**Author’s response to reviews**

**Title:** World-wide research architecture of vitamin D research: density-equalizing mapping studies and socio-economic analysis

**Authors:**

Dörthe Brüggmann (prevention@uni-frankfurt.de)
Lisa-Sofie Mäule (arbmed-klinik@uni-frankfurt.de)
Jenny Jaque (jenny.jaque@med.usc.edu)
Doris Klingelhöfer (klingelhoefer@med.uni-frankfurt.de)
Michael Bendels (bendels@med.uni-frankfurt.de)
Daniela Ohlendorf (ohlendorf@med.uni-frankfurt.de)
David Quarcoo (quarcoo@med.uni-frankfurt.de)
Frank Louwen (louwen@em.uni-frankfurt.de)
Sue Ingles (ingles@usc.edu)
Eileen Wanke (wanke@med.uni-frankfurt.de)
David Groneberg (occup-med@uni-frankfurt.de)

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**Author’s response to reviews:**

Re: NUTJ – D- 17-00123R2

Dear Editors-in-Chief,

We thank you for the opportunity to re-submit a revised version of our manuscript “World-wide research architecture of vitamin D research: density-equalizing mapping studies and socio-economic analysis”. Please find our point-to-point reply below.

Sincerely - for the authors -
Point-by-point reply:

Dear Reviewer 1,

We thank you for your constructive and explicit comments that once again will improve the manuscript considerably.

General comments:

The term levels are still used where the correct term is concentration[s], i.e. for measurements of 25(OH)D concentrations.

Answer: Thank you for the attentive proofreading. We changed the terms accordingly.

Specific points:

Page 5, line 25, line 238, and further on as well. Vitamin D has not been measured in this study, but its metabolite, 25(OH)D. Thus, it would be better to use the correct term throughout; alternatively use the term 'vitamin D status' throughout, with [serum 25(OH)D concentration] in brackets after that term the first time it is used.
Thank you for pointing out this imprecise use of the different terms. We replaced the term “Vitamin D” with the metabolite “25(OH)D” when appropriate and also improved respective paragraphs in the Method and Introduction sections.

Line 48, insert 'annually' after 20352622.
Answer: We added the word.

Page 6, line 25, insert and before policy makers
Answer: We inserted “and”.

Line 42, try 'to date' instead of 'until today'.
Answer: We agree. Since we edited the whole manuscript regarding its linguistic precision, so some of your justified comments are no longer applicable.

Page 8, line 51, the word before 'articles' has been lost, please replace it.
Answer: We inserted “.. the original articles …”.

Page 11, check that lines 20-22 read as they should.
Answer: We re-checked the respective passage and edited the text accordingly.

Page 12, line 15, and in respect of their .....?
Answer: Since we edited the whole manuscript regarding the linguistic precision, so some of your justified comments are no longer applicable.

Line 46 is unclear, do you mean, ' ......refined the search to identify synthetic and pharmaceutical forms of vitamin D3?'
Answer: Yes, you are right. We changed the sentence accordingly.
Page 16, line 15, ... type was bilateral ..... 

Page 17, line 36-37, the most common category in all? 
Answer: We apologize and corrected the sentences.

Page 18, line 13, ..for health were common among.....' 
Answer: see above

Page 20, line 39/40, of regional, non-English language journals.... 
Answer: We added “language”.

Page 21, line 18, I think you need to say why gestational diabetes was picked as a topic for this comparison?; 

Answer: We added a paragraph for an adequate explanation. Please see: “In order to correctly assess the results, we provide a comparison to another intriguing and common medical issue, gestational diabetes, that has been evaluated similarly.”

Line 49, ' .... speculate on whether the .... [not weather the!] 
Answer: We deleted “on”. So the correct sentence would read: “…to speculate whether the global vitamin D research…”.

Page 22, line 11, ..the similarity most likely depended on ..... 
Answer: We changed the sentence accordingly.

Page 23, line 35, ...largely similar for other topics ... 
Answer: We corrected the sentence as follows: “… is largely similar to their dominance regarding other medical subjects as…”.
Line 45, hence significance must be attributed to this matter in relation to many health issues?
Answer: We changed the sentence accordingly.

Page 24, line 26, ... all articles on this topic?
Answer: We changed the sentence accordingly.

Page 33, figure legends, line 23-4, please put threshold 30 vitamin D related articles in brackets, for clarity, and consider doing the same in line 44-5.
Answer: We agree and added the brackets accordingly.

Note that figures 6 and 7 failed to download and have not, therefore, been looked at.
Answer: We are very sorry to hear that and hope the download will work this time.

Dear Reviewer 2,

We thank you for your constructive and explicit comments that once again will improve the manuscript considerably.

Best regards for the authors

Dörthe Brüggmann

Many of the additional references have not been formatted correctly.
Answer: We apologize for that mistake for that. We corrected the format of the references.
Abstract:

Line 13. Insert 'awareness' in Since awareness of vitamin D …

Answer: In this context, we are referring to the increase of the actual deficiency of vitamin D in the respective countries, and not to the awareness of the problem. We are sorry for this unclear wording. The sentence reads now as follows: “Since the vitamin D deficiency is currently increasing…”.

Intro:

Whilst appropriate to use vitamin D in terms of sufficiency and insufficiency, the use of specific forms would be more appropriate when discussing levels/concentrations, i.e. 25OHD.

Answer: We clarified that we not only examined “Vitamin D” but also its metabolites and added these terms accordingly.


Answer: We corrected the formatting.

Lines 42 - 47. By setting a target of 105 nmol/l this reference does not follow the balance of evidence in the literature and no policy makers set population or individual levels anywhere near this concentration. Please revise.

Answer: Thank you for pointing this out - we deleted this reference.

Page 6, lines 23-28. This paragraph attempts to summarise, I think, the position of vitamin D research today and attempts to respond to the comments from Reviewer 1. However, this is a difficult in such a short paragraph and I do not feel is totally necessary here without proper discussion of where the vitamin D field is and where it is going. The use of more up to date references to support the assertions made in this paragraph would help; there are plenty of reviews that discuss the state of VD research and priorities for research.

Answer: Since your suggestion is that is not totally necessary - we would like to keep this passage as it is since it is a response to referee 1.
Why is "vitamin D" in inverted commas here?
Answer: We deleted the inverted commas.

Line 40. 'number' not 'numbers'. Line 42. Delete 'until today'
Answer: We corrected these points.

Line 40 - 49. I think your aims can extend beyond assessing the global research, because you also identify gaps in research endeavor.
Answer: Since the identified gaps are the conclusion of the publication assessment, we would prefer to address this point in the discussion and the conclusion section. We hope, you can agree with this position.

Page 7. Line 31. 'was' rather than 'has been'.
Answer: We wrote: “It began in 2008/9…”.

Line 32. 'has been' rather than 'was'.
Answer: We corrected this accordingly.

Lines 38 - 44. I think this is stating that the newQIS techniques have been standardized since its inception. Rephrase these last two sentences to "The use of standardized techniques for data analysis with the NewQIS platform allows for the reliable….etc"
Answer: We rephrased these sentences.

Page 8. Lines 14-16. Could be shortened to "NewQIS is able to extract data from either PubMed or WoS databases. For this…” etc
Answer: We corrected the sentence accordingly.
Page 10. Line 46. Use "As previously described for NewQIS studies in osteoporosis and other diseases…” etc

Answer: We corrected the sentence accordingly.

Line 50. Insert 'The' at the start of the sentence.

Answer: We added “The” at the beginning of the sentence.

Page 11. Line 31. "If at least two authors came from different countries" rather than "were coming from"

Answer: We changed the sentence accordingly.

Page 12. Line 15. "with regard" rather than "regarding"

Answer: We changed the sentence accordingly.

Page 13. Line 28. There is must be an error in Australia's output (quoted as n=8795).

Answer: You are absolutely right. Sorry for the mistake. We corrected it.

Lines 45. Delete "retrospectively"

Answer: We changed the sentence accordingly.

Page 17. Line 13-14 - there is a mistake in the dates: "1964-1964"?

Lines 11-17. These sentences could be simplified "This analysis showed an increase in the subject area of 'Endocrinology and Metabolism increasing from 10% in 1960-65 to 30% of published articles in the period 1990-94."

Answer: We changed the sentence as follows: ‘This analysis showed an increase of the subject area ‘Endocrinology & Metabolism’ from 1965 (less than 10 %) to 1994 (over 30 %)”.
Page 20. Line 11. "We explain this finding…” This data is not presented so I don't think it is a finding.

Answer: We absolutely agree with you. Therefore, we changed the sentence as follows: “We acknowledge that different numbers of vitamin D related articles…”.

Page 23. Lines 49-51 The sentence starting "Hence…” does not read well. Could this sentence be added to the end of the prior sentence. e.g. …and is of relevance to healthcare systems worldwide.

Answer: We changed the wording of this sentence as follows: “That is why significance must be attributed to this matter in relation to many health issues worldwide.”

Page 24. Line 1. Methods and awareness of the issues are improved over the last few years. You could cite the work of the VDSP here.

Answer: We absolutely agree and now mention this excellent approach.

Page 24. Line 15. The focus here is on vitamin D status rather than 'disease burden' which is rather vague.

Answer: We addressed this issue.

Page 24. Line 43/44. As in the abstract 'awareness of vitamin D deficiency is increasing' rather than prevalence.

Answer: We changed the sentence accordingly.

There is no Figure 5 so I cannot comment on its content.

Answer: We are sorry that the download of figure 5 did not work and hope that you will be able to have a look at in in this revision.

Table 1 heading. 'Features' not 'feature'
Answer: We corrected the mistake accordingly.

I am still not clear why the tables are ranked how they are (it looks like by ranking 3, but why?) and there do not appear to be any table legends which would help.

Answer: We now rank for the absolute number of publications and include a better description.