

Objectives

Correlations between vitamin D (VitD) and health and disease are plentiful. However, the findings are not always so clear regarding confounders for VitD status.

- We hypothesize that these observed relationships may be confounded by physical activity (PA), especially outdoor PA.
- The aim of this scoping review is to assess the evidence base for PA as a confounder of VitD status.

Background

- VitD has been correlated with a number of health outcomes and disease states; however, these relationships are likely confounded by the role of outdoor PA.
- Currently, there are few studies that consider confounders to vitD status and the potentially spurious relationships between PA and vitD status.^{2,3,4}

Methods

This scoping review will employ Arksey and O'Malley's five-stage approach to scoping reviews:

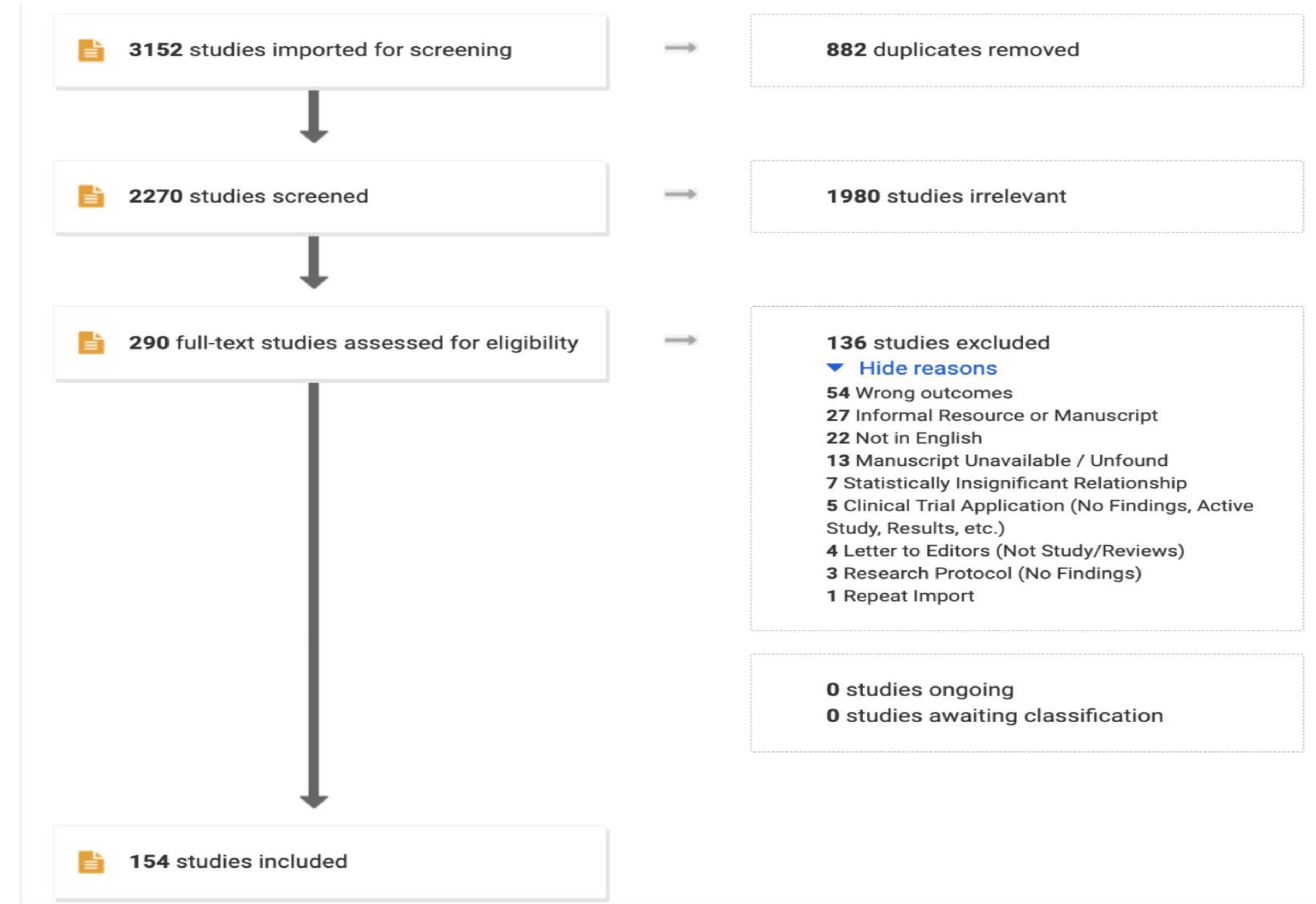
1. Identifying the Research Question
2. Identifying Relevant Studies
3. Study Selection
4. Charting the Data
5. Collecting, Summarizing and Report the Data

Publications will be identified through five databases (CINAHL, Cochrane Library, PubMed, Scopus, and SportDISCUS) and reviewed in Covidence.¹

Results

- The findings are expected to help identify what information is presently available regarding the correlation between outdoor PA and vitD status.
- The results of this scoping review will help to inform a quantitative analysis of the National Institutes of Health (NIH) All of Us database.⁵

PRISMA Diagram



Next Steps & Conclusions

It is unclear what effect outdoor PA may have on the relationship between vitD status and health outcomes and if any portion of this relationship is spurious. This scoping review will initiate an exploration of the relationship between vitD and PA to determine the strength and magnitude of potential confounders. Ultimately, we seek to reassess previous findings and determine the true effect of vitD alone by isolating the effect of outdoor PA.

Select References

1. Arksey H, O'Malley L. Scoping studies: Toward a methodological framework. *Int. J. Social Research Methodology* 2005; 8(1):19-32.
2. Bikle DD. Vitamin D: Production, metabolism and mechanisms of action. [Updated 2021 Dec 31]. In: Feingold KR, Anawalt B, Boyce A, et al., editors. *Endotext* [Internet]. South Dartmouth (MA): MDTText.com, Inc.; 2000-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK278935/>
3. Sempos CT, Heijboer AC, Bikle DD, Bollerslev J, Bouillon R, Brannon PM, DeLuca HF, Jones G, Munns CF, Bilezikian JP, Giustina A, Binkley N. Vitamin D assays and the definition of hypovitaminosis D: results from the First International Conference on Controversies in Vitamin D. *Br J Clin Pharmacol.* 2018 Oct;84(10):2194-2207. doi: 10.1111/bcp.13652.
4. Fernandes MR, Barreto WDR Junior. Association between physical activity and vitamin D: A narrative literature review. *Rev Assoc Med Bras* (1992). 2017 Jun;63(6):550-556. doi: 10.1590/1806-9282.63.06.550. PMID: 28876433.
5. Ramirez AH, Gebo KA, Harris PA. Progress With the All of Us Research Program: Opening Access for Researchers. *JAMA.* 2021;325(24):2441-2442. doi:10.1001/jama.2021.7702