Reviewer’s report

Title: Sex differences in response to maximal exercise stress test in trained adolescents.

Version: 1 Date: 16 April 2012

Reviewer: Gordon Fisher

Reviewer’s report:

The manuscript “Sex differences in response to maximal exercise stress test in trained adolescents” by Fomin et al. addresses specific sex differences for metabolic and cardiovascular responses to a maximal stress test performed on a cycle ergometer. The manuscript is well written and provides insight regarding similar and different metabolic and cardiovascular responses in adolescents that should be considered when assessing and/or developing training protocols for athletic performance or general health assessments. The primary findings were that the observed sex differences in VO2 max were no longer significantly different when normalized to leg lean mass, and that the observed difference for whole body VO2 was primarily due to differences in cardiac index between males and females.

Minor Revision
1. I do not have major concerns regarding associated with context or clarity of the manuscript, however one concern is the use of the term VO2 max obtained from the cycle ergometer test. This should be changed to peak VO2 or VO2 peak, which more accurately describes the outcome of the cycling test. It is likely if the max test was performed on a treadmill greater VO2’s would be achieved.
2. Also, please provide a citation or a better description of how leg lean mass was calculated from the BIA test.

Discretionary Revision

When looking at absolute or body weight normalized VO2 between male and female participants; is there a difference if time training per week is added as a covariate? Just a curiosity of the reviewer. The manuscript is well written and would lend valuable insight regarding differing physiological responses to exercise between adolescent males and females.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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'