# Initial Analysis Results

## Activities:

1. Average calories burned during activities is 207. Minimum was 43 and max is 1500. Outliers are more towards the higher side.
2. AverageHeartRate in activities is 110 bpm, min is 82, max was 172.
3. Most calories seemed to be burned in the hrz out of range, then fatburn, then cardio, then peak.
4. Most of the time spent in an activity is spent below the heart rate zone range to be counted as active zone minutes.
5. Indication that is the duration of activities is fairly short.
6. Activities increases towards the end of the day, and on weekends.

Things to explore:

1. Hrz\_outofzone\_calories correlation with steps, duration, and activeduration
2. Heart range zones exponential relationship with fatburn calories.
3. Outlier study
4. Why is hrz cardio minutes < 20 and calories < 80, but has the highest correlation with calories out of all the other zones.
5. Analyze the correlation between activities time and time of waking.
   1. Explore late day activities, gym, walking, class, hang out?
   2. Keep in mind the increase of activities on the weekend.

## HRV, BR, skinTemp

1. All ranges are within healthy ranges, and are normally distributed.
2. Daily and deep rmssd skewed to the right, mean is less than the median.

Things to explore:

1. Outliers study.
2. General multivariate correlation.

## Sleep:

1. Level counts are normally distributed. Some are spread apart, might indicate some kind of relationship.
2. Asleep, wake, and restless counts were not worthy of looking at distributions, but could be good indications for outliers.
3. During the 200-300 day period we saw the highest amount of light sleep and generally the lines seem to be correlated.
4. There are more outliers in the revitalization score, no maximum for any of the scores were ever hit.
5. Around the 270 day mark, rem and deep sleep duration crosses, which in total only occurs only once or twice during the entire data set.
6. There are also spikes towards worsening sleep, partly indicated by the “asleep” lines.
7. In terms of transitions between the different cycles, from deep sleep there is a 78% chance we go to light, and 16% chance waking straight up. Most often light cycle is the middle man between cycles.

Things to explore:

1. Study relationships mentioned in point 1.
2. Study asleep, wake, and restless counts for potential outlier detection, and check for correlation to other outliers in other areas.
3. Study 200-300 day period, especially the 270 day mark.
4. Study the higher range of sleep score days, and outliers of revitalization score.
5. Loosely check for changes in transitions when studying other parts of the data.

## Google form:

1. Sleep score recordings during the google form phase shows a somewhat low distribution.
2. During the survey answers, I indicated that most of my days were low in motivation, lazy, tired. Even less were great and about the same felt great.

Things to explore:

1. Focus on mid / bad days to find correlations. Use statistical tests to discern quantifiable differences.

## MyFitnessPlan:

1. See heatmap

Things to explore:

1. Explore basic correlations between calorie meals and other things.

## Stress

1. Responsiveness definitely lagging behind the other scores.
2. All scores are normal.

Things to explore:

1. Explore low responsiveness correlations with other data.