Diet and Sleep vs. Condition

Waveley Qiu

2022-11-01

## Background

This analysis seeks to understand the influence that alignment condition has on two categories of lifestyle outcomes: dietary intake and sleep measures.

## Data

There are 8 subjects in this study. All subjects have complete records for all outcome measures of interest.

In assessing the influence that alignment condition has on dietary intake, each subject was measured at two timepoints: week 3 and week 6. As each subject underwent both alignment conditions (aligned and misaligned), each subject had four total records in that round of data collection.

In assessing the influence that alignment condition has on dietary intake, each subject was measured at six timepoints: weeks 1, 2, 3, 4, 5, and 6. As each subject underwent both alignment conditions (aligned and misaligned), each subject had twelve total records in that round of data collection.

## Variables

The predictors in both arms of this analysis (diet outcomes and sleep outcomes) are the same – we are interested in one’s alignment condition (aligned/misaligned), the week of measurement, as well as the interaction of condition and week. In this analysis, week is treated as a continuous variable.

In investigating the influence that one’s alignment condition may have on their sleep, we are interested in the following outcome variables: food weight, energy, food weight (no beverages), energy (no beverages), energy density, protein, fat, carbohydrate, plant protein, animal protein, sugar, fiber, calcium, magnesium, potassium, sodium, zinc, vitamin C, vitamin B6, folate, vitamin B12, saturated fat, monounsaturated fat, polyunsaturated fat, unsaturated fat, vitamin D, fruits, vegetables, fruits and vegetables, eggs, nuts, dairy, and added sugar.

In investigating the influence that one’s alignment condition may have on their diet, we are interested in the following predictors: latency, efficiency, TIB, TST, WASO, number of awakenings, awakening length, movement index, SFI, and fragmentation index.

## Methodology

For both portions of this analysis, linear mixed effect models, with random intercepts for each subject, will be constructed to regress each outcome variable in turn on the following predictors: condition, week, the interaction of condition and week.

In all models constructed, phase (coded as a factor variable, taking in values 1 and 2) will be included in the model if it is deemed to be significant. In addition, the diet portion of this study, energy (recorded as the variable “en” in the dataset) will be added as a predictor in all models, excluding the model in which energy itself is the outcome.

## Results

### Diet and Condition

The results of regressing diet outcome variables on condition, week, the interaction of condition and week, energy (if applicable), and phase (if determined to be a significant predictor) are as follows:

Model 1: food\_wt\_ttl vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -145.3589 1806.7151 26.9999 -0.080 0.9365   
 conditionMisaligned 1081.2811 1450.0340 20.2025 0.746 0.4644   
 week 333.2726 214.8696 20.1272 1.551 0.1365   
 en 0.9085 0.4614 25.7158 1.969 0.0598 .  
 conditionMisaligned:week -352.5308 308.3264 20.3088 -1.143 0.2662   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 2: en vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2889.27 485.18 28.00 5.955 2.07e-06 \*\*\*  
 conditionMisaligned -753.33 610.51 21.00 -1.234 0.231   
 week -100.01 91.01 21.00 -1.099 0.284   
 conditionMisaligned:week 181.15 128.71 21.00 1.407 0.174   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 3: food\_wt\_f vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 316.1968 279.4408 27.0000 1.132 0.268   
 conditionMisaligned 54.3316 240.3566 20.8686 0.226 0.823   
 week 15.9674 35.6394 20.7652 0.448 0.659   
 en 0.4489 0.0723 26.9981 6.210 1.22e-06 \*\*\*  
 conditionMisaligned:week -28.9737 51.0618 21.0149 -0.567 0.576   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 4: en\_food vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 38.05750 164.43779 26.99666 0.231 0.819   
 conditionMisaligned 29.26808 137.83085 20.55140 0.212 0.834   
 week 11.11593 20.43172 20.45779 0.544 0.592   
 en 0.89139 0.04248 26.79884 20.985 <2e-16 \*\*\*  
 conditionMisaligned:week -8.44194 29.29210 20.68386 -0.288 0.776   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
 Model 5: ed vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.309e+00 2.476e-01 2.699e+01 5.289 1.4e-05 \*\*\*  
 conditionMisaligned -9.187e-02 2.173e-01 2.105e+01 -0.423 0.6768   
 week -1.163e-02 3.223e-02 2.093e+01 -0.361 0.7219   
 en 1.307e-04 6.395e-05 2.679e+01 2.044 0.0509 .   
 conditionMisaligned:week 4.145e-02 4.616e-02 2.120e+01 0.898 0.3793   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 6: prot vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -2.97092 20.53662 26.99674 -0.145 0.886   
 conditionMisaligned 10.26079 16.94836 20.63513 0.605 0.552   
 week 0.03097 2.51202 20.55015 0.012 0.990   
 en 0.04913 0.00529 26.50795 9.287 8.05e-10 \*\*\*  
 conditionMisaligned:week -4.52041 3.60264 20.75528 -1.255 0.224   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 7: fat vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -18.342608 12.306175 26.181391 -1.491 0.148   
 conditionMisaligned 10.497363 8.826863 20.313573 1.189 0.248   
 week 0.489366 1.307275 20.275075 0.374 0.712   
 en 0.044080 0.002933 23.170050 15.030 1.93e-13 \*\*\*  
 conditionMisaligned:week -2.266420 1.878333 20.367836 -1.207 0.241   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 8: cho vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 36.80167 33.23349 26.95363 1.107 0.278   
 conditionMisaligned -34.15287 29.92834 20.59360 -1.141 0.267   
 week -2.06310 4.44007 20.46468 -0.465 0.647   
 en 0.10909 0.00854 25.91971 12.774 1.09e-12 \*\*\*  
 conditionMisaligned:week 10.42314 6.35318 20.77667 1.641 0.116   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 9: prot\_plant vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 0.2022205 2.1721620 26.9909925 0.093 0.9265   
 conditionMisaligned 0.0264864 1.9155445 21.0582678 0.014 0.9891   
 week -0.2732843 0.2841123 20.9451939 -0.962 0.3471   
 en 0.0011493 0.0005607 26.7002732 2.050 0.0503 .  
 conditionMisaligned:week 0.2415042 0.4067776 21.2184973 0.594 0.5590   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 10: prot\_ani vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -0.3631120 2.7153402 26.9885509 -0.134 0.895   
 conditionMisaligned -0.4918993 2.4006557 21.0767620 -0.205 0.840   
 week -0.3166339 0.3560744 20.9627698 -0.889 0.384   
 en 0.0041439 0.0007007 26.6403469 5.914 2.79e-06 \*\*\*  
 conditionMisaligned:week -0.3544410 0.5097721 21.2383063 -0.695 0.494   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 11: sugar vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -4.991890 30.227142 26.712550 -0.165 0.870   
 conditionMisaligned 6.480510 28.522205 20.064525 0.227 0.823   
 week -2.793010 4.233943 19.910862 -0.660 0.517   
 en 0.053694 0.007629 22.505525 7.038 4.06e-07 \*\*\*  
 conditionMisaligned:week 0.736724 6.049646 20.283647 0.122 0.904   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 12: fiber vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 12.965991 7.024607 26.996480 1.846 0.075916 .   
 conditionMisaligned -8.419111 5.840460 20.796756 -1.442 0.164329   
 week -1.316299 0.865709 20.709649 -1.520 0.143510   
 en 0.007229 0.001812 26.671856 3.989 0.000463 \*\*\*  
 conditionMisaligned:week 2.044686 1.241362 20.919924 1.647 0.114471   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 13: ca vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -157.69141 294.30165 26.40140 -0.536 0.596572   
 conditionMisaligned 521.94981 296.33547 21.45858 1.761 0.092424 .   
 week 138.48316 44.02491 21.31887 3.146 0.004820 \*\*   
 en 0.30154 0.07125 18.64066 4.232 0.000468 \*\*\*  
 conditionMisaligned:week -130.95558 62.78073 21.65780 -2.086 0.048985 \*   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 14: mg vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 26.83408 76.39799 26.99210 0.351 0.728   
 conditionMisaligned 62.92406 67.26329 20.88379 0.935 0.360   
 week 4.95803 9.97626 20.76914 0.497 0.624   
 en 0.13212 0.01973 26.72631 6.697 3.63e-07 \*\*\*  
 conditionMisaligned:week -12.74819 14.28416 21.04629 -0.892 0.382   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 15: k vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 442.9142 674.1310 26.9993 0.657 0.517   
 conditionMisaligned -160.6904 584.9097 20.9936 -0.275 0.786   
 week -90.7411 86.7372 20.8874 -1.046 0.307   
 en 1.3198 0.1743 26.9536 7.570 3.88e-08 \*\*\*  
 conditionMisaligned:week 52.3482 124.2422 21.1439 0.421 0.678   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 16: na vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 235.0875 592.4075 26.1327 0.397 0.695   
 conditionMisaligned -265.3264 637.2715 20.9182 -0.416 0.681   
 week 114.4094 94.7494 20.7765 1.207 0.241   
 en 1.4272 0.1347 13.5237 10.598 6.3e-08 \*\*\*  
 conditionMisaligned:week 4.1939 134.8601 21.1214 0.031 0.975   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 17: zn vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -4.690089 4.400352 26.320145 -1.066 0.2962   
 conditionMisaligned 8.118599 4.457176 21.101918 1.821 0.0827 .   
 week 1.024820 0.662226 20.955791 1.548 0.1367   
 en 0.005484 0.001060 17.730046 5.172 6.71e-05 \*\*\*  
 conditionMisaligned:week -1.699924 0.944186 21.310580 -1.800 0.0860 .   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 18: vit\_c vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 68.14717 75.96084 25.87994 0.897 0.3779   
 conditionMisaligned -87.63364 63.29672 19.77785 -1.384 0.1816   
 week -7.10755 9.29858 19.46547 -0.764 0.4538   
 en 0.05054 0.01888 24.50248 2.677 0.0131 \*  
 phase2 -44.09019 20.98033 20.26181 -2.102 0.0483 \*  
 conditionMisaligned:week 13.83931 13.32273 19.82462 1.039 0.3114   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 19: vit\_b6 vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.2652449 0.9757179 26.9966376 1.297 0.20570   
 conditionMisaligned -0.3709644 0.8048082 20.4045884 -0.461 0.64972   
 week -0.1238933 0.1192850 20.3177964 -1.039 0.31118   
 en 0.0008420 0.0002513 26.4726384 3.351 0.00244 \*\*  
 conditionMisaligned:week 0.1094490 0.1710757 20.5273488 0.640 0.52940   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 20: folate vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 144.77324 148.86280 26.99899 0.973 0.33942   
 conditionMisaligned 50.46348 126.80447 20.57762 0.398 0.69476   
 week 13.81517 18.80026 20.47591 0.735 0.47077   
 en 0.12137 0.03851 26.97790 3.152 0.00395 \*\*  
 conditionMisaligned:week 5.93000 26.94252 20.72164 0.220 0.82795   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 21: vit\_b12 vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -3.6989834 3.3238547 26.2126493 -1.113 0.2759   
 conditionMisaligned 6.6879571 3.5858837 21.3597945 1.865 0.0760 .  
 week 1.0717425 0.5331660 21.2261482 2.010 0.0573 .  
 en 0.0017445 0.0007531 14.0138855 2.316 0.0362 \*  
 conditionMisaligned:week -1.3839367 0.7588137 21.5512118 -1.824 0.0821 .  
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 22: sfa vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -9.017942 8.079973 26.997083 -1.116 0.274   
 conditionMisaligned 3.019436 6.798157 20.576993 0.444 0.662   
 week 1.031615 1.007780 20.481699 1.024 0.318   
 en 0.014151 0.002088 26.855331 6.777 2.89e-07 \*\*\*  
 conditionMisaligned:week -0.945016 1.444683 20.711856 -0.654 0.520   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 23: mufa vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -9.921425 5.024505 26.921177 -1.975 0.0587 .   
 conditionMisaligned 5.727296 3.851769 20.344968 1.487 0.1524   
 week 0.167536 0.570602 20.288879 0.294 0.7720   
 en 0.016612 0.001254 24.517242 13.245 1.14e-12 \*\*\*  
 conditionMisaligned:week -0.992252 0.819346 20.424120 -1.211 0.2397   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 24: pufa vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 0.994227 5.978922 26.996265 0.166 0.869   
 conditionMisaligned 1.910039 5.229688 20.542385 0.365 0.719   
 week -0.697549 0.775590 20.426619 -0.899 0.379   
 en 0.009674 0.001545 26.840957 6.261 1.1e-06 \*\*\*  
 conditionMisaligned:week -0.182429 1.110706 20.706541 -0.164 0.871   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 25: ufa vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -7.121079 8.640665 26.984461 -0.824 0.417   
 conditionMisaligned 7.166420 6.770500 20.567029 1.058 0.302   
 week -0.592531 1.003107 20.504419 -0.591 0.561   
 en 0.025661 0.002183 25.162925 11.755 1.02e-11 \*\*\*  
 conditionMisaligned:week -1.061440 1.439967 20.655412 -0.737 0.469   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 26: vit\_d vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.0977430 2.8369273 26.2663356 0.387 0.7019   
 conditionMisaligned 1.9201812 3.1142769 21.4643409 0.617 0.5440   
 week 0.3784378 0.4631342 21.3367531 0.817 0.4229   
 en 0.0012338 0.0006294 13.2646389 1.960 0.0713 .  
 conditionMisaligned:week -0.7427534 0.6588344 21.6472195 -1.127 0.2719   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 27: fruit vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.0175041 0.9560293 26.8957897 1.064 0.29665   
 conditionMisaligned -0.5718700 0.8789682 21.1862176 -0.651 0.52229   
 week -0.1848133 0.1304345 21.0579205 -1.417 0.17114   
 en 0.0006931 0.0002440 25.0129407 2.840 0.00883 \*\*  
 conditionMisaligned:week 0.1261951 0.1865190 21.3683575 0.677 0.50593   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 28: veg vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 1.2394404 1.0534047 26.9415940 1.177 0.250   
 conditionMisaligned -0.9586819 0.9552231 21.1811215 -1.004 0.327   
 week -0.1474266 0.1417259 21.0578507 -1.040 0.310   
 en 0.0004889 0.0002702 25.7363063 1.810 0.082 .  
 conditionMisaligned:week 0.2376753 0.2027501 21.3559993 1.172 0.254   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 29: f\_v vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 2.3209027 1.5026234 26.9999900 1.545 0.13409   
 conditionMisaligned -1.5472280 1.2954671 20.9468069 -1.194 0.24569   
 week -0.3344537 0.1920932 20.8431950 -1.741 0.09641 .   
 en 0.0011599 0.0003887 26.9921297 2.984 0.00598 \*\*  
 conditionMisaligned:week 0.3678805 0.2752012 21.0935032 1.337 0.19554   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 30: egg vs. condition  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) 0.9676089 0.7012390 26.9410446 1.380 0.179  
 conditionMisaligned -0.8514027 0.6360097 21.1825058 -1.339 0.195  
 week -0.1087488 0.0943647 21.0591768 -1.152 0.262  
 en 0.0001816 0.0001798 25.7271098 1.010 0.322  
 conditionMisaligned:week 0.1713328 0.1349952 21.3574673 1.269 0.218  
   
   
 Model 31: nuts vs. condition  
 Estimate Std. Error df t value Pr(>|t|)  
 (Intercept) -0.8208287 1.2122503 26.8526232 -0.677 0.504  
 conditionMisaligned 0.9622642 1.1265967 21.2706948 0.854 0.403  
 week 0.0150683 0.1672040 21.1402292 0.090 0.929  
 en 0.0005191 0.0003081 24.3965366 1.685 0.105  
 conditionMisaligned:week -0.0046043 0.2390202 21.4559816 -0.019 0.985  
   
   
 Model 32: dairy vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 0.4176301 0.7992659 26.4433069 0.523 0.6057   
 conditionMisaligned 0.5480491 0.7984210 21.4419012 0.686 0.4998   
 week 0.2247130 0.1186054 21.3020391 1.895 0.0718 .  
 en 0.0001868 0.0001947 19.2112202 0.960 0.3492   
 conditionMisaligned:week -0.0967204 0.1691746 21.6412587 -0.572 0.5734   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 33: added\_sugar vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) -2.664836 6.027747 26.999865 -0.442 0.661942   
 conditionMisaligned 4.780292 4.832029 20.452842 0.989 0.334080   
 week 0.043926 0.716016 20.380000 0.061 0.951679   
 en 0.006293 0.001539 25.743067 4.090 0.000375 \*\*\*  
 conditionMisaligned:week -0.381757 1.027466 20.555755 -0.372 0.714029   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## Sleep and Condition

The results of regressing sleep outcome variables on condition, week, the interaction of condition and week, and phase (if determined to be a significant predictor) are as follows:

Model 1: latency vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 3.1121 1.8515 43.8111 1.681 0.0999 .  
 conditionMisaligned 3.1147 2.2375 82.6884 1.392 0.1676   
 week 0.1739 0.4050 82.6595 0.429 0.6688   
 conditionMisaligned:week -0.5719 0.5733 82.6595 -0.997 0.3214   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 2: efficiency vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 90.4986 1.7206 17.9868 52.596 <2e-16 \*\*\*  
 conditionMisaligned -2.0874 1.5966 83.0261 -1.307 0.195   
 week 0.1366 0.2890 83.0165 0.473 0.638   
 conditionMisaligned:week 0.3879 0.4091 83.0165 0.948 0.346   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 3: tib vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 480.1640 14.2520 16.3882 33.691 <2e-16 \*\*\*  
 conditionMisaligned -0.6325 12.6659 83.0282 -0.050 0.960   
 week -1.6535 2.2925 83.0199 -0.721 0.473   
 conditionMisaligned:week -0.3417 3.2450 83.0199 -0.105 0.916   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 4: tst vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 434.7404 17.3474 14.1680 25.061 3.88e-13 \*\*\*  
 conditionMisaligned -10.8329 14.2414 83.0227 -0.761 0.449   
 week -0.6928 2.5776 83.0161 -0.269 0.789   
 conditionMisaligned:week 1.5256 3.6486 83.0161 0.418 0.677   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Model 5: waso vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 42.311 7.181 16.904 5.892 1.82e-05 \*\*\*  
 conditionMisaligned 7.032 6.478 83.029 1.086 0.281   
 week -1.135 1.172 83.020 -0.968 0.336   
 conditionMisaligned:week -1.295 1.660 83.020 -0.781 0.437   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 6: number\_of\_awakenings vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 14.10412 2.28437 9.72363 6.174 0.000118 \*\*\*  
 conditionMisaligned -1.84260 1.23408 82.01002 -1.493 0.139248   
 week -0.11394 0.22149 82.00560 -0.514 0.608350   
 phase2 -1.41170 0.56466 82.02672 -2.500 0.014409 \*   
 conditionMisaligned:week 0.02656 0.31352 82.00560 0.085 0.932684   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 7: awakening\_length vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 3.42550 0.62057 56.48567 5.520 8.86e-07 \*\*\*  
 conditionMisaligned 1.28443 0.78574 82.89250 1.635 0.106   
 week -0.04362 0.14223 82.85530 -0.307 0.760   
 conditionMisaligned:week -0.20362 0.20132 82.85530 -1.011 0.315   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 8: movement\_index vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 12.64168 2.09602 11.47804 6.031 7.14e-05 \*\*\*  
 conditionMisaligned -0.17678 1.47402 83.00875 -0.120 0.905   
 week -0.09335 0.26679 83.00437 -0.350 0.727   
 conditionMisaligned:week -0.13120 0.37763 83.00437 -0.347 0.729   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 9: sfi vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 24.5852 3.1399 20.4995 7.830 1.37e-07 \*\*\*  
 conditionMisaligned 1.1265 3.0703 83.0334 0.367 0.715   
 week -0.6022 0.5557 83.0221 -1.084 0.282   
 conditionMisaligned:week -0.4223 0.7866 83.0221 -0.537 0.593   
 ---  
 Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
   
   
 Model 10: fragmentation\_index vs. condition  
 Estimate Std. Error df t value Pr(>|t|)   
 (Intercept) 11.9435 1.5506 76.0529 7.703 4.06e-11 \*\*\*  
 conditionMisaligned 1.3273 2.0803 83.1709 0.638 0.525   
 week -0.5088 0.3766 83.1150 -1.351 0.180   
 conditionMisaligned:week -0.2911 0.5330 83.1150 -0.546 0.586   
 ---  
 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).