

In the two sections “Aerobic exercise” and “Anaerobic exercise” the authors do not report on studies showing the effects of such exercise on insulin resistance, blood glucose and body weight. The authors must provide more solid information on the effect of exercise on CV outcomes. I just give some examples of published meta-analysis which can be used. Wahid A, Manek N, Nichols M, Kelly P, Foster C, Webster P, Kaur A, Friedemann Smith C, Wilkins E, Rayner M, Roberts N, Scarborough P. Quantifying the Association Between Physical Activity and Cardiovascular Disease and Diabetes: A Systematic Review and Meta-Analysis. *J Am Heart Assoc.* 2016 Sep 14;5(9). Li J, Siegrist J. Physical activity and risk of cardiovascular disease—a meta-analysis of prospective cohort studies. *Int J Environ Res Public Health.* 2012 Feb;9(2):391-407. Oguma Y, Shinoda-Tagawa T. Physical activity decreases cardiovascular disease risk in women: review and meta-analysis. *Am J Prev Med.* 2004 Jun;26(5):407-18. Conclusion. I would see a table summarizing what is known and what still needs to be studied in the field.

Dear Reviewer:

We concur with your comment and thank you for this feedback. Therefore, we added and discussed the references as per your recommendation:

- Wahid A, Manek N, Nichols M, Kelly P, Foster C, Webster P, Kaur A, Friedemann Smith C, Wilkins E, Rayner M, Roberts N, Scarborough P. Quantifying the Association Between Physical Activity and Cardiovascular Disease and Diabetes: A Systematic Review and Meta-Analysis. *J Am Heart Assoc.* 2016 Sep 14;5(9).
- Li J, Siegrist J. Physical activity and risk of cardiovascular disease—a meta-analysis of prospective cohort studies. *Int J Environ Res Public Health.* 2012 Feb;9(2):391-407

A recent meta-analysis published showed a decrease in the risk of all CV outcomes and diabetes mellitus incidence with increasing levels of physical activities. Another meta-analysis suggested that a high level of leisure time physical activity had a beneficial effect on CV health by reducing the overall risk of incident CHD and stroke among men and women by 20 to 30%, while moderate level of occupational physical activity might reduce 10 to 20% risk of CVD.

Additionally, we discussed the effect of exercise on insulin resistance, blood glucose and body weight.

Under the Introduction Section:



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This benefit is further compounded by the benefit physical exercise has on high-density lipoprotein cholesterol (HDL-C) ^[4], adipose tissue distribution ^[5], increased insulin sensitivity ^[6], improved cognitive function ^[7], enhanced response to psychosocial stressors ^[8] as well as a deterrent of depression. ^[9].

Under Aerobic Section:

Furthermore, aerobic exercise has been shown to have a positive impact on other dimensions of CV health. Several studies have demonstrated that aerobic exercise improves the lipid profile, particularly increasing the high-density lipoprotein cholesterol (HDL-C). ^[18] In an Australian study, aerobic exercise led to a small but statistically significant reduction in total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C) and triglycerides (TG) ranging in a span of 0.08 mmol/L to 0.10 mmol/L. They also showed an increase in HDL-C with their aerobic exercise program of about 0.05 mmol/L. ^[19] Similar results have been documented in children and adolescents, as well. ^[20] In a meta-analysis conducted by Kelley et al ^[21], it was concluded that aerobic exercises contributed to a statistically significant 9% increase in HDL-C and an 11% decline in TG, but no statistically significant changes in TC and LDL-C.

Comment #1: please include the following references related to rehabilitation: 1. A pedometer-based physical activity intervention for patients entering a maintenance cardiac rehabilitation program: a pilot study. Kaminsky LA, Jones J, Riggin K, Strath SJ. *Cardiovasc Diagn Ther.* 2013 Jun;3(2):73-9 2. Cardiac rehabilitation past, present and future: an overview. Mampuya WM. *Cardiovasc Diagn Ther.* 2012 Mar;2(1):38-49.

Dear Reviewer:

We agree with your comments and thank you for your feedback. We have discussed cardiac rehabilitation and added the references that you recommended:

- Cardiac rehabilitation past, present and future: an overview. Mampuya WM. *Cardiovasc Diagn Ther.* 2012 Mar;2(1):38-49.
- A pedometer-based physical activity intervention for patients entering a maintenance cardiac rehabilitation program: a pilot study. Kaminsky LA, Jones J, Riggin K, Strath SJ. *Cardiovasc Diagn Ther.* 2013 Jun;3(2):73-9

Furthermore, cardiac rehabilitation, which is physical exercise based, is a promising field which showed a favorable outcome among patients with heart failure and post-CVD events. ^[12-13]