Reviewer’s report

Title: BMI, waist circumference at 8 and 12 years of age and FVC and FEV1 at 12 years of age; the PIAMA birth cohort study

Version: 2 Date: 24 December 2014

Reviewer: Claudia Flexeder

Reviewer’s report:

Minor Essential Revisions:

1. Abstract (Methods): The authors should add a sentence to the methods section in the abstract describing the statistical models which were used to analyse the associations between BMI and WC with lung function parameters.

2. Abstract (Methods/Results): It is not clear whether the regression models were adjusted for confounding variables (e.g. age and height) and if so, whether the presented results refer to the adjusted models.

3. Abstract (Results): The results presented in the abstract are limited to FVC. Maybe one sentence could be added mentioning the results for the association between BMI/WC with FEV1 and FEV1/FVC (as boys and girls with a high BMI and WC have a significantly lower FEV1/FVC ratio compared to those with a normal BMI and WC).

4. Methods: Please state how pubertal development was defined. Was it defined based on information requested via the PDS?

5. Results: There is a strong focus on the results for the associations of BMI and WC with FEV1 and FVC. As FEV1/FVC is a measure of airway obstruction, results of this or previous studies on this parameter might also be discussed in the abstract, introduction and discussion.

6. Table 1: The definition of overweight and obesity is mentioned in the figure legend, but a separate symbol is needed for this footnote (as it is stated with the definition of “frequent asthma symptoms”) and should also be added in the table behind the terms “overweight” and “obesity”.

7. Table 1: Please add a footnote for the variables “BMI category 8 and 12 years” and “Waist circumference category 8 and 12 years” to explain how the categories were defined.

8. Table 1: The study characteristics for categorical variables could be stated as n/N (%) instead of n (%) to get some information about the number of missing values. For instance, the total number of subjects on which the comparison of BMI and WC categories at 8 and 12 years is based (variables “BMI category 8 and 12 years” and “Waist circumference category 8 and 12 years”) differs from the numbers referring just to the 12 year follow-up (n=655 girls and n=633 boys) as children with a BMI or WC below the 10th percentile were excluded and information on BMI and WC at 8 as well as at 12 years of age was not available.
for all 1288 subjects.

9. Methods (Statistical analyses): The authors could add a sentence which tests were used to compare the study characteristics of males and females presented in Table 1.

Discretionary Revisions:

10. Methods (Statistical analyses): What was the distribution of the lung function variables before log-transformation? Were they log-transformed to obtain the normality assumption required for the linear regression analysis?

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.