



@physicaltherapyresearch

RAPID RESEARCH

October 2022

Inside This Week: Treating Lateral Elbow Pain

-
- ✓ Eccentric Exercise for Tennis Elbow

 - ✓ Extracorporeal Shockwave Therapy for Tennis Elbow

 - ✓ Autologous Blood and PRP Injection Therapy for Lateral Elbow Pain



ECCENTRIC EXERCISE FOR TENNIS ELBOW

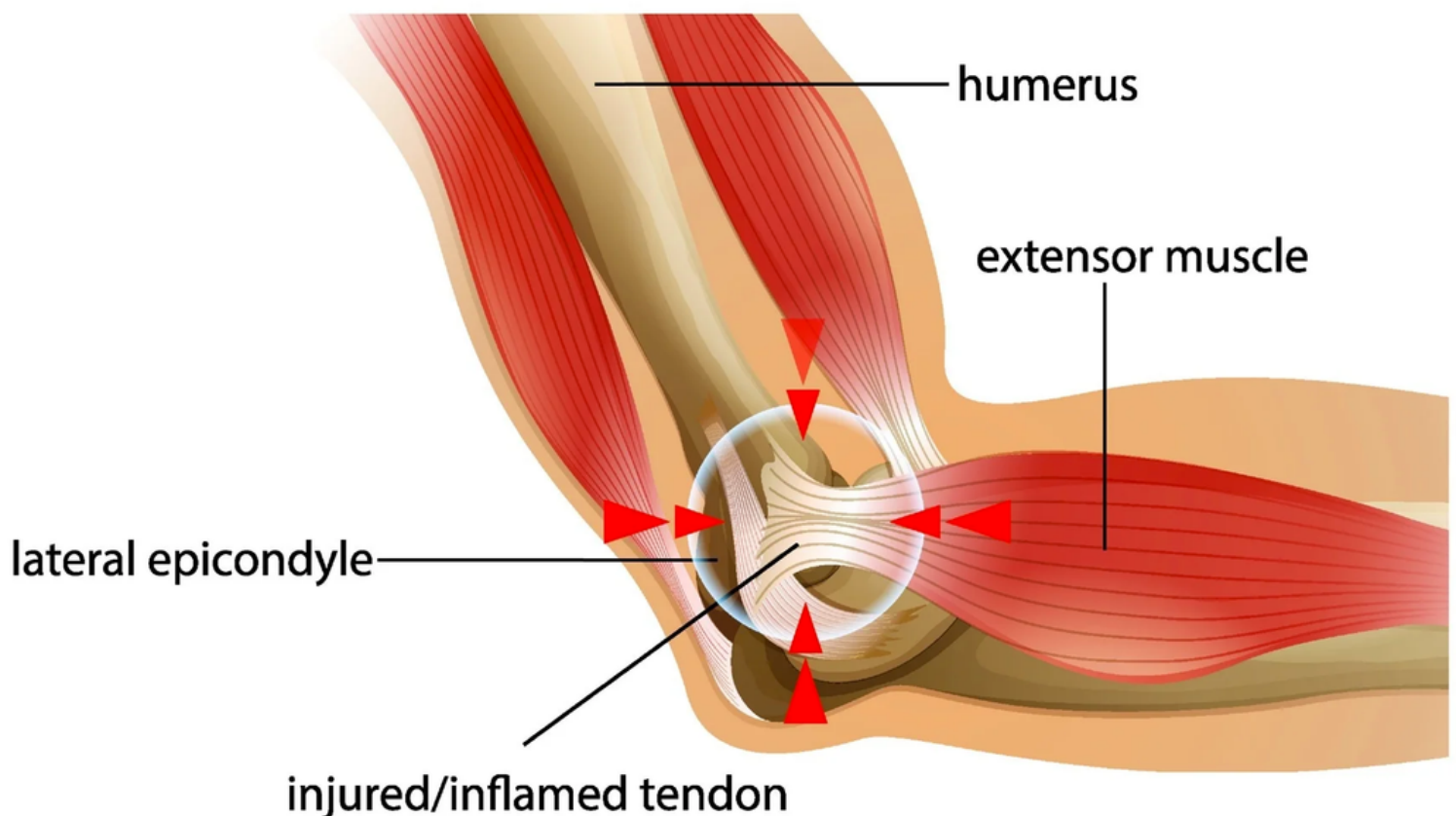
OCTOBER 2022

[Click for Full Text](#)
(Yeon Yoon et al. 2021)

JBI 10/11 [90%]



This systematic review and meta-analysis evaluated the current evidence for the effect of eccentric exercise on pain reduction, strength and functional improvement in patients with Lateral Elbow Tendinopathy (LET)



KEY FINDINGS

6 studies included, totaling 429 participants.

Eccentric exercise vs. standard therapy significantly improved:

Pain as recorded by visual analog scale (VAS) scores.

Muscle strength

Compared with the concentric or isotonic exercise group:

Significantly improved VAS scores.

However, no differences in muscle strength and function were observed between the two groups.

MAIN TAKEAWAYS

Eccentric exercise combined with adjuvant therapy showed beneficial effects with regard to pain reduction and muscle strength improvement.

Comparison between eccentric exercise and other exercises showed positive effects of eccentric exercise with regard to pain reduction.

Future studies with an optimal protocol and device for eccentric exercise, with a study design in which the effects of eccentric exercise can be isolated, are recommended.

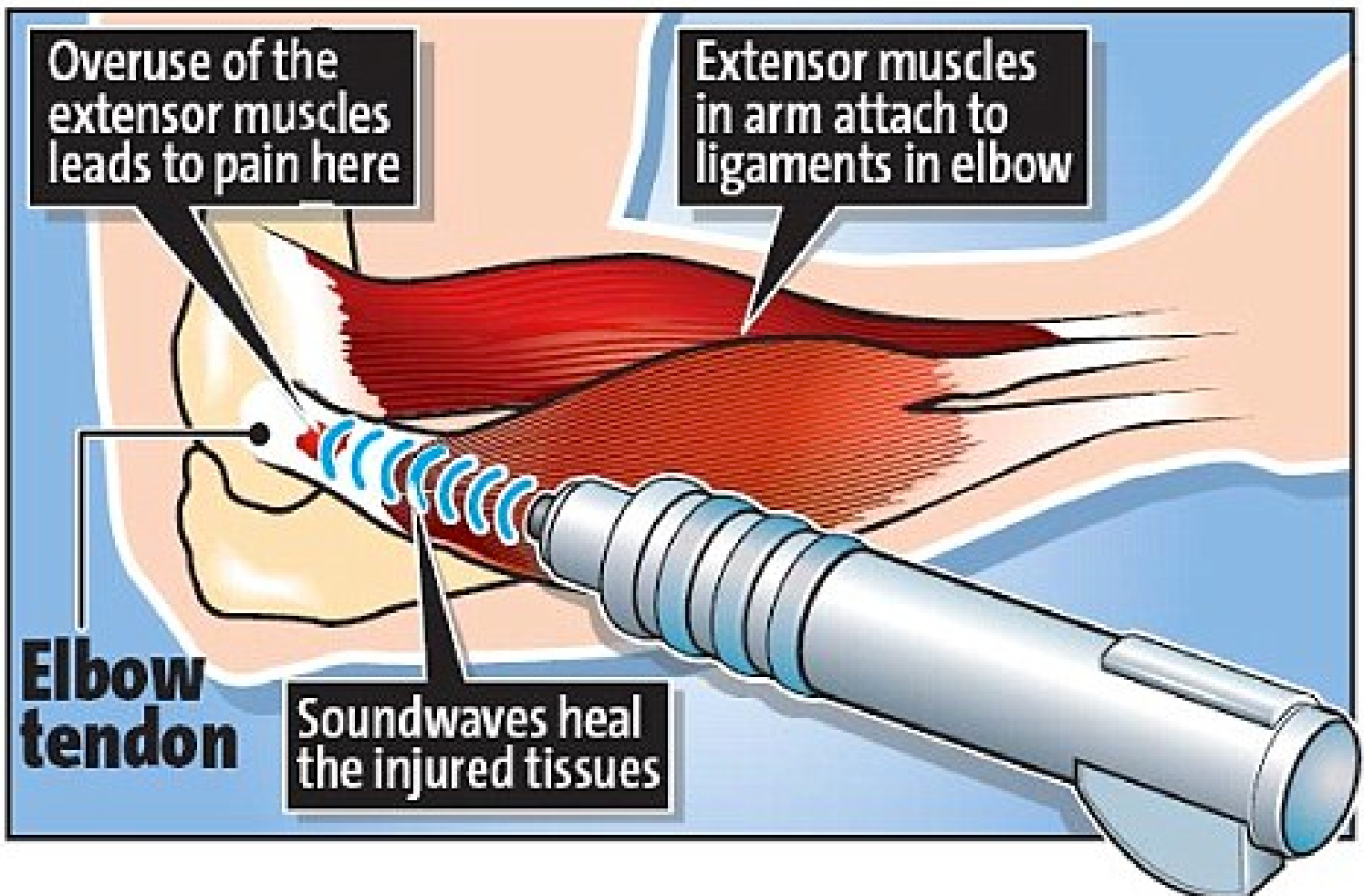
EXTRA-CORPOREAL SHOCKWAVE THERAPY FOR TENNIS ELBOW

[Click for Full Text \(Zheng et al. 2020\)](#)

JB1 10/11 [90%]



This systematic review and meta-analysis investigated the effectiveness of Extracorporeal shockwave therapy (ECSW) used in Lateral Epicondylopathy (LE),



KEY FINDINGS

9 studies included. 715 patient's data analyzed.

ESWT for Pain (VAS scale)

4 of all included studies reported the mean pain score with visual analog scale (1-100). Compared with placebo, the pain score was not significantly reduced after ECSW

Thomsen test

3 RCTs analyzed the mean pain score for Thomsen test following up at 12 weeks
There was no significant difference between ECSW and control

Grip strength

3/9 studies reported the effect on Grip strength.
ECSW was more effective in Grip strength as compared with control at 12 weeks.

Adverse event

4/9 trials reported some adverse events or complications.
5 common adverse effects related to the ECSW:
Pain, nausea, local reaction, sweating, & dizziness, shortly after treatment

MAIN TAKEAWAYS

ECSW cannot effectively reduce the mean overall pain.

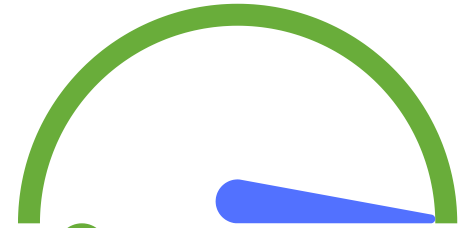
There appears to be a clinically important and significance difference in the treatment of LE with ECSW and might be better than others treatment such as injection and local anesthetic versus placebo for LE.

Because of study limitations, additional high level of evidence, more rigorously designed large-samples and high-quality randomized controlled trials are needed to guide clinical practice.

AUTOLOGOUS BLOOD & PRP INJECTION THERAPY FOR LATERAL ELBOW PAIN

[Click for Full Text
\(Karjalainen et al.
2021\)](#)

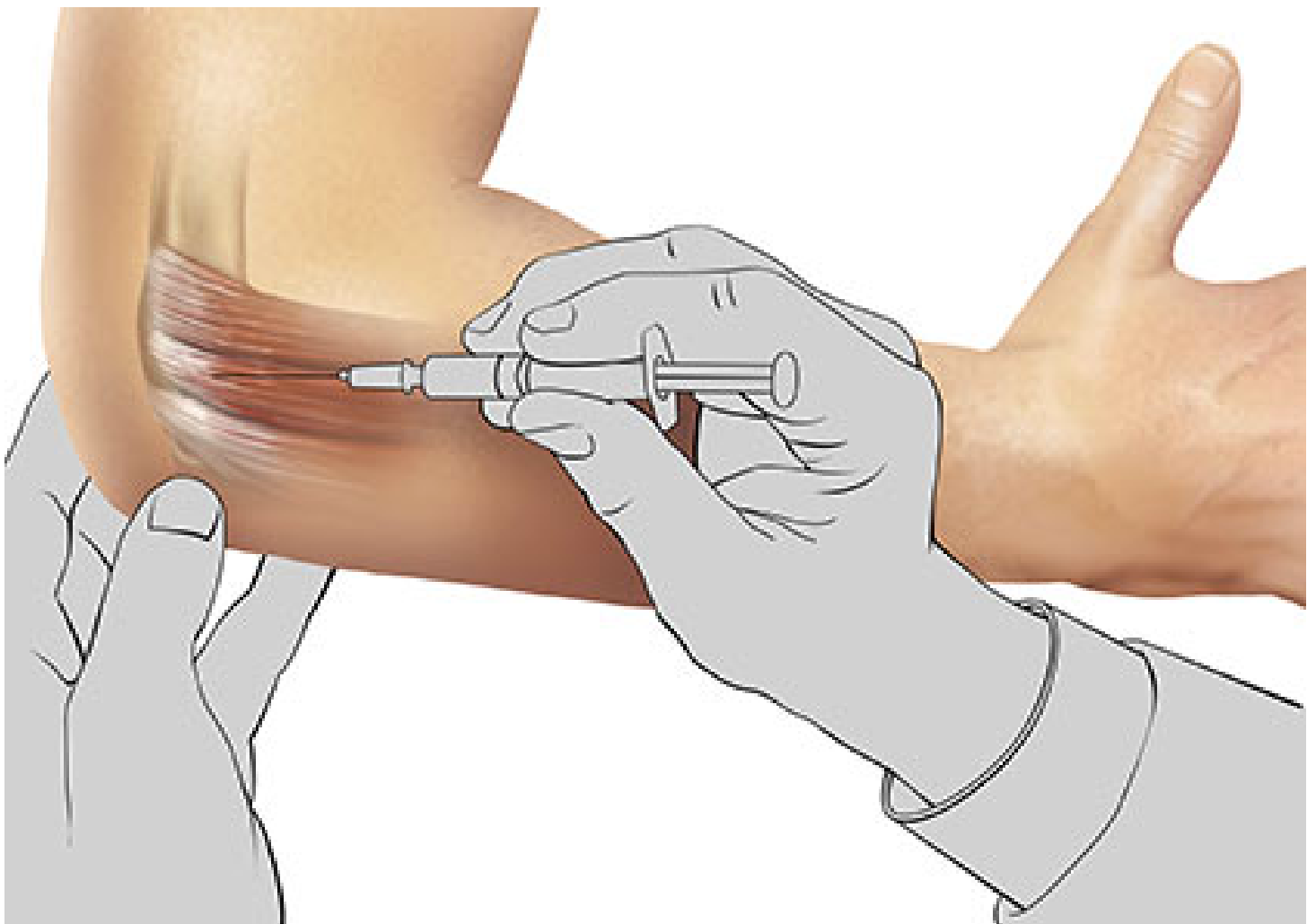
JBIR 8/8 [100%]



✓ **Quality Check**

*see appx

This systematic review analyzed current evidence on the benefit and safety of autologous whole blood or platelet-rich plasma (PRP) injection for treatment of people with lateral elbow pain.



32 studies with 2337 participants included;

Moderate-certainty Evidence:

Autologous blood or PRP injection probably does not provide clinically significant improvement in pain or function compared with placebo injection at 3 months.

Low-certainty Evidence:

PRP may not increase risk for adverse events.

Uncertain whether autologous blood or PRP injection improves treatment success.

At 3 months:

No studies measured health-related quality of life.

No studies reported pain relief (> 30% or 50%).

Avg pain 37% improved with placebo, & 1.6% better with autologous blood or PRP injection.

Avg function 27% improved with placebo and 1.9% better with autologous blood or PRP injection.

Treatment success 121/185 (65%) with placebo vs 125/187 (67%) with blood or PRP injection.

6-12 months, no clinically important benefit for mean pain or function was observed vs. placebo.

MAIN TAKEAWAYS

Data in this review do not support the use of autologous blood or PRP injection for treatment of lateral elbow pain.

These treatments probably provide little or no benefit for pain or function, and it is uncertain whether they improve treatment success or increase withdrawal due to adverse events.

There is always a small risk of infection and pain related to injection therapies.

Most of the participants in the included studies assessed their pain as low (< 3 on a 0 to 10 scale) after placebo injection. This is in line with the known benign natural course of the condition.

GIVE US YOUR FEEDBACK!

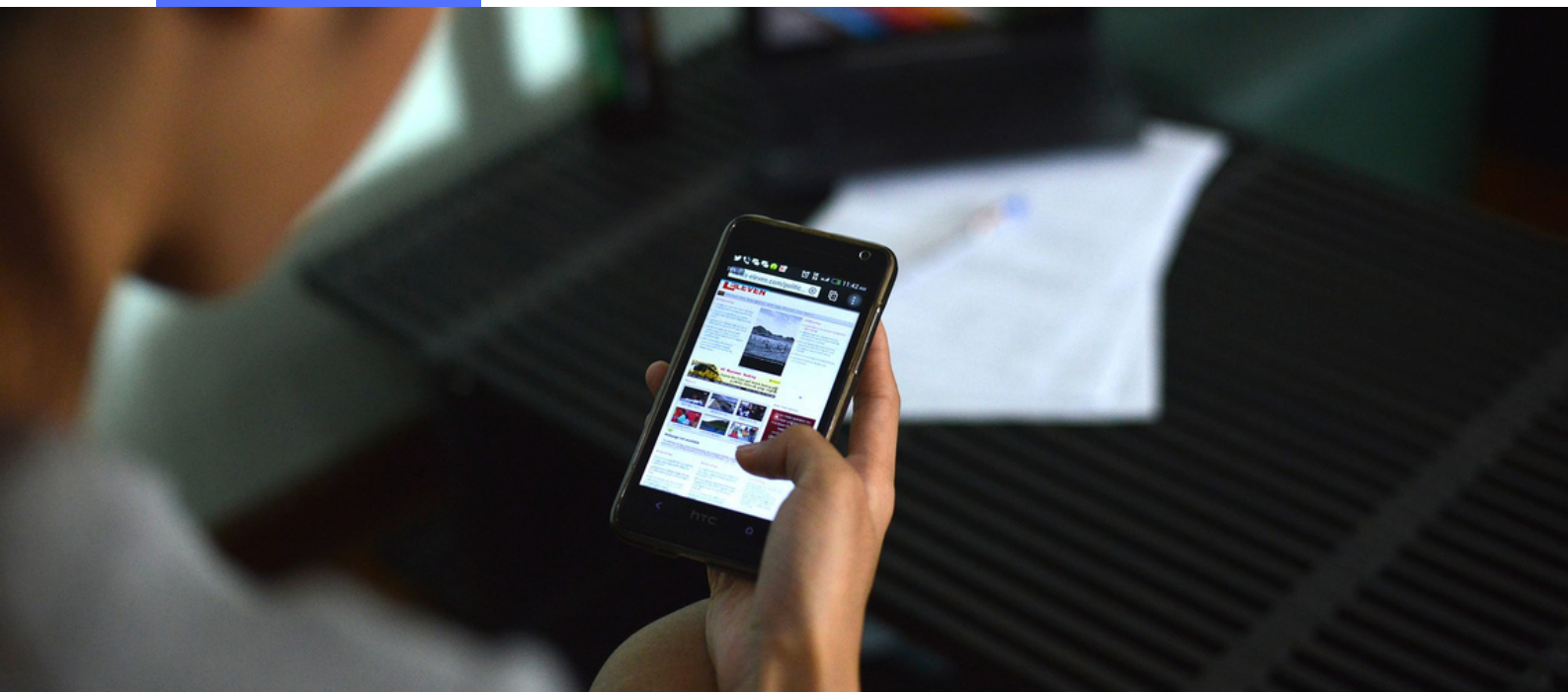
MEMBERS

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 SYNTHESSES

Author: Yeon Yoon et al. Year: 2021

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

Overall appraisal: 10/11 (90%)

Comments:

Overall, this is a quality study combining available evidence on eccentric exercise for tennis elbow. The results are clear, however the combined data comes from few and overall average quality studies. The results still show an improvement with eccentric exercise vs other methods. However using correct loading in different phases may be the best strategy overall, versus isolating one type, i.e. eccentric only.

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Zheng et al. Year: 2020

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

Overall appraisal: 11/11 (100%)

Comments:

Overall, this was a high quality study assessing RCTs on ECSWT effectiveness on pain and grip strength. The results were somewhat favorable to help reduce pain, but statistically, not significant. There was a positive improvement in grip strength, which can be applied to function overall. There were a high reporting of adverse events, almost 50% of the studies, although minor, should be taken into consideration.

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Karjalainen et al. Year: 2021

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

Overall appraisal: 11/11 (100%)

Comments:

Overall, this is a very well conducted study, analyzing many different comparisons of timeframes, pain, function, and treatments. Overall, the injections were no more effective than placebo, and in often cases worse. Injections may be useful to temporarily manage symptoms, however, does nothing to address the cause of overloaded tissues in the first place.