To the Editorial Board of *PLOS ONE*,

We want to thank the Reviewers and Editorial staff for their helpful comments and the opportunity to revise our manuscript. We respond to the critiques below in a point-by-point fashion and include text from the revised manuscript highlighted in yellow.

**Reviewer 1:** In this brief article, the authors reported an R package (cgmanalysis: Clean and Analyze Continuous Glucose Monitor Data) for analyzing data from continuous glucose monitor (CGM). The cgmanalysis package aims to provide an open-source solution to CGM data analysis and management. The functions implemented for this package are fairly straightforward. Below are my comments.

1. As the authors noted, the lack of a graphical user interface (GUI) may hinder the adoption of the developed functions. Since the functions are developed in R, the authors can consider building an R shiny app (<https://shiny.rstudio.com/>) as a simple user interface.

*We agree with the reviewer that an R Shiny app is a simple way to create a user interface. We have begun writing a Shiny app, although it will not be fully functional in time for this publication.*

2. The authors should consider comparing the functionalities provided by existing proprietary software for CGM visualization and analyses (such as iPro 2, Carelink 670G, Dexcom, Diasend) and those implemented in cgmanalysis in the Discussion section.

*Per the Editor’s request, we have clarified the aims of this paper, which were not simply to compare functionalities of cgmanalysis to proprietary software, but to make software and algorithms freely available to researchers for CGM analysis.*

*From the abstract:*

Accordingly, there is a need for a standardized, free, open-source approach to CGM data management and analysis. A package titled cgmanalysis was developed in the free programming language R to provide a rapid, easy, and consistent methodology for CGM data management, summary measure calculation, and descriptive analysis.  
  
3. In the current Figures 4a-4d, the scale of Tukey AGP and those of other proprietary software were different, making the visual comparison difficult.

*Per the Editor’s request – we have kept the figure scales unaltered.*

4. The figure legend for interquartile range (blue) in Figures 1 and 4a-4d were not showing up properly.

*This appears to have been a Mac vs. PC issue as the blue IQR rendered correctly on a Mac, but we have fixed this.*

**Reviewer #2:** The authors develop an R package for managing and exploratory analysis of continuous glucose monitor data. Here are my major comments.  
  
1. I think the major issue is that the manuscript lacks example codes. As a paper for presenting R packages, it is essential to include an example with all the codes to be presented in the main manuscript in a step-by-step fashion. In current version, it’s hard to tell what functions (with what arguments) are used to manipulate data or produce the figures. In addition, as a data management software, it would also be important to show what formats the example data are in before and after applying the functions.

*Thank you for the feedback. Example code has now been added to the manuscript (on pages 7-9). The package documentation and new-user guide provide more detailed information, and the raw code can be viewed by downloading the package. Also, additional examples of pre- and post-cleaning data formats are available on figshare.*

*Example code for data cleaning (page 7):*

cleandata(“path/to/inputdirectory”,“path/to/outputdirectory”,

removegaps = FALSE, gapfill = TRUE, maximumgap = 30)

*For calculating summary measures (page 8):*

cgmvariables(“path/to/inputdirectory”,“path/to/outputdirectory”)

cgmvariables(“path/to/inputdirectory”, “path/to/outputdirectory”,

daystart = 8, dayend = 23, magedef = “2sd”)

*For generating plots (page 9):*

cgmreport(“path/to/inputdirectory”, “path/to/outputdirectory”, yaxis = c(70,300))

2. The R package name is buried in the manuscript. I think the package name should be included in both title and abstract so that readers can easily seen.

*This is an excellent point, and the title and abstract have been fixed accordingly.*

*From the abstract:*

Accordingly, there is a need for a standardized, free, open-source approach to CGM data management and analysis. A package titled cgmanalysis was developed in the free programming language R to provide a rapid, easy, and consistent methodology for CGM data management, summary measure calculation, and descriptive analysis.

3. The analysis functions included in the package are all exploratory but no formal statistical analysis tools. This should be made clear.

*We have clarified that the package is for descriptive analysis and data management only (please see above comment).*  
  
4. I do not find mathematical details or reference for the methods used in the functions, e.g. Turkey smoothing, Loess-smoothed average.

*We have added references for these methods.*

*For running median smoothing:*

Tukey, J.W., *Exploratory data analysis*. First edition, [2020 edition]. ed. Pearson modern classic. 2020, Hoboken, New Jersey: Pearson.

*For Loess smoothing:*

Chambers, J.M. and T. Hastie, *Statistical models in S*. 1992, Chapman & Hall/CRC: Boca Raton, Fla.

Wood, S.N., *mgcv: GAMs and generalized ridge regression for R.* R news, 2001. **1**(2): p. 20-25.

O'Sullivan, F., B.S. Yandell, and W.J. Raynor, *Automatic Smoothing of Regression Functions in Generalized Linear Models.* Journal of the American Statistical Association, 1986. **81**(393): p. 96-103.  
  
5. Another minor formatting issues: the legend and plots are all separate in the figures.

*We have not changed this, per the editor’s comments.*

**Editor:**

* Make sure to incorporate the title of the package in the title of the manuscript.

*We have fixed the title and abstract to include the name of the package.*

* My review of the manuscript is that you are trying to provide free software for researchers to use and modify as needed since the algorithms for the available software is not freely available.  However, this does not seem that it was as clear to either reviewer, so I suggest that you make that clearer.

*We have clarified that the package is intended for data management and descriptive analysis. Please see reviewer comments above.*

* I agree that example codes would make it easier to understand your program but if you do not feel that this is a reasonable request, please explain.

*We have added some code examples to the manuscript, although not in great detail. More detailed examples are available in the new-user guide on GitHub and in the package documentation. Please see reviewer comments above.*

* Please provide references for statistical methods used.

*We have added references for Tukey running median smoothing and Loess smoothing.*

* Please make sure the figure legends are legible.

*Figure legends should now render correctly irrespective of operating system.*

* Please disregard comments about placement of figure legends, scale of the figures and comparisons of functionality in the discussion (see comment about making purpose clearer).  Also, Font size/type varies from figure to figure and needs to be standardized.

*We are unfortunately unable to standardize font size and type for all figures. Font size and type are the same for all figures generated by our package, but we are not able to change the proprietary software fonts or alter our package’s output to match them.*

We appreciate the helpful comments and the opportunity to submit our revised manuscript. Thank you also for the great time and care the reviewers and editor have put into this review.

Sincerely,

Tim Vigers and Laura Pyle, on behalf of all co-authors.