

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	A systematic review of systematic reviews for effectiveness of internal fixation for flail chest and rib fractures in adults
AUTHORS	Ingoe, Helen; Coleman, Elizabeth; Eardley, Willaim; Rangan, Amar; Hewitt, Catherine; McDaid, Catriona

VERSION 1 - REVIEW

REVIEWER	Miguel Fernandez University of Oxford, UK
REVIEW RETURNED	18-Jun-2018

GENERAL COMMENTS	<p>Thank you. I enjoyed reading this review which brings together systematic reviews of rib fracture fixation vs non-operative management in adults with flail or multiple rib fractures. It highlights the current evidence and emphasises the gaps in the evidence base. The paper is well written and well presented. It is clear that a substantial amount of work has gone into this. The objectives and methods are robust. I have only a few minor specific comments below:</p> <ul style="list-style-type: none">- The paper is very long and would perhaps benefit from condensing the main text to more succinctly deliver the message. Most of the tables could go into supplementary material.- please address the 'Error! Reference source not found' in the results section (page 9 line 9).
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REVIEWER	M.B. de Jong University Medical Center Utrecht
REVIEW RETURNED	02-Aug-2018

GENERAL COMMENTS	The news value of this article is very limited. Nothing new is presented, it is just a repetition of what we already know from literature. Although the work has been done studiously it doesn't bring something new to current science and practice.
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REVIEWER	LUIS TEODORO DA LUZ UNIVERSITY OF TORONTO, TORONTO, ONTARIO, CANADA
REVIEW RETURNED	22-Oct-2018

GENERAL COMMENTS	Interesting paper that summarized the published systematic reviews addressing rib fixation. Rib fixation is an important new management for chest trauma with multiple rib fractures and/or flail chest, type of injury that is common and can cause severe morbidity and mortality. I think that this paper helps with the knowledge translation of this intervention, stating that further better designed research is needed. Additionally, it demonstrates that we still need to improve knowledge synthesis, improve how we conduct systematic reviews and meta-analyses. I added 2 sticky notes on page 4, lines 15 and 25, minor suggestions/comments
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REVIEWER	Ben Taylor Grant Medical center
REVIEW RETURNED	01-Nov-2018

GENERAL COMMENTS	Strong review and very nice discussion regarding methods. Very lengthy, however. There's a few missing level III studies that the reviews you go over either didn't list or were missed in your figure, but some are more recent than 2014. Im not sure this adds much to the surgeon's knowledge base at this time, but this is a well done paper and sums up the current knowledge of the topic.
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1 Miguel Fernandez Institution and Country: University of Oxford, UK	Response
Thank you. I enjoyed reading this review which brings together systematic reviews of rib fracture fixation vs non-operative management in adults with flail or multiple rib fractures. It highlights the current evidence and emphasises the gaps in the evidence base. The paper is well written and well presented. It is clear that a substantial amount of work has gone into this. The objectives and methods are robust. I have only a few minor specific comments below: - The paper is very long and would perhaps benefit from condensing the main text to more succinctly deliver the message. Most of the tables could go into supplementary material. - please address the 'Error! Reference source not found' in the results section (page 9 line 9).	The paper has been shortened to make the points more succinct. The Error! has been corrected to Figure 1

Reviewer: 2 M.B. de Jong Institution and Country: University Medical Center Utrecht	Response
The news value of this article is very limited. Nothing new is presented, it is just a repetition of what we already know from literature. Although the work has been done studiously it doesn't bring something new to current science and practice.	Our review has highlighted the high risk of bias within the previous reviews and the level of research waste in this field of orthopaedic research We believe the results and conclusions from this review therefore have merit.

Reviewer: 3 LUIS TEODORO DA LUZ Institution and Country: UNIVERSITY OF TORONTO, TORONTO, ONTARIO, CANADA	Response
Interesting paper that summarized the published systematic reviews addressing rib fixation. Rib fixation is an important new management for chest trauma with multiple rib fractures and/or flail chest, type of injury that is common and can cause severe morbidity and mortality. I think that this paper helps with the knowledge translation of this intervention, stating that further better designed research is needed. Additionally, it demonstrates that we still need to improve knowledge synthesis, improve how we conduct systematic reviews and meta-analyses. I added 2 sticky notes on page 4, lines 15 and 25, minor suggestions/comments	<p>We agree that more care needs to be taken in the preparation of systematic review evidence and better designed research is needed.</p> <p>Unfortunately, we are unable to see the highlighted sticky notes to address these minor introduction comments.</p>

Reviewer: 4 Ben Taylor Institution and Country: Grant Medical Center	
Strong review and very nice discussion regarding methods. Very lengthy, however. There's a few missing level III studies that the reviews you go over either didn't list or were missed in your figure, but some are more recent than 2014. Im not sure this adds much to the surgeon's knowledge base at this time, but this is a well done paper and sums up the current knowledge of the topic.	<p>We do recognise there has been further primary evidence produced following the commencement of this review however this has not been synthesised in a systematic review to our knowledge that met our inclusion criteria.</p> <p>The length of the manuscript has been addressed to be more succinct.</p>

VERSION 2 – REVIEW

REVIEWER	Miguel Fernandez Oxford Trauma University of Oxford, UK
REVIEW RETURNED	04-Jan-2019

GENERAL COMMENTS	The revisions have improved the paper and I support publication.
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REVIEWER	Luis Teodoro da Luz University of Toronto, Canada
REVIEW RETURNED	02-Jan-2019

GENERAL COMMENTS	In general, this paper has improved from the last review, especially being shortened. It is well done methodologically. Again, it summarizes the previous systematic reviews on the subject, adds a risk of bias assessment, which helps understanding that both the quality of the literature on flail chest treatment and reporting of systematic reviews need improvement.
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REVIEWER	Ben Taylor Grant Medical Center
REVIEW RETURNED	30-Dec-2018

GENERAL COMMENTS	Again - this is quite a long manuscript but it is comprehensive. As you conclude, there are quite a few meta-analyses and reviews of rib fractures, and although this particular one is not ground-breaking, it does help publicize the topic for further discussion as well as present the data as of a few years ago. The analyses you are using lack some of the newer studies from 2016 on, and this would obviously lead to different results as well.
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