Diet and Sleep

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## Background

This study seeks to assess the bi-directional association between the quality of one’s sleep and different components of one’s diet.

## Data

Data from CM and DQ were combined for the purpose of this study. Two sets of data were collected, one for each direction of the analysis. In order to establish a temporal order, the event associated with the outcome variable was ensured to have occurred after the event associated with the predictor variable – for example, to assess the influence a subject’s diet may have had on their sleep, the investigators recorded what they ate before they went to sleep.

For the purpose of this analysis, both datasets will be subsetted to just records that indicate the “Aligned” condition.

## Variables

In investigating the influence that one’s diet may have on their sleep, we are interested in the following predictors: energy, food weight (no beverages), energy density, protein, fat, carbohydrate, plant protein, animal protein, fiber, calcium, magnesium, sodium, zinc, vitamin B6, vitamin B12, saturated fat, unsaturated fat, vitamin D, fruits, vegetables, fruits and vegetables, eggs, nuts, dairy, and added sugar. We are interested in the following outcome variables that measure sleep: sleep efficiency, total sleep time, wake after sleep onset, and sleep fragmentation index.

In investigating the influence that one’s sleep may have on their diet, we are interested in the following predictors: sleep efficiency, total sleep time, wake after sleep onset, and sleep fragmentation index. The following variables will serve as predictors: energy, food weight (no beverages), energy density, protein, fat, carbohydrate, plant protein, animal protein, fiber, calcium, magnesium, sodium, saturated fat, unsaturated fat, fruits, vegetables, fruits and vegetables, eggs, dairy, and added sugar.

In both analysis directions, we will also assess the significance of age, sex, and BMI as covariates. Sex is analyzed as a categorical covariate, while age and BMI are analyzed as continuous covariates.

## Methodology

We will construct linear mixed effect models to conduct a preliminary assessment of the relationships between all variables of interest. First, we will regress the outcome variable of interest on one predictor and the three covariates, adding a random intercept for subject ID. We will then evaluate the significance of the coefficients associated with each of the three covariates. If the coefficient is determined to not be significant (i.e., p > 0.05), it will be removed from the model. The truncated model will then be run again and its result saved.

## Results

### Diet and Sleep

The following table presents the results of regressing sleep outcome variables on diet predictors:

Model 1: se vs. en  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.778e+01 3.127e+00 2.699e+01 24.875 < 2e-16 \*\*\*  
 age 3.346e-01 1.019e-01 2.221e+01 3.283 0.00337 \*\*   
 en 9.396e-04 5.530e-04 1.943e+02 1.699 0.09089 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 2: tst vs. en  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 4.049e+02 1.595e+01 1.133e+02 25.393 <2e-16 \*\*\*  
 en 8.864e-03 7.061e-03 1.459e+02 1.255 0.211   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 3: waso vs. en  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 5.761e+01 8.210e+00 3.959e+01 7.017 1.88e-08 \*\*\*  
 age -8.216e-01 2.638e-01 3.176e+01 -3.114 0.00389 \*\*   
 en -5.052e-05 1.606e-03 1.864e+02 -0.031 0.97493   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 4: sfi vs. en  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.982e+01 2.148e+00 1.320e+02 9.226 5.97e-16 \*\*\*  
 en -1.089e-03 8.381e-04 1.975e+02 -1.299 0.195   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 5: se vs. food\_wt\_f  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.818e+01 3.080e+00 2.550e+01 25.385 < 2e-16 \*\*\*  
 age 3.352e-01 1.018e-01 2.231e+01 3.291 0.00329 \*\*   
 food\_wt\_f 1.284e-03 8.417e-04 1.746e+02 1.526 0.12883   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 6: tst vs. food\_wt\_f  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 4.216e+02 1.418e+01 8.466e+01 29.726 <2e-16 \*\*\*  
 food\_wt\_f 1.449e-03 1.050e-02 1.142e+02 0.138 0.89   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 7: waso vs. food\_wt\_f  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 61.416735 8.080055 36.563518 7.601 4.91e-09 \*\*\*  
 age -0.807433 0.264826 31.670512 -3.049 0.00461 \*\*   
 food\_wt\_f -0.003595 0.002406 164.262271 -1.495 0.13696   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 8: sfi vs. food\_wt\_f  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 20.310177 1.990015 108.851814 10.21 <2e-16 \*\*\*  
 food\_wt\_f -0.002307 0.001289 198.717927 -1.79 0.075 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 9: se vs. ed  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.0233 3.4329 32.5677 23.019 < 2e-16 \*\*\*  
 age 0.3433 0.1061 22.5576 3.234 0.00373 \*\*   
 ed 0.2640 0.7961 197.7921 0.332 0.74055   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 10: tst vs. ed  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 405.29 19.00 138.60 21.335 <2e-16 \*\*\*  
 ed 10.52 10.39 173.35 1.012 0.313   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 11: waso vs. ed  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 49.8110 8.8970 47.4215 5.599 1.06e-06 \*\*\*  
 age -0.7925 0.2673 31.6596 -2.965 0.00572 \*\*   
 ed 3.9871 2.2963 196.2153 1.736 0.08407 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 12: sfi vs. ed  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 16.0641 2.4256 155.5603 6.623 5.43e-10 \*\*\*  
 ed 0.8651 1.1902 193.9987 0.727 0.468   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 13: se vs. prot  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.861e+01 3.105e+00 2.512e+01 25.316 < 2e-16 \*\*\*  
 age 3.380e-01 1.034e-01 2.229e+01 3.268 0.00348 \*\*   
 prot 1.090e-02 9.676e-03 1.939e+02 1.127 0.26127   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 14: tst vs. prot  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 407.0538 13.2037 101.5105 30.829 <2e-16 \*\*\*  
 prot 0.1732 0.1231 148.5694 1.407 0.162   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 15: waso vs. prot  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 56.22149 7.98031 36.49936 7.045 2.66e-08 \*\*\*  
 age -0.82550 0.26317 31.76340 -3.137 0.00367 \*\*   
 prot 0.01480 0.02791 184.49558 0.530 0.59663   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 16: sfi vs. prot  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 19.00630 1.86936 100.75936 10.167 <2e-16 \*\*\*  
 prot -0.01544 0.01464 197.74836 -1.054 0.293   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 17: se vs. fat  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 78.40476 3.10100 25.38787 25.284 < 2e-16 \*\*\*  
 age 0.33894 0.10332 22.43836 3.281 0.00335 \*\*   
 fat 0.01447 0.01043 197.66796 1.387 0.16700   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 18: tst vs. fat  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 403.2663 12.9511 114.9518 31.138 <2e-16 \*\*\*  
 fat 0.2412 0.1362 172.1464 1.771 0.0784 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 19: waso vs. fat  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 55.12574 8.04934 36.25783 6.848 5.01e-08 \*\*\*  
 age -0.82562 0.26563 31.36744 -3.108 0.00398 \*\*   
 fat 0.02996 0.03039 196.58836 0.986 0.32551   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 20: sfi vs. fat  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.852757 1.821559 99.021341 9.801 2.97e-16 \*\*\*  
 fat -0.003484 0.015660 192.024017 -0.222 0.824   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 21: se vs. cho  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.877e+01 3.116e+00 2.491e+01 25.277 < 2e-16 \*\*\*  
 age 3.339e-01 1.038e-01 2.204e+01 3.218 0.00396 \*\*   
 cho 4.207e-03 4.678e-03 1.927e+02 0.899 0.36965   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 22: tst vs. cho  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 408.59805 15.03360 101.16314 27.179 <2e-16 \*\*\*  
 cho 0.06337 0.05886 138.34962 1.077 0.283   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 23: waso vs. cho  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 59.219100 8.039452 36.756839 7.366 9.65e-09 \*\*\*  
 age -0.807243 0.265062 31.870078 -3.045 0.00463 \*\*   
 cho -0.009101 0.013471 183.887736 -0.676 0.50017   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 24: sfi vs. cho  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 21.329844 2.061210 121.051723 10.348 <2e-16 \*\*\*  
 cho -0.016217 0.006992 198.212916 -2.319 0.0214 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 25: se vs. prot\_plant  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.2768 3.0848 23.2017 25.699 < 2e-16 \*\*\*  
 age 0.3439 0.1058 22.8607 3.250 0.00355 \*\*   
 prot\_plant 0.1130 0.1720 191.8689 0.657 0.51206   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 26: tst vs. prot\_plant  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 420.049 7.396 43.442 56.795 <2e-16 \*\*\*  
 prot\_plant 2.041 2.307 192.587 0.885 0.377   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 27: waso vs. prot\_plant  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 55.8842 7.5293 32.1206 7.422 1.87e-08 \*\*\*  
 age -0.8047 0.2578 31.5257 -3.121 0.00384 \*\*   
 prot\_plant 0.6942 0.5024 197.8817 1.382 0.16857   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 28: sfi vs. prot\_plant  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.7432 1.3491 39.3651 13.152 5.47e-16 \*\*\*  
 prot\_plant -0.1086 0.2554 186.9258 -0.425 0.671   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 29: se vs. prot\_ani  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.11199 3.06657 23.16536 25.798 < 2e-16 \*\*\*  
 age 0.33916 0.10478 22.50977 3.237 0.00371 \*\*   
 prot\_ani 0.08005 0.08628 197.10650 0.928 0.35465   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 30: tst vs. prot\_ani  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 419.3179 9.3826 67.9206 44.691 <2e-16 \*\*\*  
 prot\_ani 0.6606 1.1143 157.9105 0.593 0.554   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 31: waso vs. prot\_ani  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 56.2885 7.6933 32.9918 7.317 2.13e-08 \*\*\*  
 age -0.8268 0.2621 31.8391 -3.154 0.0035 \*\*   
 prot\_ani 0.2231 0.2490 189.0042 0.896 0.3713   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 32: sfi vs. prot\_ani  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.46060 1.50119 56.44088 11.631 <2e-16 \*\*\*  
 prot\_ani 0.01702 0.13017 196.15066 0.131 0.896   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 33: se vs. fiber  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 78.86595 3.08609 24.34760 25.555 < 2e-16 \*\*\*  
 age 0.33924 0.10356 22.15363 3.276 0.00343 \*\*   
 fiber 0.03562 0.03856 196.36112 0.924 0.35671   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 34: tst vs. fiber  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 421.0525 12.0950 90.9341 34.812 <2e-16 \*\*\*  
 fiber 0.1119 0.4967 151.5100 0.225 0.822   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 35: waso vs. fiber  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 58.47931 7.92629 35.49086 7.378 1.15e-08 \*\*\*  
 age -0.81989 0.26392 31.79086 -3.107 0.00397 \*\*   
 fiber -0.04972 0.11146 188.66119 -0.446 0.65604   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 36: sfi vs. fiber  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 19.63545 1.73988 86.81999 11.286 <2e-16 \*\*\*  
 fiber -0.10091 0.05777 196.26085 -1.747 0.0823 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 37: se vs. ca  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.878e+01 2.982e+00 2.281e+01 26.413 < 2e-16 \*\*\*  
 age 3.313e-01 1.015e-01 2.181e+01 3.265 0.00357 \*\*   
 ca 1.096e-03 7.858e-04 1.937e+02 1.395 0.16450   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 38: tst vs. ca  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 4.048e+02 1.131e+01 8.649e+01 35.781 <2e-16 \*\*\*  
 ca 1.924e-02 9.906e-03 1.434e+02 1.943 0.054 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 39: waso vs. ca  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 5.812e+01 7.775e+00 3.358e+01 7.476 1.22e-08 \*\*\*  
 age -8.149e-01 2.636e-01 3.190e+01 -3.091 0.00412 \*\*   
 ca -8.454e-04 2.276e-03 1.862e+02 -0.372 0.71068   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 40: sfi vs. ca  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.833e+01 1.703e+00 8.136e+01 10.763 <2e-16 \*\*\*  
 ca -7.998e-04 1.191e-03 1.977e+02 -0.672 0.503   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 41: se vs. mg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.823e+01 3.096e+00 2.550e+01 25.266 <2e-16 \*\*\*  
 age 3.376e-01 1.027e-01 2.248e+01 3.286 0.0033 \*\*   
 mg 4.344e-03 2.850e-03 1.769e+02 1.524 0.1293   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 42: tst vs. mg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 411.22501 13.11207 81.27073 31.362 <2e-16 \*\*\*  
 mg 0.03703 0.03517 113.79095 1.053 0.295   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 43: waso vs. mg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 58.505990 8.032953 36.531583 7.283 1.28e-08 \*\*\*  
 age -0.819974 0.263944 31.720395 -3.107 0.00397 \*\*   
 mg -0.003211 0.008170 163.949586 -0.393 0.69480   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 44: sfi vs. mg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 19.977700 1.894718 99.713987 10.544 <2e-16 \*\*\*  
 mg -0.007428 0.004362 198.623736 -1.703 0.0902 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 45: se vs. na  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 7.824e+01 3.040e+00 2.460e+01 25.735 < 2e-16 \*\*\*  
 age 3.376e-01 1.006e-01 2.151e+01 3.357 0.00291 \*\*   
 na 3.777e-04 2.518e-04 1.822e+02 1.500 0.13533   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 46: tst vs. na  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 4.111e+02 1.355e+01 9.208e+01 30.350 <2e-16 \*\*\*  
 na 3.250e-03 3.171e-03 1.269e+02 1.025 0.307   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 47: waso vs. na  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 6.038e+01 8.010e+00 3.674e+01 7.538 5.75e-09 \*\*\*  
 age -8.161e-01 2.627e-01 3.183e+01 -3.107 0.00396 \*\*   
 na -8.093e-04 7.239e-04 1.729e+02 -1.118 0.26517   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 48: sfi vs. na  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.889e+01 1.918e+00 1.041e+02 9.851 <2e-16 \*\*\*  
 na -3.571e-04 3.856e-04 1.989e+02 -0.926 0.356   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 49: se vs. zn  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.77175 3.16361 25.34869 25.215 < 2e-16 \*\*\*  
 age 0.34094 0.10577 22.59435 3.223 0.00382 \*\*   
 zn -0.01943 0.06608 192.71958 -0.294 0.76905   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 50: tst vs. zn  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 413.5199 12.1464 120.7560 34.045 <2e-16 \*\*\*  
 zn 0.8437 0.8845 192.1861 0.954 0.341   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 51: waso vs. zn  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 55.7423 7.9880 36.7773 6.978 3.13e-08 \*\*\*  
 age -0.8190 0.2641 31.8095 -3.101 0.00402 \*\*   
 zn 0.1447 0.1932 197.8688 0.749 0.45473   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 52: sfi vs. zn  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 16.58092 1.71672 86.06494 9.659 2.23e-15 \*\*\*  
 zn 0.08441 0.09797 187.17062 0.862 0.39   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 53: se vs. vit\_b6  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 78.8025 3.1023 24.2172 25.402 < 2e-16 \*\*\*  
 age 0.3443 0.1052 22.8414 3.273 0.00336 \*\*   
 vit\_b6 0.2849 0.2333 196.5840 1.221 0.22356   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 54: tst vs. vit\_b6  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 423.6769 9.6000 76.0106 44.133 <2e-16 \*\*\*  
 vit\_b6 -0.1365 3.0984 182.3398 -0.044 0.965   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 55: waso vs. vit\_b6  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 59.0594 7.8729 33.9484 7.502 1.06e-08 \*\*\*  
 age -0.8288 0.2655 31.5861 -3.121 0.00383 \*\*   
 vit\_b6 -0.5904 0.6810 197.5254 -0.867 0.38701   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 56: sfi vs. vit\_b6  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 18.1022 1.5028 58.1713 12.046 <2e-16 \*\*\*  
 vit\_b6 -0.2370 0.3492 191.2500 -0.679 0.498   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 57: se vs. vit\_b12  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.14296 3.10897 23.74474 25.456 < 2e-16 \*\*\*  
 age 0.34567 0.10605 22.93279 3.260 0.00346 \*\*   
 vit\_b12 0.05270 0.07079 193.89471 0.744 0.45753   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 58: tst vs. vit\_b12  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 421.3947 8.0304 54.0360 52.475 <2e-16 \*\*\*  
 vit\_b12 0.3841 0.9429 187.2311 0.407 0.684   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 59: waso vs. vit\_b12  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 57.86995 7.77729 33.29664 7.441 1.42e-08 \*\*\*  
 age -0.82598 0.26436 31.91411 -3.124 0.00378 \*\*   
 vit\_b12 -0.04787 0.20719 197.99860 -0.231 0.81753   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 60: sfi vs. vit\_b12  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.42066 1.38458 44.02610 12.582 3.53e-16 \*\*\*  
 vit\_b12 0.02813 0.10534 188.71958 0.267 0.79   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 61: se vs. sfa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.19393 3.10070 24.19422 25.541 < 2e-16 \*\*\*  
 age 0.33971 0.10455 22.26673 3.249 0.00364 \*\*   
 sfa 0.01495 0.02919 190.26613 0.512 0.60906   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 62: tst vs. sfa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 405.9001 11.9767 125.9921 33.891 <2e-16 \*\*\*  
 sfa 0.6691 0.3911 194.9015 1.711 0.0887 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 63: waso vs. sfa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 56.01104 7.91774 34.91042 7.074 3.11e-08 \*\*\*  
 age -0.82749 0.26505 31.49459 -3.122 0.00383 \*\*   
 sfa 0.06364 0.08552 196.94904 0.744 0.45767   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 64: sfi vs. sfa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.31803 1.70385 85.55740 10.164 2.24e-16 \*\*\*  
 sfa 0.00944 0.04323 185.15801 0.218 0.827   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 65: se vs. ufa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 78.2019 3.0914 25.1945 25.297 <2e-16 \*\*\*  
 age 0.3397 0.1034 22.6226 3.285 0.0033 \*\*   
 ufa 0.0279 0.0161 197.9268 1.732 0.0848 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 66: tst vs. ufa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 406.4557 12.1827 104.4885 33.363 <2e-16 \*\*\*  
 ufa 0.3404 0.2103 167.5221 1.619 0.107   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 67: waso vs. ufa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 55.19145 8.00505 35.65407 6.895 4.75e-08 \*\*\*  
 age -0.82360 0.26549 31.40059 -3.102 0.00404 \*\*   
 ufa 0.04777 0.04699 195.53428 1.017 0.31058   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 68: sfi vs. ufa  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 18.13177 1.75103 89.63892 10.355 <2e-16 \*\*\*  
 ufa -0.01148 0.02428 192.98427 -0.473 0.637   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 69: se vs. vit\_d  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.34470 3.07885 23.16360 25.771 < 2e-16 \*\*\*  
 age 0.34293 0.10561 22.81960 3.247 0.00358 \*\*   
 vit\_d 0.02816 0.05634 185.27803 0.500 0.61782   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 70: tst vs. vit\_d  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 424.5560 7.5912 48.5835 55.928 <2e-16 \*\*\*  
 vit\_d -0.2281 0.7687 198.5623 -0.297 0.767   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 71: waso vs. vit\_d  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 57.11833 7.66618 32.42800 7.451 1.63e-08 \*\*\*  
 age -0.81842 0.26256 31.81283 -3.117 0.00386 \*\*   
 vit\_d 0.05647 0.16602 194.93293 0.340 0.73410   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 72: sfi vs. vit\_d  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.64326 1.34673 40.15688 13.101 4.38e-16 \*\*\*  
 vit\_d -0.01560 0.08324 182.37827 -0.187 0.852   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 73: se vs. fruit  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.55194 3.05017 22.15896 26.081 < 2e-16 \*\*\*  
 age 0.34316 0.10598 22.92199 3.238 0.00364 \*\*   
 fruit -0.05822 0.33674 196.01334 -0.173 0.86293   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 74: tst vs. fruit  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 419.693 8.131 52.482 51.616 <2e-16 \*\*\*  
 fruit 3.179 4.403 177.358 0.722 0.471   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 75: waso vs. fruit  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 57.49024 7.60674 31.10007 7.558 1.58e-08 \*\*\*  
 age -0.82488 0.26519 32.42705 -3.111 0.00388 \*\*   
 fruit 0.08896 0.98161 197.55323 0.091 0.92788   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 76: sfi vs. fruit  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 18.3108 1.4008 45.5893 13.071 <2e-16 \*\*\*  
 fruit -0.6388 0.4981 191.5294 -1.282 0.201   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 77: se vs. veg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 78.6639 3.0053 22.8608 26.175 < 2e-16 \*\*\*  
 age 0.3445 0.1024 22.0222 3.365 0.00279 \*\*   
 veg 0.4506 0.2596 195.9828 1.735 0.08425 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 78: tst vs. veg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 427.475 8.885 58.539 48.111 <2e-16 \*\*\*  
 veg -2.312 3.372 153.297 -0.686 0.494   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 79: waso vs. veg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 59.7563 7.6605 33.3419 7.801 5.09e-09 \*\*\*  
 age -0.8312 0.2601 31.9661 -3.195 0.00314 \*\*   
 veg -1.1260 0.7500 187.1562 -1.501 0.13498   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 80: sfi vs. veg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 18.8079 1.4287 51.1156 13.16 <2e-16 \*\*\*  
 veg -0.7159 0.3912 196.5671 -1.83 0.0688 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 81: se vs. f\_v  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.0476 3.0645 22.9692 25.795 <2e-16 \*\*\*  
 age 0.3354 0.1050 22.5736 3.194 0.0041 \*\*   
 f\_v 0.2244 0.1926 197.3791 1.165 0.2454   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 82: tst vs. f\_v  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 424.0441 9.7607 69.1047 43.444 <2e-16 \*\*\*  
 f\_v -0.2321 2.4899 154.4518 -0.093 0.926   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 83: waso vs. f\_v  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 58.8142 7.6959 32.6801 7.642 9.06e-09 \*\*\*  
 age -0.8073 0.2633 32.0079 -3.066 0.00438 \*\*   
 f\_v -0.5860 0.5565 189.6291 -1.053 0.29368   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 84: sfi vs. f\_v  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 19.3205 1.5093 60.4095 12.801 <2e-16 \*\*\*  
 f\_v -0.6042 0.2875 196.1087 -2.101 0.0369 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 85: se vs. egg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.6065 3.0408 22.3412 26.180 < 2e-16 \*\*\*  
 age 0.3320 0.1056 23.1233 3.143 0.00453 \*\*   
 egg 0.3064 0.3722 195.3777 0.823 0.41132   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 86: tst vs. egg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 424.721 7.171 37.977 59.225 <2e-16 \*\*\*  
 egg -2.151 4.897 179.408 -0.439 0.661   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 87: waso vs. egg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 57.5851 7.5884 31.0471 7.589 1.47e-08 \*\*\*  
 age -0.8327 0.2645 32.4379 -3.148 0.00352 \*\*   
 egg 0.3619 1.0872 197.7226 0.333 0.73961   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 88: sfi vs. egg  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.3359 1.3254 37.2436 13.079 1.7e-15 \*\*\*  
 egg 0.3678 0.5524 190.5339 0.666 0.506   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 89: se vs. nuts  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.3128 3.0983 22.9645 25.599 < 2e-16 \*\*\*  
 age 0.3445 0.1065 22.8369 3.236 0.00368 \*\*   
 nuts 0.1589 0.2599 197.9897 0.611 0.54172   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 90: tst vs. nuts  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 418.968 6.948 34.683 60.300 <2e-16 \*\*\*  
 nuts 5.458 3.361 167.232 1.624 0.106   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 91: waso vs. nuts  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 56.0858 7.6194 32.1089 7.361 2.22e-08 \*\*\*  
 age -0.8009 0.2617 31.9537 -3.060 0.00445 \*\*   
 nuts 1.0184 0.7501 193.4204 1.358 0.17611   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 92: sfi vs. nuts  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.62699 1.31900 36.42742 13.364 1.3e-15 \*\*\*  
 nuts -0.07602 0.39009 194.67709 -0.195 0.846   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 93: se vs. dairy  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.42820 3.06562 22.70646 25.909 < 2e-16 \*\*\*  
 age 0.33966 0.10544 22.65091 3.221 0.00383 \*\*   
 dairy 0.09718 0.28432 195.30242 0.342 0.73285   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 94: tst vs. dairy  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 410.887 8.514 55.603 48.261 <2e-16 \*\*\*  
 dairy 7.827 3.579 146.701 2.187 0.0304 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 95: waso vs. dairy  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 57.3243 7.6810 31.8694 7.463 1.75e-08 \*\*\*  
 age -0.8245 0.2641 31.8367 -3.121 0.00381 \*\*   
 dairy 0.1627 0.8181 184.6048 0.199 0.84254   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 96: sfi vs. dairy  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 18.1937 1.4409 49.9798 12.626 <2e-16 \*\*\*  
 dairy -0.3977 0.4285 197.5904 -0.928 0.354   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 97: se vs. added\_sugar  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 79.32412 3.06523 22.29272 25.879 < 2e-16 \*\*\*  
 age 0.33153 0.10613 22.73055 3.124 0.00482 \*\*   
 added\_sugar 0.05823 0.06013 182.79927 0.968 0.33409   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 98: tst vs. added\_sugar  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 410.6078 8.4357 47.8782 48.675 <2e-16 \*\*\*  
 added\_sugar 1.5481 0.7213 110.8971 2.146 0.034 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 99: waso vs. added\_sugar  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 56.5258 7.4714 31.2863 7.566 1.49e-08 \*\*\*  
 age -0.8653 0.2593 32.0319 -3.338 0.00215 \*\*   
 added\_sugar 0.2645 0.1699 163.5917 1.557 0.12151   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 100: sfi vs. added\_sugar  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 17.09539 1.49124 52.53703 11.464 6.5e-16 \*\*\*  
 added\_sugar 0.05596 0.09165 198.77377 0.611 0.542   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

### Sleep and Diet

The following table presents the results of regressing diet outcome variables on sleep predictors:

Model 1: en vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 835.73 934.75 199.90 0.894 0.372  
 se 13.77 10.44 199.97 1.320 0.188  
   
   
 Model 2: food\_wt\_f vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 533.370 576.436 198.802 0.925 0.356  
 se 7.386 6.419 196.913 1.151 0.251  
   
   
 Model 3: ed vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2.046405 0.603373 197.139803 3.392 0.00084 \*\*\*  
 se -0.003562 0.006745 198.185615 -0.528 0.59800   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 4: prot vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 41.1426 60.4524 198.8625 0.681 0.497  
 sex2 -17.0032 18.8151 31.3318 -0.904 0.373  
 se 0.6403 0.6788 198.9692 0.943 0.347  
   
   
 Model 5: fat vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -9.5772 46.9139 193.6543 -0.204 0.8385   
 se 1.0185 0.5248 194.9867 1.941 0.0537 .  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 6: cho vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 145.4127 99.8518 199.0458 1.456 0.147  
 se 0.9855 1.1122 197.3803 0.886 0.377

Model 7: prot\_plant vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 1.143e+00 2.660e+00 1.977e+02 0.430 0.668  
 se 5.507e-03 2.974e-02 1.986e+02 0.185 0.853  
   
   
 Model 8: prot\_ani vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -3.55184 6.14512 114.04453 -0.578 0.5644   
 age 0.32241 0.14120 29.96493 2.283 0.0297 \*  
 sex2 -5.59518 2.41472 29.50941 -2.317 0.0276 \*  
 se 0.01772 0.05961 197.67674 0.297 0.7666   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 9: fiber vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 14.83545 11.98099 199.83542 1.238 0.217  
 se 0.06644 0.13361 199.08546 0.497 0.620  
   
   
 Model 10: ca vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 187.970 604.815 199.360 0.311 0.756  
 se 8.572 6.756 199.849 1.269 0.206  
   
   
 Model 11: mg vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 315.4571 190.0610 198.9012 1.660 0.0985 .  
 se 0.1555 2.1166 197.1353 0.073 0.9415   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 12: na vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -56.02 1770.67 199.99 -0.032 0.9748   
 se 41.55 19.76 199.62 2.103 0.0367 \*  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 13: sfa vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -11.4911 17.2142 175.8896 -0.668 0.5053   
 se 0.4165 0.1928 177.3839 2.160 0.0321 \*  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 14: ufa vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 0.1049 28.5772 196.7602 0.004 0.9971   
 se 0.5401 0.3195 197.8283 1.690 0.0926 .  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 15: fruit vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 8.837e-01 1.377e+00 1.976e+02 0.642 0.522  
 se 3.891e-03 1.539e-02 1.986e+02 0.253 0.801  
   
   
 Model 16: veg vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 1.650e+00 1.674e+00 1.991e+02 0.986 0.325  
 se 1.113e-03 1.870e-02 1.997e+02 0.060 0.953  
   
   
 Model 17: f\_v vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 2.822e+00 2.344e+00 1.998e+02 1.204 0.230  
 se 1.725e-03 2.617e-02 2.000e+02 0.066 0.947  
   
   
 Model 18: egg vs. se  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) -0.93213 1.13472 197.27116 -0.821 0.412  
 se 0.01782 0.01269 198.26349 1.405 0.162  
   
   
 Model 19: dairy vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -3.39265 1.50982 91.63810 -2.247 0.02704 \*   
 bmi 0.06675 0.02060 26.43052 3.240 0.00322 \*\*  
 se 0.03458 0.01706 107.89598 2.027 0.04510 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 20: added\_sugar vs. se  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -5.78549 10.72240 110.76573 -0.540 0.591   
 bmi 0.68036 0.26198 27.05763 2.597 0.015 \*  
 se -0.02774 0.10261 162.24230 -0.270 0.787   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 21: en vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1259.616 335.010 199.045 3.760 0.000223 \*\*\*  
 tst 1.891 0.746 191.935 2.534 0.012067 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 22: food\_wt\_f vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 897.7137 210.0541 197.7949 4.274 2.99e-05 \*\*\*  
 tst 0.6901 0.4575 185.7541 1.509 0.133   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 23: ed vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.622e+00 2.189e-01 1.990e+02 7.411 3.51e-12 \*\*\*  
 tst 2.545e-04 4.920e-04 1.953e+02 0.517 0.606   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 24: prot vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 50.56379 21.61945 196.96220 2.339 0.0203 \*  
 sex2 -20.22029 18.35991 31.76010 -1.101 0.2790   
 tst 0.11357 0.04866 189.90589 2.334 0.0206 \*  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 25: fat vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 28.97270 16.76266 198.30065 1.728 0.08547 .   
 tst 0.12282 0.03801 198.48122 3.231 0.00144 \*\*  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 26: cho vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 192.58659 36.36904 198.04018 5.295 3.14e-07 \*\*\*  
 tst 0.09550 0.07942 186.32260 1.202 0.231   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 27: prot\_plant vs. tst  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 3.015e-01 9.591e-01 1.990e+02 0.314 0.754  
 tst 3.143e-03 2.159e-03 1.962e+02 1.456 0.147  
   
   
 Model 28: prot\_ani vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -5.227535 4.001734 41.386689 -1.306 0.1987   
 age 0.318832 0.137710 29.783292 2.315 0.0277 \*  
 sex2 -5.872987 2.370434 30.024832 -2.478 0.0191 \*  
 tst 0.008036 0.004257 188.599018 1.888 0.0606 .  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 29: fiber vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.809e+01 4.352e+00 1.987e+02 4.157 4.79e-05 \*\*\*  
 tst 6.257e-03 9.596e-03 1.889e+02 0.652 0.515   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 30: ca vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 674.6554 219.0926 199.0947 3.079 0.00237 \*\*  
 tst 0.6504 0.4897 193.4219 1.328 0.18570   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 31: mg vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 252.2053 69.1135 198.1300 3.649 0.000336 \*\*\*  
 tst 0.1822 0.1510 186.8456 1.207 0.229075   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 32: na vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2209.413 640.980 198.825 3.447 0.000692 \*\*\*  
 tst 3.371 1.416 189.562 2.380 0.018287 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 33: sfa vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 8.97143 6.27396 194.03152 1.430 0.15434   
 tst 0.03912 0.01438 199.49559 2.721 0.00709 \*\*  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 34: ufa vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 16.99844 10.17685 198.81925 1.67 0.0964 .   
 tst 0.07349 0.02297 196.91607 3.20 0.0016 \*\*  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 35: fruit vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 9.925e-01 4.989e-01 1.989e+02 1.990 0.048 \*  
 tst 5.602e-04 1.123e-03 1.958e+02 0.499 0.618   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 36: veg vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.148e+00 6.046e-01 1.991e+02 1.899 0.0591 .  
 tst 1.420e-03 1.355e-03 1.944e+02 1.048 0.2958   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 37: f\_v vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2.230e+00 8.474e-01 1.991e+02 2.631 0.00917 \*\*  
 tst 1.762e-03 1.891e-03 1.927e+02 0.932 0.35259   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 38: egg vs. tst  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 6.549e-01 4.135e-01 1.990e+02 1.584 0.115  
 tst -5.044e-06 9.307e-04 1.960e+02 -0.005 0.996  
   
   
 Model 39: dairy vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -1.137151 0.676984 50.631135 -1.680 0.09917 .   
 bmi 0.073348 0.021192 26.375300 3.461 0.00185 \*\*  
 tst 0.001607 0.001080 156.071333 1.488 0.13881   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 40: added\_sugar vs. tst  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -7.908e+00 6.872e+00 3.348e+01 -1.151 0.2580   
 bmi 6.736e-01 2.601e-01 2.656e+01 2.589 0.0154 \*  
 tst -4.721e-04 5.918e-03 1.549e+02 -0.080 0.9365   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 41: en vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2.059e+03 1.648e+02 9.262e+01 12.493 <2e-16 \*\*\*  
 waso 6.278e-03 3.333e+00 1.952e+02 0.002 0.998   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 42: food\_wt\_f vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1171.4421 109.4606 79.4352 10.702 <2e-16 \*\*\*  
 waso 0.5211 2.0316 189.4754 0.256 0.798   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 43: ed vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.764e+00 1.004e-01 1.028e+02 17.57 <2e-16 \*\*\*  
 waso -9.956e-04 2.164e-03 1.991e+02 -0.46 0.646   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 44: prot vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 91.2938 11.0715 83.8335 8.246 1.98e-12 \*\*\*  
 sex2 -14.3651 19.1637 31.3192 -0.750 0.459   
 waso 0.1803 0.2148 195.7285 0.839 0.402   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 45: fat vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 83.39938 7.76128 107.25634 10.746 <2e-16 \*\*\*  
 waso -0.07016 0.17055 199.82853 -0.411 0.681   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 46: cho vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 234.56724 18.68647 81.43880 12.55 <2e-16 \*\*\*  
 waso -0.04581 0.35220 190.42141 -0.13 0.897   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 47: prot\_plant vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.539e+00 4.407e-01 1.062e+02 3.492 0.000699 \*\*\*  
 waso 2.705e-03 9.536e-03 1.993e+02 0.284 0.776938   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 48: prot\_ani vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -3.23747 3.84689 33.68943 -0.842 0.4060   
 age 0.34202 0.14078 30.37614 2.430 0.0212 \*  
 sex2 -5.73347 2.41177 30.10483 -2.377 0.0240 \*  
 waso 0.02108 0.01881 194.23075 1.121 0.2637   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 49: fiber vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 21.70143 2.15519 89.01249 10.069 2.3e-16 \*\*\*  
 waso -0.02769 0.04237 193.41155 -0.654 0.514   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 50: ca vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 910.415 104.608 97.155 8.703 8.33e-14 \*\*\*  
 waso 1.138 2.162 196.766 0.526 0.599   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 51: mg vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 321.2085 35.4591 83.2692 9.059 4.86e-14 \*\*\*  
 waso 0.2324 0.6694 190.8164 0.347 0.729   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 52: na vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 3709.171 321.185 88.511 11.548 <2e-16 \*\*\*  
 waso -2.119 6.331 193.474 -0.335 0.738   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 53: sfa vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 27.37465 2.73120 113.41119 10.023 <2e-16 \*\*\*  
 waso -0.05308 0.06367 197.08624 -0.834 0.406   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 54: ufa vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 48.5369 4.7899 104.6979 10.133 <2e-16 \*\*\*  
 waso -0.0121 0.1032 199.1693 -0.117 0.907   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 55: fruit vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.152e+00 2.295e-01 1.037e+02 5.020 2.15e-06 \*\*\*  
 waso 2.233e-03 4.933e-03 1.990e+02 0.453 0.651   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 56: veg vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.887524 0.282636 101.045744 6.678 1.33e-09 \*\*\*  
 waso -0.003995 0.005971 198.129754 -0.669 0.504   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 57: f\_v vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 3.021776 0.404312 96.341163 7.474 3.57e-11 \*\*\*  
 waso -0.001346 0.008343 196.633714 -0.161 0.872   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 58: egg vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 0.78306 0.18982 103.26763 4.125 7.51e-05 \*\*\*  
 waso -0.00376 0.00408 199.02104 -0.922 0.358   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 59: dairy vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -0.378794 0.572542 29.414135 -0.662 0.513   
 bmi 0.074404 0.021592 25.314012 3.446 0.002 \*\*  
 waso -0.002710 0.004528 123.355425 -0.599 0.551   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 60: added\_sugar vs. waso  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -8.361563 6.563784 28.399978 -1.274 0.2130   
 bmi 0.675556 0.259986 26.707114 2.598 0.0151 \*  
 waso 0.005896 0.026336 161.771489 0.224 0.8231   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 61: en vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2086.798 164.922 93.408 12.653 <2e-16 \*\*\*  
 sfi -1.567 6.615 195.521 -0.237 0.813   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 62: food\_wt\_f vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1163.976 109.436 80.153 10.636 <2e-16 \*\*\*  
 sfi 1.461 4.033 189.869 0.362 0.718   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 63: ed vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.766546 0.100522 103.646500 17.574 <2e-16 \*\*\*  
 sfi -0.002094 0.004293 199.262419 -0.488 0.626   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 64: prot vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 99.14729 11.12473 86.57109 8.912 7.05e-14 \*\*\*  
 sex2 -14.95572 19.09246 31.52988 -0.783 0.439   
 sfi -0.08441 0.42754 195.94379 -0.197 0.844   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 65: fat vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 83.0746 7.7738 108.0976 10.686 <2e-16 \*\*\*  
 sfi -0.1204 0.3384 199.8845 -0.356 0.722   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 66: cho vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 238.0729 18.7117 81.8229 12.723 <2e-16 \*\*\*  
 sfi -0.2915 0.6987 190.6640 -0.417 0.677   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 67: prot\_plant vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.470e+00 4.409e-01 1.075e+02 3.334 0.00117 \*\*  
 sfi 9.293e-03 1.891e-02 1.995e+02 0.491 0.62370   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 68: prot\_ani vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -2.26237 3.79403 31.35571 -0.596 0.5553   
 age 0.32654 0.14102 29.93043 2.316 0.0276 \*  
 sex2 -5.56494 2.42521 30.08738 -2.295 0.0289 \*  
 sfi 0.00931 0.03728 195.31613 0.250 0.8031   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 69: fiber vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 21.01888 2.15980 89.37062 9.732 1.1e-15 \*\*\*  
 sfi -0.01593 0.08417 193.64393 -0.189 0.85   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 70: ca vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1003.906 104.148 99.202 9.639 6.58e-16 \*\*\*  
 sfi -3.078 4.290 197.351 -0.717 0.474   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 71: mg vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 349.298 35.413 83.689 9.864 1.13e-15 \*\*\*  
 sfi -1.144 1.327 191.122 -0.862 0.39   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 72: na vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 3801.729 321.539 88.723 11.824 <2e-16 \*\*\*  
 sfi -9.498 12.548 193.628 -0.757 0.45   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 73: sfa vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 27.11189 2.74039 114.47994 9.893 <2e-16 \*\*\*  
 sfi -0.09002 0.12634 196.87041 -0.713 0.477   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 74: ufa vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 48.158164 4.796174 105.466531 10.041 <2e-16 \*\*\*  
 sfi -0.002352 0.204859 199.293779 -0.011 0.991   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 75: fruit vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.111e+00 2.295e-01 1.049e+02 4.844 4.42e-06 \*\*\*  
 sfi 6.747e-03 9.781e-03 1.992e+02 0.690 0.491   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 76: veg vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2.04787 0.28165 101.78695 7.271 7.53e-11 \*\*\*  
 sfi -0.01706 0.01180 198.33801 -1.446 0.15   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 77: f\_v vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 3.148762 0.404113 97.267640 7.792 7.31e-12 \*\*\*  
 sfi -0.009913 0.016545 196.915465 -0.599 0.55   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 78: egg vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 0.818612 0.189393 105.177921 4.322 3.52e-05 \*\*\*  
 sfi -0.009472 0.008085 199.268328 -1.171 0.243   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 79: dairy vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -0.471920 0.554520 25.944570 -0.851 0.40253   
 bmi 0.075927 0.021789 24.516488 3.485 0.00187 \*\*  
 sfi -0.002141 0.009013 122.989210 -0.238 0.81260   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 80: added\_sugar vs. sfi  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -7.83993 6.50849 27.25368 -1.205 0.2387   
 bmi 0.67591 0.26055 26.62263 2.594 0.0152 \*  
 sfi -0.01932 0.05224 161.61238 -0.370 0.7119   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## GitHub Repository

All code for this report can be found in [this Github repository](https://github.com/waveley/diet_sleep).