Reviewer's report

Title: Comparison of mechanical work and metabolic energy consumption during gait throughout pregnancy

Version: 3 Date: 3 August 2015

Reviewer: Jean McCrory

Reviewer's report:

General Comments:

The purpose of this manuscript is to determine if mechanical work prediction equations correlate with the metabolic energy cost of gait during pregnancy. The article is well-written and holds the readers' interest. The introduction is thorough. The methods are appropriate. The results are well-organized. The data will contribute to the field of gait biomechanics during pregnancy.

Discretionary Revisions:

The authors tend to over use commas. Specific places are:
Line 41, Abstract, delete comma after equations
Line 43, Abstract, delete comma after exchange
Line 56, Abstract, delete comma after velocity
Line 92, Background, delete comma after work
Line 125, Background, delete commas after pace and laboratory
Line 266, Discussion, delete comma after study

Table 1: Mass is in kg, Weight is in N. Please change Weight to Mass.

Minor Essential Revisions:

Title: I think your “aim” statement of your abstract more clearly describes the study than your title does. Please consider modifying the title to more closely match your purpose statement.

The citation method seems incorrect. I am not sure of what the method of citing is. They are not in alphabetical order or in order of appearance. For example, in the background, the order of initial citation appearance is: 1, 2, 3, 4, 7, 8, 9, 6, 11, 12, 13, 14, etc. Where are #5 and 10? Why does 6 follow 9?

Line 77, Background: do you mean “pre” pregnancy malnutrition or “early” pregnancy malnutrition? (i.e. Do you mean morning sickness?)

Line 82, Background: When you say vertical excursions of the COG change, please describe the change. Increase? Decrease?
Methodology: Please include exclusion criteria for the study.

Results, and then line 225 \((r^2 = 0.63)\). In the results, you provide the \(r\) for the correlations, except for weight. For that, you provide an \(r^2\) value. The \(r\) would be 0.79? Please clarify this. It is confusing to be given all \(r\) values and then one \(r^2\) value.

Figure 3: The axes labels appear to be incorrect for Figure 3. In the discussion section, you state that figure 3 demonstrates a significant relationship between velocity and energy recover, but there is no V on figure 3.

Line 239, Discussion: you state “researchers would be able to determine…” This is confusing. Should “would” be “should”? Or perhaps “are”? For clarity, please reword this sentence.

Major Compulsory Revisions:

I have no major compulsory revisions.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.