Author’s response to reviews

Title: The relationship between lower limb muscle volume and body mass in ambulant individuals with bilateral cerebral palsy

Authors:

Jonathan Noble (jonathan.noble@gstt.nhs.uk)

Emily Chruscikowski (e.chruscikowski@warwick.ac.uk)

Nicola Fry (nicola.fry@gstt.nhs.uk)

Andrew Lewis (andrew.lewis5@ouh.nhs.uk)

Martin Gough (martin.gough@gstt.nhs.uk)

Adam Shortland (adam.shortland@gstt.nhs.uk)

Version: 2 Date: 24 Oct 2017

Author’s response to reviews:

Thank you to the editor and reviewer for your helpful comments. We have updated the manuscript to reflect these comments and questions. Below we have detailed our responses to each individual comment.

Editor Comments:

1) Please include the name of the ethics committee instead of just saying "The local research ethics committee..."

Reply: The NHS National Research Ethics Service approved this research. This has been added to the manuscript.

2) Please put Author Contribution and Acknowledgments under the Declaration section.
Reply: This has been moved as requested.

3) Please use the authors' initials for for the Author Contribution section.

Reply: This has been updated

BMC Neurology operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers.

Reviewer reports:

Kristina Tedroff (Reviewer 2): Thank you for letting me review this paper once again, it has improved much but there are some minor but essential issues that I would like to be clarified prior to publication.

Language and typos.

P 8 row 7, word by is missing (once by a )

Reply: This has been corrected.

P9 row 24, typo, palsy misspelled

Reply: This was updated to ‘with the group with CP’ for consistency.

P10, row 5, Please change to:for the groups with CP and TD

Reply: This was updated to ‘both participant groups’.

P12, row 14-15 typo, should be explained by

Reply: I cannot see a typo in this section of the manuscript.
P 13, typo, an individual

Reply: This has been corrected.

P15, row 12, Please change to subjects with CP

Reply: This has been updated to ‘the individuals with CP’.

Background

P3, row 34, please move the reference to the end of the sentence for consistency. And additionally check that this has been done all through the manuscript

Reply: This has been updated. However not all references have been moved to the end of the sentence as in places it is correct that they are next to the referenced work, and not at the end of the statement. For example: ‘Since muscle size is related to strength[10], this suggests that muscle size may be an important factor in the ambulatory status of individuals with CP’. And ‘Muscles in the lower limbs of children with CP are reduced in size relative to their body mass compared to their TD peers[12-17], with greater muscle volume deficit increasing with increasing motor impairment measured using the gross motor function classification system (GMFCS)[12].’

Discussion

P15, row 16-18, Only the results for the GMFCS levels I&II are given. What were the corresponding results for GMFCS level III?

Reply: Subcategorising the group with CP by GMFCS level results in uneven group numbers, with only 6 in the GMFCS I group and 5 in the GMFCS III group. This significantly impacts on the analyzing this data. The GMFCS III data is shown in Figure S.5, however, as stated in this section of the discussion, four of the 5 data points for the GMFCS III group were clustered. Performing a regression analysis on such a dataset is not appropriate due as the regression will be strongly weighted by the fifth data point away from the cluster.
We have added the line ‘Regression analysis was not performed for the individuals with GMFCS III as four of the five data points were clustered’ to the discussion section to explain why the GMFCS III regression was not performed. We have also added the line ‘, as can be seen in Figure S.5’ to the end of the sentence explaining that the dataset is clustered for the GMFCS III group in the supplementary materials. ‘Linear regression was not performed for the GMFCS III group as 4 out of the 5 subjects at GMFCS III were clustered together, as can be seen in Figure S.5.’

P 16, The Long paragraph about the constant/intercept should be moved in part to the statistical section and only the part that discusses the limits with this method should be part of the discussion.

Reply: An extended explanation of the issue of the intercept and gradient was included in this version as suggested by the Reviewer 1. We believe an extended discussion is merited and is properly placed in the Discussion section as the use of simple ratios, as has been performed previously [Barber et al. Dev Med Child Neurol 2011, 53(6):543-548] can lead to an important misunderstanding of the dataset.

P17, row 44-45, please rephrase the following sentence in order to make the purpose and meaning more clear; "It is also possible that considering GH deficiency is common in individuals with CP"

Reply: This has been updated to: ‘Considering that GH deficiency is common in individuals with CP[25], GH level may be…’

Overall in this section of the paper you might want to omit the wording "in this Study" at some instances in order to enhance the language.

STATISTICS, RESULTS DISCUSSION

In the ANCOVAs was age only included "up to 17" or was the actually age in years for the different subjects being utilized in the analyzes? Actual age should be investigated.
Reply: Age is a continuous variable and used for all subjects as a covariable in the analysis as stated in the manuscript.

Table 1

Change headings in table to group with CP etc

Reply: The table heading has been changed to group with CP.