

## 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

<b>TITLE (PROVISIONAL)</b>	Lifestyle behaviour change for preventing the progression of chronic kidney disease: a systematic review
<b>AUTHORS</b>	Evangelidis, Nicole; Craig, Jonathan; Bauman, Adrian; Manera, Karine; Saglimbene, Valeria; Tong, Allison

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Ryoma Mchishita Laboratory of Exercise Physiology, Faculty of Sports and Health Science, Fukuoka University Fukuoka, Japan
<b>REVIEW RETURNED</b>	14-Jun-2019

<b>GENERAL COMMENTS</b>	<p>This study is to investing behavior change techniques and functions in lifestyle interventions for preventing the progression of CKD. The reviewer thinks that this study summarizes many studies and analyzed them in detail. However, there are several limitations in this study.</p> <p>1. About selection of the target study population The target population of this study is a very broad range as CKD stages 1 to 5. The reviewer considers that if the purpose of this study is to prevent the progression of CKD, it should target CKD stage 1 and 2 subjects. On the other hand, if the purpose of this study is to prevent the introduction of dialysis and/or the progress of renal failure, should it not be targeted to CKD stage 3 to 5 patients?</p> <p>2. About the lifestyle factors The reviewer considers that lifestyles such as exercise, diet, smoking, and drinking vary widely range, and impacts of their improvement on kidney function is greatly different. Because this study combines all of the lifestyle factors, there is an impression that the whole study looks blurry. How about focusing on a few lifestyle factors such as exercise and diet?</p> <p>Based on the above points, please select the articles and summarize this study again.</p>
-------------------------	---

<b>REVIEWER</b>	Meyeon Park UCSF, USA
<b>REVIEW RETURNED</b>	05-Jul-2019

<b>GENERAL COMMENTS</b>	Extremely comprehensive and thorough review on an important and timely topic. I think a table explaining in more detail the behavior change techniques (especially the effective ones) may be important to broaden the audience. Also conclusion statement is not entirely consistent with the previous messages as details about feedback / monitoring are not given. I would suggest clarifying the conclusion statement. Also, were all 26 authors / supplemental data available for review (should state explicitly how much was available - it was stated that all were contacted but unclear how many responded).
-------------------------	---

<b>REVIEWER</b>	Dr. Ferrán Catalá-López National School of Public Health, Madrid, Spain
<b>REVIEW RETURNED</b>	01-Aug-2019

<b>GENERAL COMMENTS</b>	<p>Thank you for inviting me to review the submission 'bmjopen-2019-031625'.</p> <p>This manuscript reports the methods and results of a systematic review of randomized trials with the aim of identifying and evaluating lifestyle behavior change interventions for preventing the progression of chronic kidney disease.</p> <p>I was asked for an open peer review report and I interpret that to include all aspects of the design and conducting of the research process.</p> <p>General comments: This manuscript was a pleasure to read. Overall, the manuscript is interesting and their justification is clearly argued and convincing. The authors did a thorough review and synthesis of the relevant literature, in particular, an analysis of intervention functions and behavior change techniques and a description of primary outcomes and results in 26 studies. The methods are well reported (descriptive analysis without meta-analysis). There are no major flaws that would prevent a sound interpretation of the data. Congratulations to the authors' team.</p> <p>Minor comments: None.</p>
-------------------------	--

## VERSION 1 – AUTHOR RESPONSE

Reviewer 1 Ryoma Michishita:

2. “About selection of the target study population. The target population of this study is a very broad range as CKD stages 1 to 5. The reviewer considers that if the purpose of this study is to prevent the progression of CKD, it should target CKD stage 1 and 2 subjects. On the other hand, if the purpose of this study is to prevent the introduction of dialysis and/or the progress of renal failure, should it not be targeted to CKD stage 3 to 5 patients?”

We confirm that our aim and scope was behavior change interventions assessed in patients with CKD stages 1 to 5, to prevent progression of kidney disease. To be comprehensive, this includes both slowing the decline in kidney function and delaying the need for kidney replacement therapy. We also note that behaviour change interventions for progress of CKD are generally applicable across CKD stages 1 to 5.1

3. “About the lifestyle factors. The reviewer considers that lifestyles such as exercise, diet, smoking, and drinking vary widely range, and impacts of their improvement on kidney function is greatly different. Because this study combines all of the lifestyle factors, there is an impression that the whole study looks blurry. How about focusing on a few lifestyle factors such as exercise and diet? Based on the above points, please select the articles and summarize this study again.”

We acknowledge the varying impacts of diet, physical activity, smoking and alcohol consumption on kidney function. By including all types of lifestyle interventions, our findings provide broader and more comprehensive insights on all behaviour change techniques and intervention functions used in interventions for the prevention of progression of CKD. We have been explicit and comprehensive in reporting details about lifestyle interventions (Page 6, paragraph 5; page 10, paragraph 1; page 13, paragraph 3 – marked copy; Tables 1, 2, 3 and 4).

Of note, we did not identify any trials that included alcohol consumption or smoking as the sole focus of the intervention (see Page 10, paragraph 1 – marked copy). Our results showed that trials mostly focused on diet (11 trials) and physical activity (8). Seven trials included a combination of diet, physical activity, weight reduction or smoking cessation (Page 10, paragraph 1 - marked copy).

Reviewer #2 Meyeon Park:

4. I think a table explaining in more detail the behavior change techniques (especially the effective ones) may be important to broaden the audience.

As suggested, we have provided more detail about the behaviour change techniques by expanding on Table S1. The Behaviour Change Taxonomy version 1. This table now provides detailed descriptions and examples of each behaviour change technique mentioned in our study.

5. Also conclusion statement is not entirely consistent with the previous messages as details about feedback / monitoring are not given. I would suggest clarifying the conclusion statement.

Details about feedback and monitoring are mentioned in the methods and results (Page 8, paragraph 2; Page 10, paragraph 5 – marked copy) and shown in detail in Table 2 which details each behaviour change technique in the domain “feedback and monitoring” present in each trial. In viewing Table 2, it is clear that the techniques from the “feedback and monitoring” domain are present in nearly every trial, reinforcing its relevance to this study. In the discussion, the importance of feedback and monitoring is also described (Page 13, paragraph 3; Page 15, paragraph 2 – marked copy). We believe these explanations throughout the manuscript and the detail provided in Table 2, justifies the inclusion of feedback and monitoring in the conclusion statement.

6. Also, were all 26 authors / supplemental data available for review (should state explicitly how much was available - it was stated that all were contacted but unclear how many responded).

As advised, we have now included a statement specifying the amount of supplemental data available, the number of authors contacted and the number of authors who responded (Page 7, paragraph 4 – marked copy).

**VERSION 2 – REVIEW**

<b>REVIEWER</b>	Meyeon Park UCSF, USA
<b>REVIEW RETURNED</b>	22-Aug-2019
<b>GENERAL COMMENTS</b>	I'm satisfied with response, congratulations, and thank you.