RAPID RESEARCH

@physicaltherapyresearch

October 2022

Inside This Week:

Testing Accuracy for Upper Limb Injuries

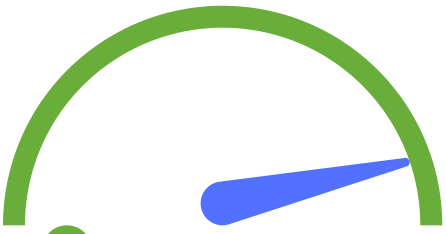
- Accuracy of Clinical Tests for Elbow Fracture
- Accuracy of Clinical Tests for Long Head Biceps Pathology
- Accuracy of Active Compression Test for SLAP Tears

ACCURACY OF CLINICAL TESTS FOR ELBOW FRACTURE

OCTOBER 2022

Click for Full Text (Breda et al. 2022)

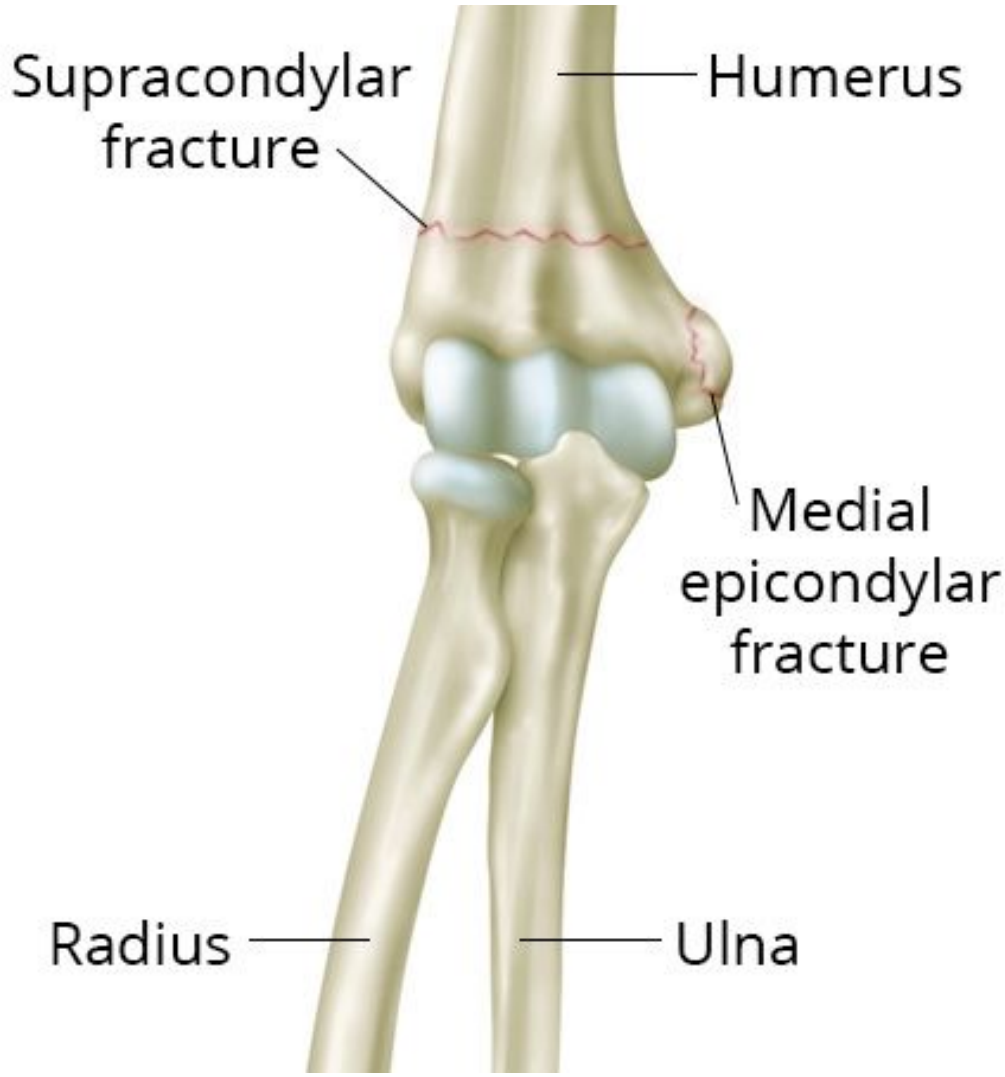
JBI 10/11 [90%]



Quality Check

*see appx

This systematic review analyzed the literature considering the diagnostic accuracy of recently proposed clinical tests for the detection or exclusion of suspected elbow fractures.



KEY FINDINGS

12 studies included, totaling 4,485 participants.
5 compared ROM vs. X-ray
4 compared Elbow Extension vs. X-ray
3 Studies compared cluster (ROM + point tenderness) vs. X-ray

ROM (1,050 total patients)**:**
Sensitivity: ~100%
Specificity: 88%–97%

Elbow Extension Test (654 patients with fracture, 2,024 total)**:**
Sensitivity: > 90% with a maximum value of 97.3%
Specificity: 48.5%–69.4%

Cluster (1,411 total patients)**:**
Sensitivity: >97%
Specificity: 24%

MAIN TAKEAWAYS

Considering the results of the studies with the lowest number of biases, the elbow mobility tests appear to be useful, in case of a negative test, **to rule out an elbow fracture.**

The specificity of all the index tests proposed at the moment does not allow us to draw useful conclusions.

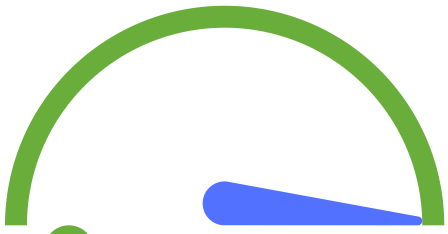
Further studies are needed to investigate more deeply the diagnostic accuracy of these clinical tests and to confirm the results of this review.

OCTOBER 2022

ACCURACY OF CLINICAL TESTS FOR LONG HEAD BICEPS PATHOLOGY

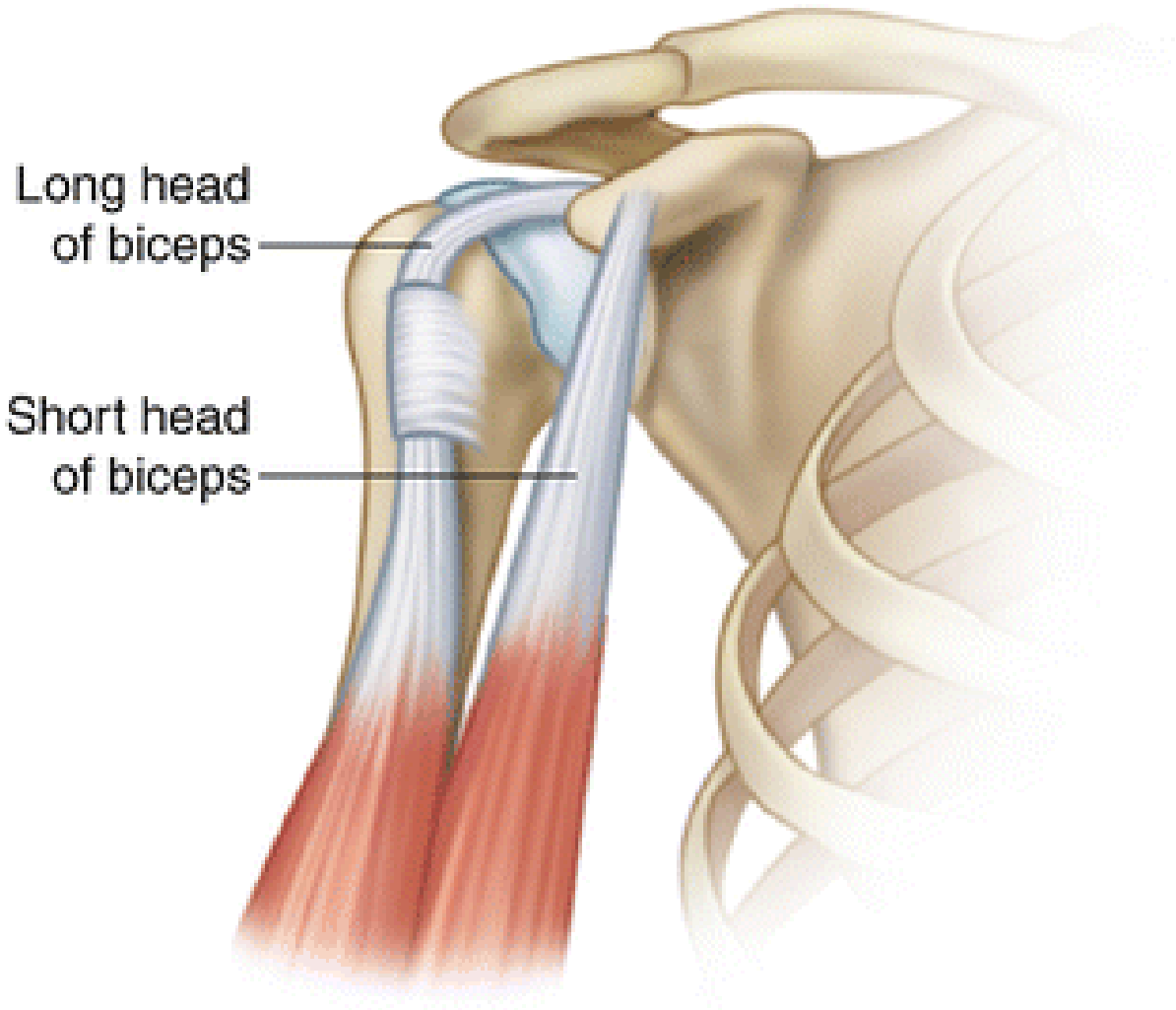
Click for Full Text (Rosas et al. 2017)

JBI 11/11 [100%]



Quality Check
*see appx

This systematic review provided clinicians a practical, evidence-based clinical (PEC) physical examination algorithm to accurately diagnose patients with LHB pathology



KEY FINDINGS

7 studies included.

Highest Sensitivities of Special Tests:
Bear hug: 79%
Uppercut: 73%

Highest Specificities of Special Tests:
Belly press: 85%
O'Brien's: 84%

Uppercut test + Tenderness of the LHB test provided the highest accuracy:
Sensitivity: 88.3%
Specificity: 93.3%

Diagnostic ultrasound imaging:
Sensitivity: 88%
Specificity: 98%

MAIN TAKEAWAYS

Performing the uppercut test and biceps groove tenderness test together, has the highest sensitivity and specificity to aid in the diagnosis of LHB biceps pathology.
(Compared with diagnostic arthroscopy (the PEC examination).

A decision tree analysis aides in the PEC examination diagnostic accuracy post-testing based on the ordinal scale pretest probability.

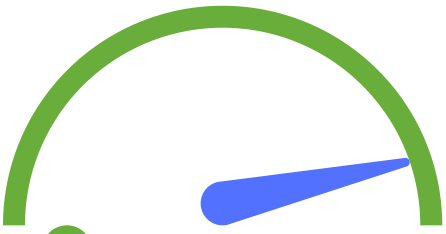
A quick reference guide was provided to use in the clinical setting.

ACCURACY OF ACTIVE COMPRESSION TEST FOR SLAP TEARS

OCTOBER 2022

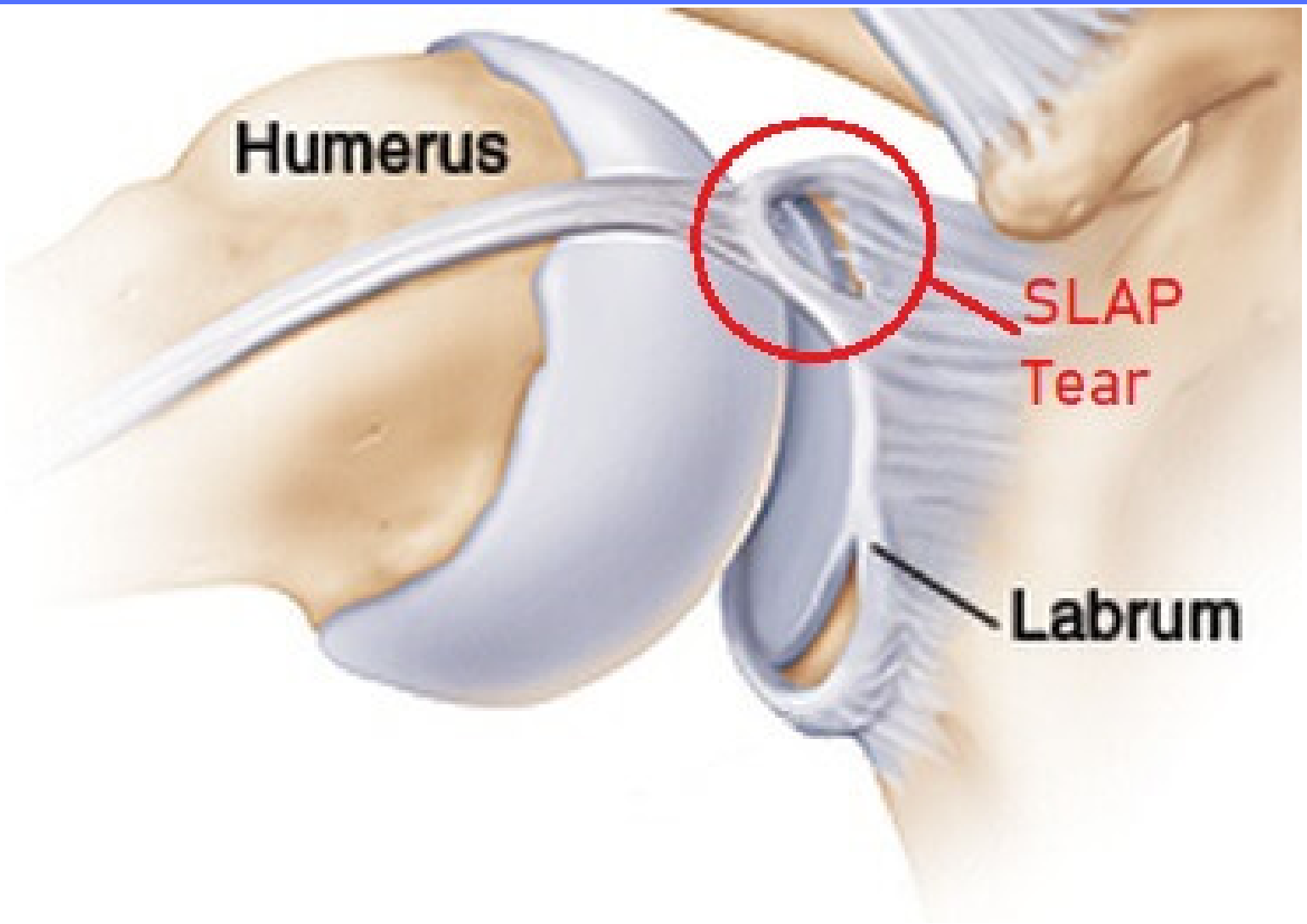
Click for Full Text (Davis et al. 2019)

JBI 10/11 [90%]



Quality Check
*see appx

This systematic review analyzed the diagnostic utility of the Active Compression Test, and compared results in those studies that evaluated Snyder's classification.



KEY FINDINGS

18 studies included (n=3091).

12/18 studies either had high or unclear risk of bias (66.6%).

Active Compression Test:

Sensitivity (71.5%)

Specificity (51.9%)

Diagnosis of SLAP Tears:

631 True positive; 915 False positive

252 False negative; 987 True negative

Positive likelihood ratio: 1.48

Negative likelihood ratio: 0.55

MAIN TAKEAWAYS

While the introduction of the Active Compression test was originally viewed as a promising test for SLAP lesions in the shoulder, years of studies have begun to show that its diagnostic utility is, in fact, not compelling.

Clinicians should remain cautious when using the Active Compression Test in isolation when suspicious of a SLAP lesion of any severity.

GIVE US YOUR FEEDBACK!

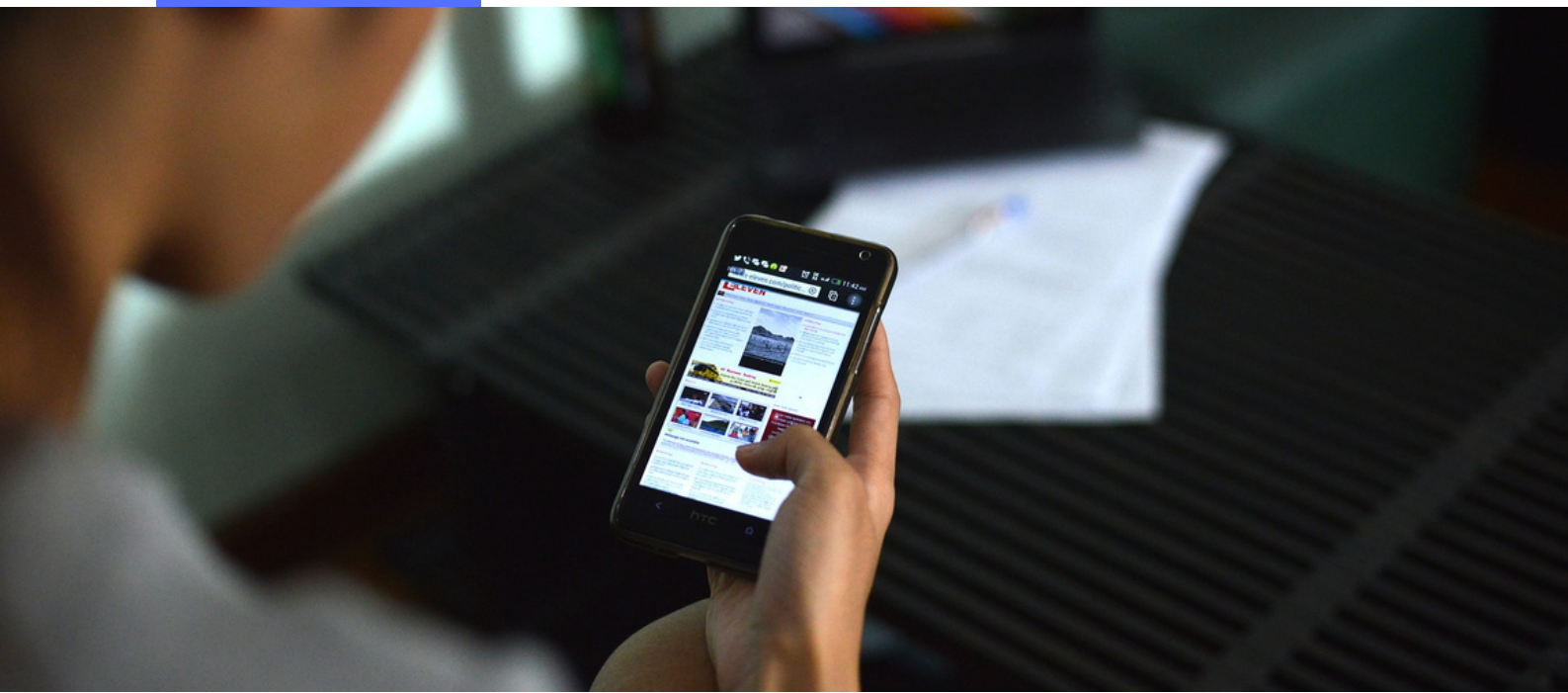
MEMBERS

We are on a mission to make research more accessible, easier to interpret, and quicker to implement.

Help us by giving 1 minute of your time to leave feedback for us.

We would greatly appreciate any feedback you have, as it helps us continually improve!

Leave Review



JBI Critical Appraisal Checklist for systematic reviews and research syntheses

Author: Breda et al. Year: 2022

		Yes	No	Unclear	Not applicable
1.	Is the review question clearly and explicitly stated?	+	☐	☐	☐
2.	Were the inclusion criteria appropriate for the review question?	+	☐	☐	☐
3.	Was the search strategy appropriate?	+	☐	☐	☐
4.	Were the sources and resources used to search for studies adequate?	+	☐	☐	☐
5.	Were the criteria for appraising studies appropriate?	+	☐	☐	☐
6.	Was critical appraisal conducted by two or more reviewers independently?	+	☐	☐	☐
7.	Were there methods to minimize errors in data extraction?	+	☐	☐	☐
8.	Were the methods used to combine studies appropriate?	+	☐	☐	☐
9.	Was the likelihood of publication bias assessed?	☐	X	☐	☐
10.	Were recommendations for policy and/or practice supported by the reported data?	+	☐	☐	☐
11.	Were the specific directives for new research appropriate?	+	☐	☐	☐

Overall appraisal: 10/11 (90%)

Comments:

Overall, this was a good systematic review, pooling data from quality studies on tests to rule in/out elbow fractures. OF the testing, total ROM testing was the most sensitive and most specific. Most of the tests has a high sensitivity, but low specificity. This highlights the ability of these tests to rule out fracture, more than to predict fracture being present.

JBI Critical Appraisal Checklist for systematic reviews and research syntheses

Author: Rosas et al. Year: 2017

		Yes	No	Unclear	Not applicable
1.	Is the review question clearly and explicitly stated?	+	☐	☐	☐
2.	Were the inclusion criteria appropriate for the review question?	+	☐	☐	☐
3.	Was the search strategy appropriate?	+	☐	☐	☐
4.	Were the sources and resources used to search for studies adequate?	+	☐	☐	☐
5.	Were the criteria for appraising studies appropriate?	+	☐	☐	☐
6.	Was critical appraisal conducted by two or more reviewers independently?	+	☐	☐	☐
7.	Were there methods to minimize errors in data extraction?	+	☐	☐	☐
8.	Were the methods used to combine studies appropriate?	+	☐	☐	☐
9.	Was the likelihood of publication bias assessed?	+	☐	☐	☐
10.	Were recommendations for policy and/or practice supported by the reported data?	+	☐	☐	☐
11.	Were the specific directives for new research appropriate?	+	☐	☐	☐

Overall appraisal: 11/11 (100%)

Comments:

Overall, this was a well conducted review and showcased different testing, either in series or in parallel, and gave the best clinical option for accuracy of testing for LHB pathology. Ultrasound was the most accurate overall, but clinically, uppercut tests and LHB palpation sensitivity had the highest accuracy. The table at the end of the article clearly shows the different testing options and makes a concise and useable tool for clinicians.

JBI Critical Appraisal Checklist for systematic reviews and research syntheses

Author: Davis et al. Year: 2019

		Yes	No	Unclear	Not applicable
1.	Is the review question clearly and explicitly stated?	+	☐	☐	☐
2.	Were the inclusion criteria appropriate for the review question?	+	☐	☐	☐
3.	Was the search strategy appropriate?	+	☐	☐	☐
4.	Were the sources and resources used to search for studies adequate?	+	☐	☐	☐
5.	Were the criteria for appraising studies appropriate?	+	☐	☐	☐
6.	Was critical appraisal conducted by two or more reviewers independently?	+	☐	☐	☐
7.	Were there methods to minimize errors in data extraction?	+	☐	☐	☐
8.	Were the methods used to combine studies appropriate?	+	☐	☐	☐
9.	Was the likelihood of publication bias assessed?	☐	X	☐	☐
10.	Were recommendations for policy and/or practice supported by the reported data?	+	☐	☐	☐
11.	Were the specific directives for new research appropriate?	+	☐	☐	☐

Overall appraisal: 10/11 (90%)

Comments:

Overall, this was a good look at the accuracy of the O'Brien's or Active compression test to diagnose SLAP tears. The testing accuracy is underwhelming and isn't recommended to diagnose SLAP tears. Often it is recommended to use a cluster of tests, however you sill need at least one test with a high sensitivity value.