Reviewer's report

Title: Metabolic syndrome in mid-life women is associated with low physical activity and low cardiorespiratory fitness

Version: 1 Date: 20 February 2013

Reviewer: Kiyoshi Sanada

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Major Compulsory Revisions

The overall goal of the present study is to examine the relative and combined associations of physical activity (PA) and cardiorespiratory fitness (CRF) with the prevalence of metabolic syndrome (MS) in midlife women. According to the authors, both PA and CRF were associated with the prevalence of MS but the latter appeared to be a better indicator with MS; therefore CRF should be encouraged in unfit individuals and especially among those who are sedentary to reduce risk of having MS and considered in the development of future primary risk assessment. The topic and some results of the present study are potentially interesting, but I could not find a strong scientific impact through the review of this manuscript.

The first, meta-analysis of 23 sex-specific cohorts of physical activity or physical fitness representing 1,325,004 person-years of follow-up clearly showed the dose-response relationship between physical activity, physical fitness and the risks of coronary artery disease and cardiovascular disease (Williams PT. Physical fitness and activity as separate heart disease risk factors: a meta-analysis. Med Sci Sports Exerc. 33:754-61, 2001.). It has been clear that additional amounts of physical activity or increased physical fitness levels provide additional health benefits. In addition, it has been clear that high physical fitness has increased the sensitivity for relative risk of atherosclerotic cardiovascular disease (RR=0.11-0.66) compared to high physical activity (RR=0.45-1.42).

Secondly, the measurement accuracy of physical activity is inferior to that of physical fitness in quality because an assessment of physical activity is using by questionnaire method, but to measure the physiological parameter such as VO2max. The difference in result between physical activity and physical fitness may be partly a reflection of this measurement accuracy.

Level of interest: An article of limited interest

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests.