Comments from Referee:

**Referee:3 General comments**

The submitted manuscript uses correspondence analysis (CA) to examine the relationship of when certain foods are eaten, and how these patterns differ among different diabetes groups. They find that unhealthy foods such as beer, ice cream and pudding are consumed later in the day.

**RESPONSE:**

1. **The limitations and strengths.**

Unable to determine strengths at this time.  
Weakness include very poor quality plots, and more information on how CA works.  
Please see details in the next section

**RESPONSE:** We are sincerely sorry that previous figures were not readable. Figures were reproduced and uploaded according to the resolution requirements of the journal.

More details of how CA works and the interpretation can be found in the literature as shown in Husson, F., et al [1] or more technical details are referred to the textbook by Greenacre, M. [2] We provided more detailed explanation of how CA works in the response to your next comment as well as in the current revised manuscript.

[1] Husson, F., Lê, S. and Pagès, J. (2017) Exploratory Multivariate Analysis by Example Using R. CRC press.

[2] Greenacre,M. (2017) Correspondence analysis in practice Chapman and Hall, New York.

1. **Comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.**

Methods: Although I am familiar with principal components analysis, CA appears to be quite different from PCA in that the 1st two factors are not interpreted. Or are they? Also, having researched some of the CA techniques, I think a table showing the times of eating and the foods should be made, perhaps as a supplementary table.  
  
Tables and Figures: The figures are incredibly hard to read. Because of this, I cannot follow the results/manuscript.

**RESPONSE:** Thanks for your comments. We add more details about how CA works as follows. CA is a statistical technique to explore relationships between categorical variables in a two-dimensional contingency table. In the current analysis context, CA was used as a tool to visually depict the relationship between food groups and time of consumption. CA was the technique to flag up those food groups that have a similar or different “profile” across time categories or , symmetrically, those times of day that have a similar or different “profile” across food groups. In particular “profile” indicates the relative frequency of the consumption of one food across different time in the day (or, symmetrically, the relative frequency of consumption of different foods at one specific time period) and what CA measures is its departure from the average food (or time of day) profile. One simple example is that if about 77.8% of all foods were consumed during the day time (earlier than 8 pm), but only 23.5% of beer consumption were recorded during the day time, then we say beer has a time “profile” different from the average food profile with respect to time of day of consumption and, in particular, beer is associated to evening/night consumption.

CA can produce biplots to visually show the chi-square deviation (called inertia) of food (and time) profiles from the average profile, measured by the relative frequencies. These biplots use the first two most informative dimensions to show the inertia of the contingency table. The horizontal axis of the biplot represents the direction along which the contingency table rows and columns show their greatest deviations from the average row or column profile . The vertical axis represents the direction, perpendicular to the first, having the second largest deviations. There are two percentage labels for each axis which indicate how much of the total inertia were explained along that axis. The sum of the two percentages is lower than 100%, the remaining inertia cannot be shown when reducing to 2 dimensions.

The origin in each biplot is the average profile of all points in the plot, while the length of the vector from origin to each profile point represents its deviation from the average profile. The distance between row (food) and column (time slots) profile points and the direction in which they lie away from the origin is indicating how they are associated with each other. The potential association is greater if 1) points are located in similar directions away from the origin and 2) the farther they are from the origin.

1. **Dear all, I could not read the figures.**

**RESPONSE:** We are sincerely sorry that previous figures were not readable. Figures were reproduced and uploaded according to the resolution requirements of the journal.