Author's response to reviews

Title: Optimal fetal growth for the Caucasian singleton and assessment of appropriateness of fetal growth: an analysis of a total population perinatal database

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Author's response to reviews: see over
Changes made in revision of MS: 2095844493428875 completed 13.05.05:

*BioMed Central requested formatting change.*

The requested formatting change to the section on competing interests has been made following clarification from Dr. Alison Shaw of the BioMed Central editorial board.

*Reviewer’s report, points taken in the order given in his report.*

p.8: We clarify that the study includes the full distribution of gestational age previously stipulated (23-42 weeks) by addition of the sentence: “Due to the slower rate of weight accretion with respect to its dispersion in infants born at term, this method of data cleaning is not applicable for births reported as being at greater than 36 weeks gestational duration.”

The editors have not suggested that we delete the equations from the text.

Reference 24 (Alexander et al 1998) (p.19) has been replaced with the more recent Alexander et al 2005 and the phrase, ‘in the third trimester’ replaced with the more narrowly specified phrase ‘at term’.

The phrase and reference referring to an animal models has been deleted, pp19-20.

The point is not that maternal BMI is unavailable but that it is not a desirable variable to include, as it is unlikely to correlate linearly with fetal growth and any correlation is likely to be pathological. We have therefore deleted the sentence referring to the difficulties of obtaining maternal pre-pregnant BMI because it appears to have detracted from this point.

p.21. No implication of an interaction term between age and parity wrt growth (of the head or anything else) is intended, parity was included as a main effect only, not as an interaction term. Since both head size and maternal age tend to increase with increasing parity, if there were no adjustment for parity, an association between head size and maternal age might be observed simply because older women tend to be of higher parity – simple confounding. The association of head circumference with maternal age is mentioned explicitly in results on p. 12 as well as in the equation and in the Table.

p.21. Regression to the mean. The authors thank the reviewer for drawing our attention to the interesting paper of Barnett et al. We have chosen not to refer to it in this paper because Barnett et al discuss primarily repeated measurements and is therefore not applicable to our cross sectional analysis. The primarily linear relationship with regression to the mean limited to a very small proportion of women at the extremes of height does not suggest significant measurement error and we believe that there is a simple explanation for the observation: our inability to adjust for paternal height. We have added a sentence to this effect: “This may occur because we could not include a term for paternal height and there will be a tendency for women at the extremes of height to have partners with heights that are less extreme”

Conclusion. The follow sentences concerning the future of POBW is added to the Conclusion: Since POBW is a measure of appropriateness of uterine growth it may be used as a continuous variable. The use of POBW in clinical and research settings will prove whether it is a
more precise predictor of compromise within individuals than previously available indicators of intrauterine growth status.

_Reviewer’s Specific comments_

p. 5: see Discussion is omitted.

p.6: As suggested we have deleted ‘or not’, changed last sentence of first para to “The most recent available cohort at the time of writing was 2002.”, deleted ‘as defined in the Introduction’, changed ‘as has been to ‘as’ and removed the redundant space before the period.

p.7 and 8. Made suggested changes.

p.9 My text books use the term ‘multivariate’ which we have now included as one word.


p.17. Changed ‘another’ to ‘also’ and deleted ‘for different reasons’ as suggested. Changed ‘If it arises…..’ to ‘If racial variation in intrauterine growth arises……’, thus specifying ‘it’ as requested and made additional suggested changes on p.17.

p.18. Replaced the complex sentence starting with ‘since’ with “Although the selection criteria only consider causes of growth anomaly we anticipated that selected births would be more likely to be born at term, be larger and born to taller, older and less disadvantaged mothers for several reasons. For example, pathologically affected growth is more often restricted than accelerated and is also associated with preterm birth and maternal smoking, the most prevalent pathological determinant of intrauterine growth, is associated with maternal age and socio-economic circumstances.” And made other suggested changes.

p.19. Made suggested changes.

p.21. Changed ‘account’ to ‘accounted’ as requested. There is no reference that I know of to support the statement that birth weight can be measured to within 0.15%. Midwives routinely use scales that measure to within 5g, for a median birth weight baby this represents 0.15% of the weight. To more accurately reflect this situation this sentence with: Birth weight is routinely measured to within 5g, representing about 0.15% of a median weight baby. Made the other 3 requested changes.

p.22. The number of decimal places that it is appropriate to quote depends primarily on the sample size and secondarily on the point of reporting the numerical value. Our sample size easily supports two decimal places and we are trying to make the point that 0.03% is a very small proportion. Since 0.03% is very much less than 0.1%, indeed it is closer to 0.0% than 0.1%, we believe that it is appropriate in this instance to quote to two decimal places.

Other suggested changes made.
p.23 All suggested changes made.

p.24 The following 2 sentences have been added to the Conclusion: Since POBW is a measure of appropriateness of intrauterine growth it may be used as a continuous variable and subjected to parametric statistical analysis. The use of POBW in clinical and research settings will prove whether it is a more precise predictor of compromise within individuals than previously available indicators of intrauterine growth status.

Tables.1-3. All suggested changes have been made.

Tables 4-6. Adjusted R-square has been quoted in the footnotes. Upper and lower confidence limits are no longer separately specified in column headings.

Table 7. Has been reorganised even more efficiently as 4 columns but only 3 rows of data.

Table 8. Values under the Change columns are right aligned.

Figures. The Y-axis label now reads from bottom to top and grey tones have been eliminated as suggested.