Author’s response to reviews

Title: Four years' follow-up changes of physical activity and sedentary time in women undergoing Roux-en-Y Gastric Bypass surgery and appurtenant children

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Paper title

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Editor Comments

Please modify p=0.000 values to p<0.001 where appropriate in Table 3. Otherwise I have no comments other than those made by the reviewers.

Answer

We have now changed p-values to p<0.001 where appropriate in Table 3.

Reviewer reports:

Antonio Valezi (Reviewer 1): Congratulation for your very well designed study and long follow up. This research is about a very well studied matter.
Answer

Thank you very much for those kind words.

Adam J Reid (Reviewer 2): The opportunity to review this manuscript is much appreciated and the work of Dr. Berglind et al. is interesting indeed. Overall, the study is presented as a descriptive study with subject selection variability, lack of statistical power, data collection issues, and absence of a control group. Regardless, the aims of this study are clearly defined. One of the aims of the study is to objectively evaluate physical activity changes in subjects undergoing weight loss surgery and their children, utilizing accelerometer data over an extended period of time. Furthermore, the study assesses physical activity guideline achievement in women and children after maternal weight loss surgery. It is felt that the aims of this study are achieved with appropriate consideration of the above limitations.

Subjective physical activity data is noted to contradict objective activity data in this patient population and the challenges associated with obtaining sophisticated accelerometer data is illustrated. As suspected, great variability in objectively measured activity levels among weight loss surgery patients is presented. This inconsistency may also be identified when evaluating for a potential halo effect for bariatric surgery. The activity of the subjects' children is evaluated in this unique opportunity to observe behavioral changes that may develop due to frequent engagement and interaction with a weight loss surgery patient, but it is difficult to apply a comparative conclusion. It is noted in the discussion that objectively measured physical activity decreases with age in children starting at the age of five and it may be worthwhile to mention this previously noted decline in the conclusion.

A few questions for the authors. Do the objective physical activity and sedentary times presented follow the norm for the age changes presented in this study? Perhaps the identified physical activity decline among patients' children is less than that observed in the general population thus potentially supporting a halo effect. Is there any correlation between the patients and their own children? In other words, how does the objective physical activity data of patient "X" compare to the data gathered on her own child "x"? Do patients who meet the current physical activity guidelines have children who meet their physical activity guidelines? Answers to these questions may not be achieved with this study but could provide a path to support the halo effect with objective data in the future. Your reflection is much appreciated.

Answer

Thank you for your comments and highlighting some aspects of our studies that need further explanations.

Reviewer comment
Do the objective physical activity and sedentary times presented follow the norm for the age changes presented in this study?

Answer

On average, we detect a decrease of 13.2 of MVPA min/day. That is an 18% decline in MVPA (4.5% decline/year). It is difficult to find objectively measured MVPA over time in similar aged populations. However, this 2107 publication show similar trends:

http://bjsm.bmj.com/content/early/2017/02/05/bjsports-2016-096933

Here, the decline in MVPA is 5.7%/year over 8 years, from 75.5 min/day at age 7 and 41.0 min/day at age 15, which is fairly equal to findings in our paper.

Reviewer comment

Do patients who meet the current physical activity guidelines have children who meet their physical activity guidelines?

Answer

We have a small data set and find no such correlation (statistically significant) between mother’s levels of MVPA or achieving PA guidelines (>60min/day for adults and >60min/day for children) and children’s levels of MVPA. Meta-analysis data has shown that such relationships are relatively weak for objectively measured MVPA:


Thus, it may require a larger study sample than ours to answer such a question.

Tobias Hermann Zingg, MD, FACS (Reviewer 3): Thank you for the opportunity to review this manuscript, in which the authors describe a cohort of 30 women and their 40 appurtenant children with respect to their physical activity and sedentary time at three time-points, 3 months before, 9 months after and 48 months after Roux-en-Y gastric bypass.

They found no difference in physical activity or sedentary time among the mothers, but observed a significant decrease in physical activity and a significant increase in sedentary time in their children. Only about a third of study subjects (mothers or children) meet the current guidelines on physical activity at 48 months post surgery.
The manuscript is well written, the results interesting and it's novelty being the long period of follow-up with objective measures. It should in my opinion be suitable for publication after a few points have been addressed.

Major comments:

Reviewer comment

It's very surprising to read that none of the mothers in this study had type II diabetes, even 3 months before surgery (Results section, line 23). I think this should be mentioned and discussed at some point in the Discussion section.

Answer

T2D prevalence in our sample is substantially lower than in other larger samples of Swedish patients undergoing RYGB:


This may imply that this is a subset of patients that are “healthier than” the “normal” RYGB patient. We have now added the following text to the discussion on page 11:

“Seventh, the low prevalence of type 2 diabetes in our sample implies a healthier population compared to the typical RYGB patient.”

Reviewer comment

The last paragraph of the Methods section should belong to the Results section. Please reconcile.

Answer

We have now moved the sensitivity analyses section to the results section according to your suggestion.

Reviewer comment

There was a very high drop-out rate. Why were accelerometer data available for all three time points in only less than 50% of study subjects? Is there a reason to believe that physical activity and sedentary time was different in those with unavailable data? Please comment.
Answer

Participating in the PA data collection and other procedures of the data collection (weighing, questionnaires etc.) is quite time consuming and may be one factor to why families dropped out over time. If we compare to those who had PA data at 3 months before and 9 months after RYGB (same sample with 56 women), we see now meaningful differences in MVPA and other activity variables:

http://www.soard.org/article/S1550-7289(14)00412-2/abstract

For example:

Mothers in this study, MVPA min/day

Mothers in Berglind et al 2015, MVPA min/day

3 months pre-RYGB

34.5

32.9

9 months post-RYGB

36.0

34.3

Minor comments:

Reviewer comment

No short title required, please remove.

Answer

We have now removed the short title from the title page.

Reviewer comment
Acknowledgements should be removed from Title page. Please reconcile with Acknowledgments at the end of the document, which are different from these on the Title page in the current version.

Answer

Thanks’ for highlighting this discrepancy. We have now changed the acknowledgements from the title page to the end of the main document:

“Acknowledgments: We would like to thank the staff involved in this study from the five hospitals, Danderyd Hospital, Ersta Hospital, Uppsala University Hospital, Örebro University Hospital, and St. Görans Hospital, for their help in recruiting study participants and to the study participants that participated in the data collection.”

Abstract:

Reviewer comment

Please combine Background and Objectives to one only Section "Background".

Answer

We have now collapsed Background and Objectives to Background.

Reviewer comment

"MVPA" needs explanation since not used before in the abstract.

Answer

Thanks’ for spottinmg this. We have now changed this in the abstract:

“moderate to vigorous PA (MVPA)”

Reviewer comment

Please provide Key Words after Abstract.
Answer

We have now added the following after the abstract

“Key words
Physical activity, bariatric surgery, children, Roux-en-Y Gastic Bypass, longitudinal”

Reviewer comment

"What is already known about this subject?" and "What does this study add to the subject?", although interesting and helpful to the reviewer, are not in accordance with the required manuscript format. Please remove this section.

Answer

We have now removed this section from the main document

Background:

Reviewer comment

Please replace "Introduction" with "Background".

Answer

We have now done so on page 1:

“Background”

Reviewer comment

Line 13: physiologic and physiological: what is the difference?

Answer
Thanks’ for highlighting this mistake, now changed to:

“physiologic and psychological”

Reviewer comment
Line 26: higher levels of PA .... HAVE been ...

Answer
Now changed to:

“Higher levels of PA after bariatric surgery have been…”

Methods:
Reviewer comment
Please provide details on Accelerometer manufacturer (line 8)

Answer
We have now added the following:

“(Actigraph)”

Results:
Reviewer comment
Line 5 ON THE contrary.

Answer
We have now changed to the following:

“On the contrary,”
Reviewer comment

Line 36: remaining, not reaming?

Answer

We have now changed to:

“Fifteen women (50%) increased, whereas 15 women (50%) decreased their time spent in MVPA”

Discussion:

Reviewer comment

Avoid starting two consecutive phrases with "In addition".

Answer

WE have now changed to:

“Furthermore,”

Reviewer comment

Line 15: ...with a reduction in children's lives of PA and INCREASE IN ST nine .... Please reconcile with results!

Answer

We have now added numbers to the text and changed to the following:

“with a reduction in children’s levels of MVPA (-11 min/day) and increases in ST (+ 53.7 min/day) nine months after maternal surgery”

Reviewer comment
Line 31: use "may" or "could" instead of "can".

Answer

We have now changed to:

“may”

Reviewer comment

Please add Conclusions heading.

Answer

We have now added a heading:

“Conclusions”

Reviewer comment

The last phrase should be revised. For example: This indicates ....

Answer

We have now changed the last phrase to:

“This implies the need to incorporate effective pre- and post-surgery PA counselling specific to this population.”