Supplement 9. Criteria for evaluating studies employing Bayesian statistics (1).

Important criteria		
(1) Is the model clearly defined, with all model parameters identified and explained?	Yes	Normal distribution with parameters mean and variance, N(μ, σ^2), for odds ratios were elicited from the responses to the expert elicitation task (prior) and quantitative evidence (likelihood). Detailed analysis is reported on p.8-9 and supplement 3).
(2) Is there information about the priors used (a type of prior, where the prior came from, what the hyperparameter values were)?	Yes	Prior was elicited using expert elicitation task as described on p9 in the main text and in supplement 3 on pp 8-9.
(3) Which software and MCMC sampling method was used?	R, we found parameter for normal distribution analytically p. 65 (Spigelhalter), so no MCMC was needed. We sampled distribution using rnorm.	Supplement 3 (pp10-11)
(4) How did the authors assess convergence? Did they do a thorough job to ensure convergence was consistent and stable, even with a longer chain? Further, did they detail the number of settings thoroughly (e.g., number of chains, length of burn- n and post-burn-in portions of the chain; see Kaplan & Depaoli, 2013, or Van de Schoot et al. 2014, for an explanation of these settings)?	No	We did not perform MCMC sampler as the parameters were derived analytically. Therefore, no convergence assessment was carried out.
(5) Did the authors investigate the influence of the prior specifications on the final model results through a detailed sensitivity analysis? Specifically, if informed priors were used in parameter estimation, then a sensitivity analysis should be reported. Similarly, a sensitivity analysis should be reported if Bayes determinants were computed. This step ensures an assessment of	Yes	The informed prior (i.e., qualitative research elicited using expert task) is included in the synthesis, therefore, the prior used in this review is intentionally subjective. Figure 5 illustrates the findings with and without the prior. We report the results of the sensitivity analysis stratified by physical activity outcome in supplement 8.

the sensitivity of results to the choice of the prior. (Findings should be discussed in the Conclusion section of the article)		
Points for consideration		
This information must be present so that readers can fully understand the model being estimated	Yes	Present on p. 8. and Figure 1.
If information is not provided about the priors, then there is not enough information to judge the merit of the rest of the article or proposal This information should be present so that future readers can reconstruct all analyses	Information provided	Prior is described on p8 in the main text, and information on the prior is provided in supplement 3
The method for assessing convergence must be stated. It is important that a thorough assessment of convergence is present. Results will be meaningless without this information. All listed information should be present so that future readers can reconstruct all analyses	Yes	The analysis code is published in the GitHub repository: https://github.com/AliyaAM/bayesian_meta_analysis.
If a sensitivity analysis was not conducted on informed priors, then it is not clear how much of an impact the priors may be having on model results. This is an imperative step to ensure conclusions are not being overstated or exaggerated based on findings	Yes, please see comments	The informed prior is the qualitative evidence that is being synthesised as part of the main analysis, not sensitivity analysis. The impact of the prior (qualitative evidence) is being assessed in this review. To evaluate the impact of qualitative prior, the Bayesian meta-analysis results with and without the prior are compared in figure 5. Sensitivity analysis stratified by physical activity outcome is reported in supplement 8.

Bibliography

1. Depaoli S, Rus HM, Clifton JP, van de Schoot R, Tiemensma J. An introduction to Bayesian statistics in health psychology. Health Psychol Rev. 2017 Jul 11;11(3):248–64.