zoekstrategie Ovid/Medline 20 november 2024

#	*Searches*	*Results*
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or (exp Shoulder Joint/ and exp Joint Instability/) or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (resorption* or loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	15381
2	(exp Arthroscopy/ and (exp General Surgery/ or exp Orthopedics/)) or Bone Transplantation/ or ((bon* or osseous) adj3 (graft* or autograft* or allograft* or augmentation* or block* or transplant*)).ti,ab,kf. or ((bristow-latarjet or latarjet or latarjet-bristow or eden hybbinette or hybbinette eden) adj3 (operat* or procedure* or surger* or technique* or stabilizat* or stabilisat* or repair* or surgic*)).ti,ab,kf. or (arthroscopic* adj7 latarjet).ti,ab,kf. or (arthroscopic* adj3 (stabilizat* or stabilisat*) adj3 surger*).ti,ab,kf.	106075
3	(((bankart or putti-platt or slap or superior labr* anterior posterior) adj3 (operat* or procedure* or repair* or surger* or technique* or surgic* or stabilizat*)) or (open adj3 bankart) or capsulolabral repair* or remplissage or (soft tissue* adj3 procedure*)).ti,ab,kf.	3896
4	2 or 3	109351
5	1 and 4	3416
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	3258

7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	791524
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2808360
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4887182
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	5840342
11	6 and 7 - SR	255
12	(6 and 8) not 11 - RCT	224
13	(6 and (9 or 10)) not (11 or 12) - Observationeel	1577
14	11 or 12 or 13 - Totaal	2056

3. *What are the benefits and harms of a soft tissue procedure compared to an osseous procedure for patients with* ***recurrent shoulder instability after previous surgery*** *with <15 % bone loss?*

Table 6 - Risk of bias table for interventions studies (cohort studies based on risk of bias tool by the CLARITY Group at McMaster University), studies included for question 3

Author, year	**Selection of participants** **Was selection of exposed and non-exposed cohorts drawn from the same population?** Definitely yes, probably yes, probably no, definitely no	**Exposure** **Can we be confident in the assessment of exposure?** Definitely yes, probably yes, probably no, definitely no	**Outcome of interest** **Can we be confident that the outcome of interest was not present at start of study?** Definitely yes, probably yes, probably no, definitely no	**Confounding-assessment** **Can we be confident in the assessment of confounding factors?** Definitely yes, probably yes, probably no, definitely no	**Confounding-analysis** **Did the study match exposed and unexposed for all variables that are associated with the outcome of interest or did the statistical analysis adjust for these confounding variables** Definitely yes, probably yes, probably no, definitely no	**Assessment of outcome** **Can we be confident in the assessment of outcome?** Definitely yes, probably yes, probably no, definitely no	**Follow up** **Was the follow up of cohorts adequate? In particular, was outcome data complete or imputed?** Definitely yes, probably yes, probably no, definitely no	**Co-interventions** **Were co-interventions similar between groups?** Definitely yes, probably yes, probably no, definitely no	**Overall Risk of bias** Low, Some concerns, High
Calvo, 2021	Definitely no Reason: treatment decision was based on the period in which the patients underwent surgery (before 2012 Bankart and after 2012 Latarjet)	Probably yes Reason: one single senior surgeon performed all procedures, surgical data was collected	Definitely yes Reason: Post-operative outcomes	No information	Probably no Reason: Select study population, but no matching or multivariate analysis	Definitely yes Reason: an independent examiner assessed the outcomes	Definitely yes Reason: There were no dropouts, and 2-year data were collected for all patients	Definitely yes Reason: patients followed the same postoperative protocol.	**Some concerns, due to the selection of participants, no correction for confounding factors**
Elamo 2020	Probably yes;	Definitely yes;	Definitely yes	Definitely yes	Probably no Reason:	Definitely yes	Definitely no	No information	**Some concerns,**

	Reason: all patients treated in a single hospital between 2002 and 2013	Reason: data was retrieved from the patient history and medical records	Reason: Post-operative outcomes	Reason: Post-operative data	No matching or multivariate analysis	Reason: the patients were clinically examined by an independent investigator	Reason: high loss-to-follow-up rate. Length of follow-up differed between intervention and control Respectively n=16 and n=5 in the intervention and control group		**no correction for confounding factors, high loss to follow-up rate**

Table 7 - Table of excluded studies for question 3

Reference	Reason for exclusion
Lho, T., Lee, J., Oh, K. S., & Chung, S. W. (2023). Latarjet procedure for failed Bankart repair provides better stability and return to sports, but worse postoperative pain and external rotation limitations with more complications, compared to revision Bankart repair: a systematic review and meta-analysis. Knee Surgery, Sports Traumatology, Arthroscopy, 31(8), 3541-3558.	SR and meta-analysis of 24 studies. The included studies in the SR with an adequate control group were: Elamo (2020), Calvo (2021), Werhtel et al., Flinkkilä et al., and Rossi et al.,. Werhtel et al., Flinkkilä et al., and Rossi et al. made the wrong comparison: a.o. to compare the postoperative outcomes of the Latarjet procedure when performed as primary surgery and as revision for a failed arthroscopic Bankart repair; to compare the results from Latarjet as a primary operation vs. revision surgery after a failed arthroscopic Bankart repair for posttraumatic anteroinferior shoulder instability. In addition, to assess the effect of preoperative bony pathology on outcome; and To compare return to sport, functional outcomes, and complications of the modified Latarjet performed as a primary or revision procedure in competitive athletes.
Frank, R. M., Mellano, C., Shin, J. J., Feldheim, T. F., Mascarenhas, R., Yanke, A. B., ... & Verma, N. N. (2015). Clinical outcomes following revision anterior shoulder stabilization: arthroscopic revision stabilization versus Latarjet. Orthopaedic Journal of Sports Medicine, 3(7_suppl2), 2325967115S00048.	Wrong study design
Longo, U. G., Loppini, M., Rizzello, G., Ciuffreda, M., Berton, A., Maffulli, N., & Denaro, V. (2014). Remplissage, humeral osteochondral grafts, weber osteotomy, and shoulder arthroplasty for the management of humeral bone defects in shoulder instability: systematic review and quantitative synthesis of the literature. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 30(12), 1650-1666.	In Boileau et al. (2012) (therapeutic study) patients with humeral-sidebone loss undergone previous surgery (Open Bristow-Latarjet procedure (6), open Bankart procedure(1), arthroscopic Bankart repair) Humeral-sidebone and Raiss (2014) also included patients with previous surgery however wrong design (retrospective study). Andere studies vergeleken ook bv de combinatie van remplis en bankart vs bankart alone (niet de I en C onze studie)
Clowez, G., Gendre, P., & Boileau, P. (2021). The Bristow-Latarjet procedure for revision of failed arthroscopic Bankart: a retrospective case series of 59 consecutive patients. Journal of Shoulder and Elbow Surgery, 30(12), e724-e731.	Wrong study design
Agarwalla, A., Gowd, A. K., Liu, J. N., Garcia, G. H., Perry, A. K., Polce, E. M., ... & Verma, N. N. (2022). High rate of return to work by 3 months following Latarjet for anterior shoulder instability. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 38(3), 684-691.	Wrong study design
Ranalletta, M., Rossi, L. A., Bertona, A., Tanoira, I., Maignon, G. D., & Bongiovanni, S. L. (2018). Modified Latarjet procedure without capsulolabral repair for the treatment of failed previous operative stabilizations in athletes. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 34(5), 1421-1427.	No comparison
Flinkkilä, T., & Sirniö, K. (2015). Open Latarjet procedure for failed arthroscopic Bankart repair. Orthopaedics & Traumatology: Surgery & Research, 101(1), 35-38.	Retrospective study and no comparison
O'Neill, D. C., Christensen, G., Kawakami, J., Burks, R. T., Greis, P. E., Tashjian, R. Z., & Chalmers, P. N. (2020). Revision anterior glenohumeral instability: is arthroscopic treatment an option?. JSES international, 4(2), 287-291.	Wrong study design
Boileau, P., Richou, J., Lisai, A., Chuinard, C., & Bicknell, R. T. (2009). The role of arthroscopy in revision of failed open anterior stabilization of the shoulder. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 25(10), 1075-1084.	Wrong study design

Friedman, L. G. M., Griesser, M. J., Miniaci, A. A., & Jones, M. H. (2014). Recurrent instability after revision anterior shoulder stabilization surgery. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 30(3), 372-381.	No comparison:, in all studies solely one procedure is mentioned > no comparison
Werthel, J. D., Sabatier, V., Schoch, B., Amsallem, L., Nourissat, G., Valenti, P., ... & Hardy, A. (2020). Outcomes of the Latarjet procedure for the treatment of chronic anterior shoulder instability: patients with prior arthroscopic Bankart repair versus primary cases. The American journal of sports medicine, 48(1), 27-32.	Wrong design: A multicenter retrospective comparative case-cohort analysis

Literature search strategy

Algemene informatie

Cluster/richtlijn: Schouderinstabiliteit Module 6 en 7 - Operatieve behandeling 1 en 2	
Uitgangsvraag/modules: Wat is de indicatie voor een operatieve behandeling bij patiënten met schouderinstabiliteit? Wat is de indicatie voor een operatieve behandeling bij patiënten met recidief schouderinstabiliteit na eerdere operatieve behandeling?	
Database(s): Embase.com, Ovid/Medline	Datum: 20-12-2023
Periode: vanaf 2003	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/879934
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen: - Patiënten met schouderinstabiliteit - Weke dele procedure - Ossale procedure Vanwege de grote opbrengst is in overleg gezocht met de P AND I AND C. → Het sleutelartikel PMID 33172578 wordt niet gevonden met deze search. Het valt uit op studiedesign.	
Te gebruiken voor richtlijntekst: In de databases Embase.com en Ovid/Medline is op 20-12-2023 systematisch gezocht naar systematische reviews, RCTs en observationele studies over wekedelen procedures vergeleken met een ossale procedures voor patiënten met schouder instabiliteit. De literatuurzoekactie leverde 274 unieke treffers op.	

Zoekopbrengst

	EMBASE	**OVID/MEDLINE**	**Ontdubbeld**
SR	42	36	46
RCT	38	17	44
Observationeel	161	151	185
Totaal	241	204	**275***

****in Rayyan***

Zoekstrategie Embase.com 20-12-2023

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR ('shoulder'/exp AND ('dislocation'/de OR 'recurrent dislocation'/exp OR 'subluxation'/exp OR 'joint dislocation'/exp OR	18193

	'bone erosion'/exp OR 'joint instability'/de)) OR ((('shoulder' OR 'gleno-humeral*' OR 'humer*' OR 'scapulohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*')):ti,ab,kw) OR ('shoulder':ti,ab,kw AND (('bon*' NEAR/3 ('resorption' OR 'loss' OR 'erosion')):ti,ab,kw)) OR 'bankart lesion'/exp OR (('bankart' NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR (('hill-sachs' NEAR/3 'lesion*'):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/6 ('hill sachs' OR 'bone loss' OR 'shoulder' OR 'lesion*')):ti,ab,kw)	
#2	'soft tissue'/exp AND 'procedures'/exp OR 'bankart repair'/exp OR 'putti-platt operation'/exp OR 'slap repair'/exp OR ((('bankart' OR 'putti-platt' OR 'slap' OR 'superior labr* anterior posterior') NEAR/3 ('operation*' OR 'procedure*' OR 'repair*' OR 'surger*' OR 'technique')):ti,ab,kw) OR 'capsulolabral repair':ti,ab,kw OR 'remplissage':ti,ab,kw OR 'soft tissue procedure*':ti,ab,kw	60633
#3	'latarjet procedure'/exp OR 'eden-hybinette procedure'/exp OR 'bone graft'/exp OR 'bone transplantation'/exp OR ((('bon*' OR 'osseous') NEAR/3 ('graft*' OR 'autograft*' OR 'allograft*' OR 'augmentation' OR 'block*' OR 'transplant*')):ti,ab,kw) OR ((('bristow-latarjet' OR 'latarjet' OR 'latarjet-bristow' OR 'eden hybbinette' OR 'hybbinette eden') NEAR/3 ('operation*' OR 'procedure*' OR 'surger*' OR 'technique' OR 'stabilizat*' OR 'repair')):ti,ab,kw)	143704
#4	#1 AND #2 AND #3	561
#5	#4 AND [2003-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	417
#6	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR (((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	987412
#7	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	3939234
#8	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	7991815
#9	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR	14679817

	subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	
#10	#5 AND #6 **– SR's**	42
#11	#5 AND #7 NOT #10 **– RCT's**	38
#12	#5 AND (#8 OR #9) NOT (#10 OR #11) **– Observationele studies**	161
#13	#10 OR #11 OR #12	241

Ovid/Medline 20-12-2023

#	Searches	Results
1	exp Shoulder Dislocation/ or (exp Shoulder Joint/ and exp Joint Instability/) or ((shoulder or gleno-humeral* or humer* or scapulohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat*)).ti,ab,kf. or (shoulder and (bon* adj3 (resorption or loss or erosion or tear))).ti,ab,kf. or (exp Bankart Lesions/ or (bankart adj3 (fracture* or lesion* or tear*)).ti,ab,kf.) or (hill-sachs adj3 lesion*).ti,ab,kf. or ((on track or off track) adj6 (hill sachs or bone loss or shoulder or lesion*)).ti,ab,kf.	13289
2	(((bankart or putti-platt or slap or superior labr* anterior posterior) adj3 (operation* or procedure* or repair* or surger* or technique)) or capsulolabral repair or remplissage or soft tissue procedure*).ti,ab,kf.	2645
3	Bone Transplantation/ or ((bon* or osseous) adj3 (graft* or autograft* or allograft* or augmentation or block* or transplant*)).ti,ab,kf. or ((bristow-latarjet or latarjet or latarjet-bristow or eden hybbinette or hybbinette eden) adj3 (operation* or procedure* or surger* or technique or stabilizat*)).ti,ab,kf.	102551
4	1 and 2 and 3	369
5	limit 4 to yr="2003 -2024"	355
6	5 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	330
7	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	714934
8	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2670491
9	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or	4610598

	interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	
10	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	5583617
11	6 and 7 **– SR's**	36
12	(6 and 8) not 11 **– RCT's**	17
13	(6 and (9 or 10)) not (11 or 12) **– Observationele studies**	151
14	11 or 12 or 13	204

5

Bijlagen Module 5.1 immobilisatie

Table 1 - Risk of bias table for intervention studies (randomized controlled trials; based on Cochrane risk of bias tool and suggestions by the CLARITY Group at McMaster University)

Study reference (first author, publication year)	**Was the allocation sequence adequately generated?**	**Was the allocation adequately concealed?**	**Blinding:** **Was knowledge of the allocated interventions adequately prevented?** **Were patients blinded?** **Were healthcare providers blinded?** **Were data collectors blinded?** **Were outcome assessors blinded?** **Were data analysts blinded?**	**Was loss to follow-up (missing outcome data) infrequent?**	**Are reports of the study free of selective outcome reporting?**	**Was the study apparently free of other problems that could put it at a risk of bias?**	**Overall risk of bias** **If applicable/necessary, per outcome measure**
Kim, 2003	Definitely yes Reason: one of the circulating nurses in the operating room opened a randomly selected envelope that contained 1 of the 2 numbers.	Probably yes Reason: envelopes were used, that were opened by a nurse.	Definitely no Reason: nature of the intervention makes blinding not possible. Outcome assessors were blinded.	Probably yes Reason: 4 patients who did not complete the follow-up were excluded.	Definitely yes Reason: the outcomes stated in the method section were reported.	Probably yes Reason: No other sources of bias could be identified.	**Some concerns, due to (partly) lack of blinding.**

Table 2 – list of excluded studies

Reference	Reason for exclusion
Abdel Khalik H, Lameire DL, Leroux T, Bhandari M, Khan M. Arthroscopic stabilization surgery for first-time anterior shoulder dislocations: a systematic review and meta-analysis. J Shoulder Elbow Surg. 2024 Mar 1:S1058-2746(24)00155-1. doi: 10.1016/j.jse.2024.01.037. Epub ahead of print. PMID: 38430981.	wrong population: managememt of first time anterior shoulder dislocation
Belk JW, Wharton BR, Houck DA, Bravman JT, Kraeutler MJ, Mayer B, Noonan TJ, Seidl AJ, Frank RM, McCarty EC. Shoulder Stabilization Versus Immobilization for First-Time Anterior Shoulder Dislocation: A Systematic Review and Meta-analysis of Level 1 Randomized Controlled Trials. Am J Sports Med. 2023 May;51(6):1634-1643. doi: 10.1177/03635465211065403. Epub 2022 Feb 11. PMID: 35148222.	Wrong comparison: surgical stabilization versus sling immoblization
Coyle M, Jaggi A, Weatherburn L, Daniell H, Chester R. Post-operative rehabilitation following traumatic anterior shoulder dislocation: A systematic scoping review. Shoulder Elbow. 2023 Oct;15(5):554-565. doi: 10.1177/17585732221089636. Epub 2022 Mar 31. PMID: 37811389; PMCID: PMC10557935.	Wrong study design: scoping review
Dickens JF, Rue JP, Cameron KL, Tokish JM, Peck KY, Allred CD, Svoboda SJ, Sullivan R, Kilcoyne KG, Owens BD. Successful Return to Sport After Arthroscopic Shoulder Stabilization Versus Nonoperative Management in Contact Athletes With Anterior Shoulder Instability: A Prospective Multicenter Study. Am J Sports Med. 2017 Sep;45(11):2540-2546. doi: 10.1177/0363546517712505. Epub 2017 Jun 28. PMID: 28657778.	wrong study design: observational study
Goetti P, Martinho T, Seurot A, Bothorel H, Lädermann A. Is sling immobilization necessary after open Latarjet surgery for anterior shoulder instability? A randomized control trial. Trials. 2023 Feb 27;24(1):148. doi: 10.1186/s13063-023-07180-9. PMID: 36850012; PMCID: PMC9969622.	wrong study design: study protocol
Gutkowska O, Martynkiewicz J, Gosk J. Position of Immobilization After First-Time Traumatic Anterior Glenohumeral Dislocation: A Literature Review. Med Sci Monit. 2017 Jul 15;23:3437-3445. doi: 10.12659/msm.901876. PMID: 28710344; PMCID: PMC5523960.	wrong design: narrative review of cadaveric studies, imaging studies, clinical studies and meta-analyses
Hagen MS, Allahabadi S, Zhang AL, Feeley BT, Grace T, Ma CB. A randomized single-blinded trial of early rehabilitation versus immobilization after reverse total shoulder arthroplasty. J Shoulder Elbow Surg. 2020 Mar;29(3):442-450. doi: 10.1016/j.jse.2019.10.005. Epub 2020 Jan 7. PMID: 31924519.	Wrong population
Hasebroock AW, Brinkman J, Foster L, Bowens JP. Management of primary anterior shoulder dislocations: a narrative review. Sports Med Open. 2019 Jul 11;5(1):31. doi: 10.1186/s40798-019-0203-2. PMID: 31297678; PMCID: PMC6624218.	wrong design and population: narrative review management of primary dislocation
Kim K, Saper MG. Postoperative Management Following Arthroscopic Bankart Repair in Adolescents and Young Adults: A Systematic Review. Arthrosc Sports Med Rehabil. 2020 Dec 15;2(6):e839-e845. doi: 10.1016/j.asmr.2020.05.016. PMID: 33364615; PMCID: PMC7754521.	Systematic review of observational studies
Lloyd G, Day J, Lu J, Lincoln A, Attanasio S, Svoboda S. Postoperative Rehabilitation of Anterior Glenohumeral Joint Instability Surgery: A Systematic Review. Sports Med Arthrosc Rev. 2021 Jun 1;29(2):54-62. doi: 10.1097/JSA.0000000000000305. PMID: 33972482.	wrong comparison: surgical management versus non-surgical management / supervised rehabiliatation versus rehabilitation at home. 1 Relevant RCT included
Minkus M, Wolke J, Akgün D, Scheibel M. Mid- to long-term results of postoperative immobilization in internal vs. external rotation after arthroscopic anterior shoulder stabilization. JSES Int. 2021 Sep 3;5(6):960-966. doi: 10.1016/j.jseint.2021.07.004. PMID: 34766070; PMCID: PMC8568811.	wrong study design: observational study
Paterson WH, Throckmorton TW, Koester M, Azar FM, Kuhn JE. Position and duration of immobilization after primary anterior shoulder dislocation: a systematic review and meta-analysis of the literature. J Bone Joint Surg Am. 2010 Dec 15;92(18):2924-33. doi: 10.2106/JBJS.J.00631. PMID: 21159993.	wrong population: immobilization of primary anterior shoulder dislocation

Rahu, Ma,. Traumaatiline õlaliigese eesmine nihestus (traumatic anterior shoulder dislocation). Eesti Arst, 2012.	wrong design: narrative review - full text not available
Yin B, Levy D, Meadows M, Moen T, Gorroochurn P, Cadet ER, Levine WN, Ahmad CS. How does external rotation bracing influence motion and functional scores after arthroscopic shoulder stabilization? Clin Orthop Relat Res. 2014 Aug;472(8):2389-96. doi: 10.1007/s11999-013-3343-6. PMID: 24158541; PMCID: PMC4079886.	wrong study design: observational study

Zoekverantwoording

Cluster/richtlijn: Cluster bovenste extremiteiten - Richtlijn Schouderinstabiliteit – UV5.1 Immobilisatie	
Overkoepelende uitgangsvraag: Wat is de optimale nabehandeling bij een benige of wekedelen schouderstabilisatie? Subvraag: Wat is de optimale nabehandeling bij een operatieve ingreep om stabilisatie van de schouder te herstellen?	
Database(s): Embase.com, Ovid/Medline	Datum: 6 mei 2024
Periode: vanaf 2010	Talen: geen restrictie
Literatuurspecialist: Esther van der Bijl	Rayyan review: https://rayyan.ai/reviews/1022906
BMI-zoekblokken: voor verschillende opdrachten wordt (deels) gebruik gemaakt van de zoekblokken van BMI-Online https://blocks.bmi-online.nl/ Bij gebruikmaking van een volledig zoekblok zal naar de betreffende link op de website worden verwezen.	
Toelichting: Voor deze vraag is gezocht op de elementen (schouderinstabiliteit OF ossale schouderstabilisatie OF wekedelen schouderstabilisatie) EN immobilisatie. ▯ Het sleutelartikel valt uit op studiedesign.	

	EMBASE	OVID/MEDLINE	Ontdubbeld
SR	44	30	48
RCT	54	26	61
Totaal	98	56	**109***

in Rayyan

Zoekstrategie Embase.com 6 mei 2024

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR 'bankart lesion'/exp OR ('shoulder'/exp AND ('dislocation'/de OR 'recurrent dislocation'/exp OR 'subluxation'/exp OR 'joint dislocation'/exp OR 'joint instability'/de)) OR ((('shoulder*' OR 'gleno-humer*' OR 'glenoid*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*' OR 'defect*')):ti,ab,kw) OR ((('shoulder*' OR glenoid* OR 'gleno-humer*' OR 'humer*' OR 'scapulohumer*' OR 'glenohumer*') NEAR/6 'bon*' NEAR/3 ('loss*' OR 'erosion*')):ti,ab,kw) OR ((('bankart' OR 'hill-sachs') NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/3 ('hill sachs' OR 'bone loss*' OR 'shoulder*' OR 'lesion*')):ti,ab,kw) OR ((shoulder* NEAR/3 'soft tissue procedure*'):ti,ab,kw)	19001
#2	'latarjet procedure'/exp OR 'eden-hybinette procedure'/exp OR 'bankart repair'/exp OR 'putti-platt operation'/exp OR 'slap repair'/exp OR ((shoulder* NEAR/3 ('bon*' OR 'osseous') NEAR/3 ('graft*' OR 'autograft*' OR 'allograft*' OR 'augmentation' OR 'block*' OR 'transplant*')):ti,ab,kw) OR ((('bristow-latarjet' OR 'latarjet' OR 'latarjet-bristow' OR 'eden hybbinette' OR 'hybbinette eden') NEAR/3 ('operat*' OR 'procedure*' OR 'surger*' OR 'technique*' OR 'stabilizat*' OR 'repair*')):ti,ab,kw) OR ((('bankart' OR 'putti-platt' OR 'slap' OR 'superior labr* anterior posterior') NEAR/3 ('operat*' OR 'procedure*' OR 'repair*' OR 'surger*' OR 'technique*' OR 'stabilizat*')):ti,ab,kw) OR 'capsulolabral repair*':ti,ab,kw OR 'remplissage':ti,ab,kw	3599
#3	((shoulder* NEAR/7 stabilisat* NEAR/7 surger*):ti,ab,kw) OR ((shoulder* NEAR/7 instabilit* NEAR/7 surger*):ti,ab,kw)	515
#4	#1 OR #2 OR #3	19703
#5	'immobilization'/exp OR 'mobilization'/exp OR 'immobility'/exp OR 'immobilis*':ti,ab,kw OR 'immobiliz*':ti,ab,kw OR mobilis*:ti,ab,kw OR mobiliz*:ti,ab,kw	347475
#6	#4 AND #5	1008
#7	#6 AND [2010-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	399
#8	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR	1024732

	(((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid) NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	
#9	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	4022927
#10	#7 AND #8 **– SR's**	44
#11	#7 AND #9 NOT #10 **– RCT's**	54
#12	#10 OR #11	98

Zoekstrategie Ovid/Medline 6 mei 2024

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or (exp Shoulder Joint/ and exp Joint Instability/) or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) adj6 bon* adj3 (loss* or erosion*)).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf. or (shoulder* adj3 soft tissue procedure*).ti,ab,kf.	14013
2	((shoulder* adj3 (bon* or osseous) adj3 (graft* or autograft* or allograft* or augmentation or block* or transplant*)) or ((bristow-latarjet or latarjet or latarjet-bristow or eden hybbinette or hybbinette eden) adj3 (operat* or procedure* or surger* or technique* or stabilizat* or repair*)) or ((bankart or putti-platt or slap or superior labr* anterior posterior) adj3 (operat* or procedure* or repair* or surger* or technique*)) or capsulolabral repair* or remplissage).ti,ab,kf.	2819
3	((shoulder* adj7 stabilisat* adj7 surger*) or (shoulder* adj7 instabilit* adj7 surger*)).ti,ab,kf.	407
4	1 or 2 or 3	14565
5	exp Immobilization/ or immobilis*.ti,ab,kf. or immobiliz*.ti,ab,kf. or mobilis*.ti,ab,kf. or mobiliz*.ti,ab,kf.	249050
6	4 and 5	602
7	limit 6 to yr="2010 -Current"	269
8	7 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	254
9	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	743814
10	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	2721598
11	8 and 9 **– SR's**	30
12	(8 and 10) not 11 **– RCT's**	26
13	11 or 12	56

Bijlagen module 5.2 terugkeer naar functie en sport

Table 1 - Risk of bias table for intervention studies (randomized controlled trials; based on Cochrane risk of bias tool and suggestions by the CLARITY Group at McMaster University)

Study reference	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: Was knowledge of the allocated interventions adequately prevented? Were patients blinded? Were healthcare providers blinded? Were data collectors blinded? Were outcome assessors blinded? Were data analysts blinded?	Was loss to follow-up (missing outcome data) infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at a risk of bias?	Overall risk of bias
Multanen, 2020	Definitely yes Reason: Authors used computer-generated randomization.	Definitely yes Reason: Allocation was concealed using sealed opaque envelopes with the randomization list as generated by an independent research assistant.	Definitely no Reason: Blinding of outcomes assessor and research assistant, not of participants and physiotherapists.	Probably no Reason: 4 and 3 were lost to follow-up.	Definitely yes Reason: The study was performed according to trial registration.	Probably yes Reason: The funder had no role in any part of the study, no conflict of interests.	Some concerns Reason: No blinding and subjective outcome measures.
Yildiz, 2024	Probably no Reason: No information provided.	Probably no Reason: No information provided.	Definitely no Reason: Blinding of outcomes assessor, not of participants.	Probably no Reason: 2 and 2 were lost to follow-up.	Probably yes Reason: All outcomes mentioned in the Methods section are reported.	Probably yes Reason: No conflict of interest, no funding source reported, small sample size.	High risk of bias Reason: Unclear randomization, no blinding.

Table 2 - list of excluded studies

Reference	Reason for exclusion
Ager AL, Borms D, Bernaert M, Brusselle V, Claessens M, Roy JS, Cools A. Can a Conservative Rehabilitation Strategy Improve Shoulder Proprioception? A Systematic Review. J Sport Rehabil. 2020 Jul 31;30(1):136-151. doi: 10.1123/jsr.2019-0400. PMID: 32736342.	Wrong population, wrong outcome
Ciccotti MC, Syed U, Hoffman R, Abboud JA, Ciccotti MG, Freedman KB. Return to Play Criteria Following Surgical Stabilization for Traumatic Anterior Shoulder Instability: A Systematic Review. Arthroscopy. 2018 Mar;34(3):903-913. doi: 10.1016/j.arthro.2017.08.293. Epub 2017 Nov 13. PMID: 29146162.	No comparison, wrong outcome.
Coyle M, Jaggi A, Weatherburn L, Daniell H, Chester R. Post-operative rehabilitation following traumatic anterior shoulder dislocation: A systematic scoping review. Shoulder Elbow. 2023 Oct;15(5):554-565. doi: 10.1177/17585732221089636. Epub 2022 Mar 31. PMID: 37811389; PMCID: PMC10557935.	No comparison, wrong design.
Crowell MS, Brindle RA, Mason JS, Pitt W, Miller EM, Posner MA, Cameron KL, Goss DL. The effectiveness of battlefield acupuncture in addition to standard physical therapy treatment after shoulder surgery: a protocol for a randomized clinical trial. Trials. 2020 Dec 3;21(1):995. doi: 10.1186/s13063-020-04909-8. PMID: 33272311; PMCID: PMC7713004.	wrong design: study protocol.
Damkjær L, Petersen T, Juul-Kristensen B. Is the American Society of Shoulder and Elbow Therapists' rehabilitation guideline better than standard care when applied to Bankart-operated patients? A controlled study. Clin Rehabil. 2015 Feb;29(2):154-64. doi: 10.1177/0269215514539819. Epub 2014 Jul 3. PMID: 24994769.	Wrong design.
Edouard P, Beguin L, Degache F, Fayolle-Minon I, Farizon F, Calmels P. Recovery of rotators strength after Latarjet surgery. Int J Sports Med. 2012 Sep;33(9):749-55. doi: 10.1055/s-0031-1298001. Epub 2012 May 16. PMID: 22592549.	Wrong comparison.
Edouard P, Beguin L, Fayolle-Minon I, Degache F, Farizon F, Calmels P. Relationship between strength and functional indexes (Rowe and Walch-Duplay scores) after shoulder surgical stabilization by the Latarjet technique. Ann Phys Rehabil Med. 2010 Oct;53(8):499-510. doi: 10.1016/j.rehab.2010.07.033. Epub 2010 Aug 27. PMID: 20832383.	No comparison.
Eren İ, Canbulat N, Atalar AC, Eren ŞM, Uçak A, Çerezci Ö, Demirhan M. A Clinical Comparison of Home-Based and Hospital-Based Exercise Programs Following Arthroscopic Capsulolabral Repair for Anterior Shoulder Instability. J Sport Rehabil. 2019 Oct 18;29(6):777-782. doi: 10.1123/jsr.2019-0114. PMID: 31629337.	Wrong intervention, wrong comparison and wrong design.
Griffith R, Fretes N, Bolia IK, Murray IR, Meyer J, Weber AE, Gamradt SC, Petrigliano FA. Return-to-Sport Criteria After Upper Extremity Surgery in Athletes-A Scoping Review, Part 1: Rotator Cuff and Shoulder Stabilization Procedures. Orthop J Sports Med. 2021 Aug 6;9(8):23259671211021827. doi: 10.1177/23259671211021827. PMID: 34395687; PMCID: PMC8358521.	Wrong design: review, not systematic.
Halle R, Crowell M, Goss D. DRY NEEDLING AND PHYSICAL THERAPY VERSUS PHYSICAL THERAPY ALONE FOLLOWING SHOULDER STABILIZATION REPAIR: A RANDOMIZED	Wrong population, wrong intervention.

CLINICAL TRIAL. Int J Sports Phys Ther. 2020 Feb;15(1):81-102. PMID: 32089961; PMCID: PMC7015024.	
Ismail MM, El Shorbagy KM. Motions and functional performance after supervised physical therapy program versus home-based program after arthroscopic anterior shoulder stabilization: a randomized clinical trial. Ann Phys Rehabil Med. 2014 Aug-Sep;57(6-7):353-72. doi: 10.1016/j.rehab.2014.06.002. Epub 2014 Jun 24. PMID: 25164471.	Wrong population.
Kasik CS, Rosen MR, Saper MG, Zondervan RL. High rate of return to sport in adolescent athletes following anterior shoulder stabilisation: a systematic review. J ISAKOS. 2019 Jan;4(1):33-40. doi: 10.1136/jisakos-2018-000224. Epub 2018 Nov 10. PMID: 31044093; PMCID: PMC6487304.	No comparison.
Kholinne E, Mitchel, Gani KS, Utami SW, Pratiwi SR. Return to sports following arthroscopic Bankart repair: a narrative review. Ewha Med J 47(2). 2024 Apr. doi: 10.12771/emj.2024.e21	Wrong design: narrative review.
Kim SH, Ha KI, Jung MW, Lim MS, Kim YM, Park JH. Accelerated rehabilitation after arthroscopic Bankart repair for selected cases: a prospective randomized clinical study. Arthroscopy. 2003 Sep;19(7):722-31. doi: 10.1016/s0749-8063(03)00397-9. PMID: 12966380.	Wrong intervention
Kim K, Saper MG. Postoperative Management Following Arthroscopic Bankart Repair in Adolescents and Young Adults: A Systematic Review. Arthrosc Sports Med Rehabil. 2020 Dec 15;2(6):e839-e845. doi: 10.1016/j.asmr.2020.05.016. PMID: 33364615; PMCID: PMC7754521.	No comparison.
Lloyd G, Day J, Lu J, Lincoln A, Attanasio S, Svoboda S. Postoperative Rehabilitation of Anterior Glenohumeral Joint Instability Surgery: A Systematic Review. Sports Med Arthrosc Rev. 2021 Jun 1;29(2):54-62. doi: 10.1097/JSA.0000000000000305. PMID: 33972482.	No comparison, no data.
Martinez-Rico S, Lizaur-Utrilla A, Sebastia-Forcada E, Vizcaya-Moreno MF, de Juan-Herrero J. The Impact of a Phone Assistance Nursing Program on Adherence to Home Exercises and Final Outcomes in Patients Who Underwent Shoulder Instability Surgery: A Randomized Controlled Study. Orthop Nurs. 2018 Nov/Dec;37(6):372-378. doi: 10.1097/NOR.0000000000000501. PMID: 30451774.	Wrong population, wrong intervention.
Nimse A, Patel N, Pardiwala D. Criterion-Based Rehabilitation and Return to Play in Fast Bowlers Following Arthroscopic Bankart Repair: Recommendations Based on a Detailed Clinical Review. Indian J Orthop. 2023 Jun 23;57(10):1565-1574. doi: 10.1007/s43465-023-00931-5. PMID: 37766945; PMCID: PMC10519911.	Wrong design: narrative review.
Yildiz TI, Turhan E, Ocguder DA, Yaman F, Huri G, Duzgun I. Functional Performance Tests Reveal Promising Results at 6 Months After Shoulder Stabilization Surgery. Sports Health. 2023 Nov-Dec;15(6):878-885. doi: 10.1177/19417381221141075. Epub 2022 Dec 20. PMID: 36539969; PMCID: PMC10606971.	Wrong comparison (pre- and postoperative)
Zheng Y, Wang H, Wang H, Xu J, Chen P. The efficacy of a phone assistance nursing program for functional outcomes in patients after shoulder instability surgery: A protocol for randomized controlled trial. Medicine (Baltimore). 2020 Oct 23;99(43):e22756. doi: 10.1097/MD.0000000000022756. PMID: 33120779; PMCID: PMC7581063.	wrong design: study protocol

Zoekverantwoording

Zoekstrategie Embase.com 26 augustus 2024

No.	Query	Results
#1	'shoulder dislocation'/exp OR 'recurrent shoulder dislocation'/exp OR ('shoulder'/exp AND ('dislocation'/de OR 'recurrent dislocation'/exp OR 'subluxation'/exp OR 'joint dislocation'/exp OR 'bone erosion'/exp OR 'joint instability'/de)) OR ((('shoulder*' OR 'gleno-humeral*' OR 'humer*' OR 'scapulohumer*') NEAR/3 ('dislocat*' OR 'diastasis' OR 'instabil*' OR 'luxat*' OR 'subluxat*')):ti,ab,kw) OR ('shoulder*':ti,ab,kw AND (('bon*' NEAR/3 ('resorption' OR 'loss' OR 'erosion*')):ti,ab,kw)) OR 'bankart lesion'/exp OR (('bankart' NEAR/3 ('fracture*' OR 'lesion*' OR 'tear*')):ti,ab,kw) OR (('hill-sachs' NEAR/3 'lesion*'):ti,ab,kw) OR ((('on track' OR 'off track') NEAR/6 ('hill sachs' OR 'bone loss' OR 'shoulder*' OR 'lesion*')):ti,ab,kw)	19245
#2	'physiotherapy'/exp OR 'kinesiotherapy'/exp OR 'occupational therapy'/exp OR 'exercise'/exp OR 'proprioception'/exp OR 'proprioceptive exercise'/exp OR 'rehabilitation'/exp OR 'neuromuscular exercise'/exp OR 'motor control exercise'/exp OR 'apprehension'/exp OR (((kinaesthetic OR kinesio* OR kinesthetic OR kinetic* OR 'rotator cuff') NEAR/3 (discrimination* OR perception* OR perceptual)):ti,ab,kw) OR (((neuromuscular OR resistance OR strength OR 'motor control' OR coordination OR stability) NEAR/3 (exercise* OR training*)):ti,ab,kw) OR 'proprioception*':ti,ab,kw OR physiotherap*:ti,ab,kw OR 'physio therap*':ti,ab,kw OR 'physical therap*':ti,ab,kw OR kinesiotherap*:ti,ab,kw OR kinesitherapeutic*:ti,ab,kw OR 'occupation* therap*':ti,ab,kw OR ergotherap*:ti,ab,kw OR rehabilit*:ti,ab,kw OR revalidat*:ti,ab,kw OR 'kinetic chain*':ti,ab,kw OR propriocepsis:ti,ab,kw OR proprioceptive*:ti,ab,kw OR 'apprehension':ti,ab,kw OR 'postoperative management':ti,ab,kw	1303348
#3	#1 AND #2	3595
#4	#3 AND [2000-2024]/py NOT ('conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'note'/it) NOT (('animal'/exp OR 'animal experiment'/exp OR 'animal model'/exp OR 'nonhuman'/exp) NOT 'human'/exp)	2640
#5	'meta analysis'/exp OR 'meta analysis (topic)'/exp OR metaanaly*:ti,ab OR 'meta analy*':ti,ab OR metanaly*:ti,ab OR 'systematic review'/de OR 'cochrane database of systematic reviews'/jt OR prisma:ti,ab OR prospero:ti,ab OR (((systemati* OR scoping OR umbrella OR 'structured literature') NEAR/3 (review* OR overview*)):ti,ab) OR ((systemic* NEAR/1 review*):ti,ab) OR (((systemati* OR literature OR database* OR 'data base*') NEAR/10 search*):ti,ab) OR (((structured OR comprehensive* OR systemic*) NEAR/3 search*):ti,ab) OR (((literature NEAR/3 review*):ti,ab) AND (search*:ti,ab OR database*:ti,ab OR 'data base*':ti,ab)) OR (('data extraction':ti,ab OR 'data source*':ti,ab) AND 'study selection':ti,ab) OR ('search strategy':ti,ab AND 'selection criteria':ti,ab) OR ('data source*':ti,ab AND 'data synthesis':ti,ab) OR medline:ab OR pubmed:ab OR embase:ab OR cochrane:ab OR (((critical OR rapid)	1056009

	NEAR/2 (review* OR overview* OR synthes*)):ti) OR ((((critical* OR rapid*) NEAR/3 (review* OR overview* OR synthes*)):ab) AND (search*:ab OR database*:ab OR 'data base*':ab)) OR metasynthes*:ti,ab OR 'meta synthes*':ti,ab	
#6	'clinical trial'/exp OR 'randomization'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'placebo'/exp OR 'prospective study'/exp OR rct:ab,ti OR random*:ab,ti OR 'single blind':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled trial'/exp OR placebo*:ab,ti	4094350
#7	'major clinical study'/de OR 'clinical study'/de OR 'case control study'/de OR 'family study'/de OR 'longitudinal study'/de OR 'retrospective study'/de OR 'prospective study'/de OR 'comparative study'/de OR 'cohort analysis'/de OR ((cohort NEAR/1 (study OR studies)):ab,ti) OR (('case control' NEAR/1 (study OR studies)):ab,ti) OR (('follow up' NEAR/1 (study OR studies)):ab,ti) OR (observational NEAR/1 (study OR studies)) OR ((epidemiologic NEAR/1 (study OR studies)):ab,ti) OR (('cross sectional' NEAR/1 (study OR studies)):ab,ti)	8376239
#8	'case control study'/de OR 'comparative study'/exp OR 'control group'/de OR 'controlled study'/de OR 'controlled clinical trial'/de OR 'crossover procedure'/de OR 'double blind procedure'/de OR 'phase 2 clinical trial'/de OR 'phase 3 clinical trial'/de OR 'phase 4 clinical trial'/de OR 'pretest posttest design'/de OR 'pretest posttest control group design'/de OR 'quasi experimental study'/de OR 'single blind procedure'/de OR 'triple blind procedure'/de OR (((control OR controlled) NEAR/6 trial):ti,ab,kw) OR (((control OR controlled) NEAR/6 (study OR studies)):ti,ab,kw) OR (((control OR controlled) NEAR/1 active):ti,ab,kw) OR 'open label*':ti,ab,kw OR (((double OR two OR three OR multi OR trial) NEAR/1 (arm OR arms)):ti,ab,kw) OR ((allocat* NEAR/10 (arm OR arms)):ti,ab,kw) OR placebo*:ti,ab,kw OR 'sham-control*':ti,ab,kw OR (((single OR double OR triple OR assessor) NEAR/1 (blind* OR masked)):ti,ab,kw) OR nonrandom*:ti,ab,kw OR 'non-random*':ti,ab,kw OR 'quasi-experiment*':ti,ab,kw OR crossover:ti,ab,kw OR 'cross over':ti,ab,kw OR 'parallel group*':ti,ab,kw OR 'factorial trial':ti,ab,kw OR ((phase NEAR/5 (study OR trial)):ti,ab,kw) OR ((case* NEAR/6 (matched OR control*)):ti,ab,kw) OR ((match* NEAR/6 (pair OR pairs OR cohort* OR control* OR group* OR healthy OR age OR sex OR gender OR patient* OR subject* OR participant*)):ti,ab,kw) OR ((propensity NEAR/6 (scor* OR match*)):ti,ab,kw) OR versus:ti OR vs:ti OR compar*:ti OR ((compar* NEAR/1 study):ti,ab,kw) OR (('major clinical study'/de OR 'clinical study'/de OR 'cohort analysis'/de OR 'observational study'/de OR 'cross-sectional study'/de OR 'multicenter study'/de OR 'correlational study'/de OR 'follow up'/de OR cohort*:ti,ab,kw OR 'follow up':ti,ab,kw OR followup:ti,ab,kw OR longitudinal*:ti,ab,kw OR prospective*:ti,ab,kw OR retrospective*:ti,ab,kw OR observational*:ti,ab,kw OR 'cross sectional*':ti,ab,kw OR cross?ectional*:ti,ab,kw OR multicent*:ti,ab,kw OR 'multi-cent*':ti,ab,kw OR consecutive*:ti,ab,kw) AND (group:ti,ab,kw OR groups:ti,ab,kw OR	15339755

	subgroup*:ti,ab,kw OR versus:ti,ab,kw OR vs:ti,ab,kw OR compar*:ti,ab,kw OR 'odds ratio*':ab OR 'relative odds':ab OR 'risk ratio*':ab OR 'relative risk*':ab OR 'rate ratio':ab OR aor:ab OR arr:ab OR rrr:ab OR ((('or' OR 'rr') NEAR/6 ci):ab)))	
#9	#4 AND #5 - SR	159
#10	#4 AND #6 NOT #9 - RCT	377
#11	*#4 AND (#7 OR #8) NOT (#9 OR #10) - Observationeel*	*827*
#12	#9 OR #10 OR #11 - Totaal	536

Zoekstrategie Ovid/Medline 26 augustus 2024

#	Searches	Results
1	exp Shoulder Dislocation/ or exp Bankart Lesions/ or ((shoulder* or gleno-humer* or glenoid* or humer* or scapulohumer* or glenohumer*) adj3 (dislocat* or diastasis or instabil* or luxat* or subluxat* or defect*)).ti,ab,kf. or ((shoulder* or glenoid* or gleno-humer* or humer* or scapulohumer* or glenohumer*) and (bon* adj3 (loss* or erosion*))).ti,ab,kf. or ((bankart or hill-sachs) adj3 (fracture* or lesion* or tear*)).ti,ab,kf. or ((on track or off track) adj3 (hill sachs or bone loss* or shoulder* or lesion*)).ti,ab,kf.	14152
2	exp Conservative Treatment/ or exp Physical Therapy Modalities/ or exp Occupational Therapy/ or exp Exercise/ or exp Exercise Therapy/ or exp Rehabilitation/ or ((kinaesthetic or kinesio* or kinesthetic or kinetic* or rotator cuff) adj3 (discrimination* or perception* or perceptual)).ti,ab,kf. or ((neuromuscular or resistance or strength or motor control or coordination or stability) adj3 (exercise* or training*)).ti,ab,kf. or proprioception*.ti,ab,kf. or physiotherap*.ti,ab,kf. or physio therap*.ti,ab,kf. or physical therap*.ti,ab,kf. or kinesiotherap*.ti,ab,kf. or kinesitherapeutic*.ti,ab,kf. or occupation* therap*.ti,ab,kf. or ergotherap*.ti,ab,kf. or rehabilit*.ti,ab,kf. or revalidat*.ti,ab,kf. or kinetic chain*.ti,ab,kf. or propriocepsis.ti,ab,kf. or proprioceptive*.ti,ab,kf. or apprehension.ti,ab,kf. or postoperative management.ti,ab,kf.	831252
3	1 and 2	2172
4	limit 3 to yr="2000 -Current"	1662
5	4 not (comment/ or editorial/ or letter/) not ((exp animals/ or exp models, animal/) not humans/)	1606
6	meta-analysis/ or meta-analysis as topic/ or (metaanaly* or meta-analy* or metanaly*).ti,ab,kf. or systematic review/ or cochrane.jw. or (prisma or prospero).ti,ab,kf. or ((systemati* or scoping or umbrella or "structured literature") adj3 (review* or overview*)).ti,ab,kf. or (systemic* adj1 review*).ti,ab,kf. or ((systemati* or literature or database* or data-base*) adj10 search*).ti,ab,kf. or ((structured or comprehensive* or systemic*) adj3 search*).ti,ab,kf. or ((literature adj3 review*) and (search* or database* or data-base*)).ti,ab,kf. or (("data extraction" or "data source*") and "study selection").ti,ab,kf. or ("search strategy" and "selection criteria").ti,ab,kf. or ("data source*" and "data synthesis").ti,ab,kf. or (medline or pubmed or embase or cochrane).ab. or ((critical or rapid) adj2 (review* or overview* or synthes*)).ti. or (((critical* or rapid*) adj3 (review* or overview* or synthes*)) and (search* or database* or data-base*)).ab. or (metasynthes* or meta-synthes*).ti,ab,kf.	769650
7	exp clinical trial/ or randomized controlled trial/ or exp clinical trials as topic/ or randomized controlled trials as topic/ or Random Allocation/ or Double-Blind Method/ or Single-Blind Method/ or (clinical trial, phase i or clinical trial, phase ii	2768340

	or clinical trial, phase iii or clinical trial, phase iv or controlled clinical trial or randomized controlled trial or multicenter study or clinical trial).pt. or random*.ti,ab. or (clinic* adj trial*).tw. or ((singl* or doubl* or treb* or tripl*) adj (blind$3 or mask$3)).tw. or Placebos/ or placebo*.tw.	
8	Epidemiologic studies/ or case control studies/ or exp cohort studies/ or Controlled Before-After Studies/ or Case control.tw. or cohort.tw. or Cohort analy$.tw. or (Follow up adj (study or studies)).tw. or (observational adj (study or studies)).tw. or Longitudinal.tw. or Retrospective*.tw. or prospective*.tw. or consecutive*.tw. or Cross sectional.tw. or Cross-sectional studies/ or historically controlled study/ or interrupted time series analysis/ [Onder exp cohort studies vallen ook longitudinale, prospectieve en retrospectieve studies]	4809539
9	Case-control Studies/ or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or comparative study/ or control groups/ or controlled before-after studies/ or controlled clinical trial/ or double-blind method/ or historically controlled study/ or matched-pair analysis/ or single-blind method/ or (((control or controlled) adj6 (study or studies or trial)) or (compar* adj (study or studies)) or ((control or controlled) adj1 active) or "open label*" or ((double or two or three or multi or trial) adj (arm or arms)) or (allocat* adj10 (arm or arms)) or placebo* or "sham-control*" or ((single or double or triple or assessor) adj1 (blind* or masked)) or nonrandom* or "non-random*" or "quasi-experiment*" or "parallel group*" or "factorial trial" or "pretest posttest" or (phase adj5 (study or trial)) or (case* adj6 (matched or control*)) or (match* adj6 (pair or pairs or cohort* or control* or group* or healthy or age or sex or gender or patient* or subject* or participant*)) or (propensity adj6 (scor* or match*))).ti,ab,kf. or (confounding adj6 adjust*).ti,ab. or (versus or vs or compar*).ti. or ((exp cohort studies/ or epidemiologic studies/ or multicenter study/ or observational study/ or seroepidemiologic studies/ or (cohort* or 'follow up' or followup or longitudinal* or prospective* or retrospective* or observational* or multicent* or 'multi-cent*' or consecutive*).ti,ab,kf.) and ((group or groups or subgroup* or versus or vs or compar*).ti,ab,kf. or ('odds ratio*' or 'relative odds' or 'risk ratio*' or 'relative risk*' or aor or arr or rrr).ab. or (("OR" or "RR") adj6 CI).ab.))	5768007
10	5 and 6 - SR	128
11	(5 and 7) not 10 - RCT	230
12	*(5 and (8 or 9)) not (10 or 11) - Observationeel*	*578*
13	10 or 11 or 12 - Totaal	358