Article details: 2014-0012	
Title	Treatment of overweight/obesity in adult populations: a systematic review and meta-analyses
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Reviewer 1	**Laurie Twells**
Institution	Memorial University, Pharmacy/Medicine
General comments	This is a well done systematic review and meta-analysis of non-surgical treatment of overweight and obese adults. It is an update on a previously published review published in 2011. The results continue to provide evidence that modest weight loss is beneficial to patients in terms of improved health outcomes. This is an important message for health professionals to give to patients who often struggle with significant and sustainable weight loss (most unsuccessfully).
Reviewer 2	**William Midodzi**
Institution	Memorial University, Dept. of Medicine
General comments	The study of Peirson et al. provides a current overview and meta-data analysis of effectiveness of behavioral-based and/or pharmacologic intervention for adult obesity and overweight. The analysis suggested a moderate but clinically relevant reduction in weight and other cardiovascular risk factor. Increasing prevalence of obesity and overweight has been a main public health concern in recent years associated with major cardiovascular and other health outcomes, including death. The current study is an update of the United States Prevention Services Task Force (USPSTF) review for management of adult obesity and overweight presented in 2011. Sixty-eight studies involving 18 new ones not included in the USPSTF were reviewed. Major documentation supporting the analysis was available as an appendix. Independent investigators dual-reviewed each study and make a final determination for inclusion. The study is important since several randomized studies for assessment of benefit for early screening and management of obesity have become available in recent years. The study strengthened existing reviews and provides current overview particularly important in the Canadian context. The study of Peirson et al. met major requirements for conducting and reporting systematic review and meta-data analysis from primary studies of clinical trial as outlined in the PRISMA. The results presented are of publishable quality. The reduction in cardiovascular risk factors especially T2DM may suggest primary care-relevant behavioral-based and/or pharmacologic interventions programs are important. Minor comments: •What is not understood is whether weight loss and risk reduction was maintained after intervention was completed. •The study may benefit subgroup analysis particularly race specific to understand how results may vary among ethnic subgroups. •Some minor editorial work needed. Major comment: NONE Competing Interest: NONE William Midodzi, PhD Assistant Professor, Clinical Epidemiology Memorial University Faculty of Medicine St. John's, NL Canada
Reviewer 3	**Andrew Jull**
Institution	University of Auckland, School of Nursing
General comments	The paper represents a substantial effort and has produced a high quality systematic review of variable quality studies. Defensible pragmatic decisions have been made with respect to aggregating studies for meta-analysis (eg splitting control groups to avoid double counting) and the PRISMA statement has clearly guided the development of the paper. I have a few relatively minor concerns that I am sure can be quickly addressed: 1. It is difficult for the reader to link studies in the results and the table of included studies (table 2) or tables 1, 3, and 4. Thus identifying which studies are included in which comparisons is not possible at present (except those included in the forest plots). 2. The methods section specifies Cochrane's Q and the I2 (I squared) will be used to assess statistical heterogeneity - while these are reported in the forest plots, the values reported in the text (and tables 1, 3 and 4) do not report the tests of heterogeneity, but rather the test for the subgroups being different. This is not specified in the methods and is a different test. It may be that the subgroup test reflects your sensitivity analyses, but that is not clear.

	3. The numbering of the forest plots (figures 1 and 2) does not match the text (figures 2 and 3).
	4. Given the absolute differences (ARI and ARR) are shown for some dichotomous outcomes, I am not convinced that the values per million that are also presented are particularly useful - the values do provide a more exact estimate of effect per million, but the rounding error is quite small (~10/10,000 events) and thus not useful. It would be more useful to present the absolute difference with the 95%CI rather than present the confidence interval as a range in numbers of people per million.
	5. The inferences drawn from the analyses of incidence of T2DM may need reconsideration. While the interventions may be one's involving lifestyle, the populations (when Morey, Burtscher, Janus, Ma, Ockene and Penn are considered) appear to be limited to prediabetic populations. The incidence of new onset T2DM favours the interventions in the prediabetic populations, but the interpretation and conclusion may be seen to overstate the evidence with the inference being it is generalisable to all overweight and obese people. While I agree that is likely, strictly speaking it is an extrapolation of the evidence as it appears here and should probably be acknowledged as such.
	6. The conclusion in the abstract appears to be missing a conjunctive word.
Author response	Reviewer #1 Comments to Authors Authors' Revisions/Response (ARR #) This is a well done systematic review and meta-analysis of non-surgical treatment of overweight and obese adults. it is an update on a previously published review published in 2011. The results continue to provide evidence that modest weight loss is beneficial to patients in terms of improved health outcomes. This is an important message for health professionals to give to patients who often struggle with significant and sustainable weight loss (most unsuccessfully). ARR 26: No action required. Reviewer #2 Comments to Authors Authors' Revisions/Response (ARR #) The study of Peirson et al. provides a current overview and meta-data analysis of effectiveness of behavioral-based and/or pharmacologic intervention for adult obesity and overweight. The analysis suggested a moderate but clinically relevant reduction in weight and other cardiovascular risk factors. The study is important since several randomized studies for assessment of benefit for early screening and management of obesity have become available in recent years. The study strengthened existing reviews and provides current overview particularly important in the Canadian context. The study of Peirson et al. met major requirements for conducting and reporting systematic review and meta-data analysis from primary studies of clinical trial as outlined in the PRISMA. The results presented are of publishable quality. The reduction in cardiovascular risk factors especially T2DM may suggest primary care-relevant behavioral-based and/or pharmacologic interventions programs are important. ARR 27: No action required. Minor Comments 1. What is not understood is whether weight loss and risk reduction was maintained after intervention was completed. ARR 28: See response #13 above 2. The study may benefit subgroup analysis particularly race specific to understand how results may vary among ethnic subgroups. ARR 29: While this was not a question of the review, few studies provided enough information that would allow us to go back to sub-analyze by race. 3. Some minor editorial work needed. ARR 30: Manuscript edited to condense, polish and clarify presentation. Reviewer #3 Comments to Authors Authors' Revisions/Response (ARR #) The paper represents a substantial effort and has produced a high quality systematic review of variable quality studies. Defensible pragmatic decisions have been made with respect to aggregating studies for meta-analysis (eg splitting control groups to avoid double counting) and the PRISMA statement has clearly guided the development of the paper. ARR 31: No action required Minor Comments

1. It is difficult for the reader to link studies in the results and the table of included studies (table 2) or tables 1, 3, and 4. Thus identifying which studies are included in which comparisons is not possible at present (except those included in the forest plots).
ARR 32: References have been added to the results section to allow readers to identify which studies are included in each comparison

2. The methods section specifies Cochrane's Q and the I2 (I squared) will be used to assess statistical heterogeneity - while these are reported in the forest plots, the values reported in the text (and tables 1, 3 and 4) do not report the tests of heterogeneity, but rather the test for the subgroups being different. This is not specified in the methods and is a different test. It may be that the subgroup test reflects your sensitivity analyses, but that is not clear.
ARR 33: See Revision #9 above; Minor edit to analysis section to improve clarity: "Cochrane's Q (α=0.10) and I2 statistic were used to quantify heterogeneity within and between sub-groups."

3. The numbering of the forest plots (figures 1 and 2) does not match the text (figures 2 and 3).
ARR 34: See revision #17 above

4. Given the absolute differences (ARI and ARR) are shown for some dichotomous outcomes, I am not convinced that the values per million that are also presented are particularly useful - the values do provide a more exact estimate of effect per million, but the rounding error is quite small (~10/10,000 events) and thus not useful. It would be more useful to present the absolute difference with the 95%CI rather than present the confidence interval as a range in numbers of people per million.
ARR 35: Values per million removed from tables. Confidence intervals for numbers needed to treat/harm have been added.

5. The inferences drawn from the analyses of incidence of T2DM may need reconsideration. While the interventions may be one's involving lifestyle, the populations (when Morey, Burtscher, Janus, Ma, Ockene and Penn are considered) appear to be limited to prediabetic populations. The incidence of new onset T2DM favours the interventions in the prediabetic populations, but the interpretation and conclusion may be seen to overstate the evidence with the inference being it is generalisable to all overweight and obese people. While I agree that is likely, strictly speaking it is an extrapolation of the evidence as it appears here and should probably be acknowledged as such.
ARR 36: Agreed - Abstract and Discussion section edited to include descriptor: "pre-diabetic populations" where appropriate

6. The conclusion in the abstract appears to be missing a conjunctive word.
ARR 37: Conjunction (and) added