

Sandbox

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Setup

```
diet_sleep <- readxl::read_excel("data/CM + DQ Study Diet and Sleep_8.24.2022_HB.xlsx", sheet = "Diet-sleep")
janitor::clean_names() %>%
  filter(
    condition == "Aligned"
  )
```

Diet and Sleep

```
outs1 <-
  diet_sleep %>%
  select(
    se,
    tst,
    waso,
    sfi
  )
covs1 <-
  diet_sleep %>%
  select(
    sex, age, bmi, id
  )
preds1 <-
  diet_sleep %>%
  select(
    en, food_wt_f, ed,
    prot, fat, cho,
    prot_plant, prot_animal, fiber,
    ca, mg, na, zn, vit_b6,
    vit_b12, sfa, ufa,
    vit_d, fruit, veg, f_v,
    egg, nuts, dairy,
    added_sugar
  )

loop_models <- function(outcomes = outs, predictors = preds, covariates = covs){

  outcome_tib <-
    tibble()

  age <- covariates$age
```

```

sex <- covariates$sex
bmi <- covariates$bmi
id <- covariates$id

for (i in 1:ncol(predictors)) {
  for (j in 1:ncol(outcomes)) {

    pred_name <- predictors[,i] %>% names()
    outcome_name <- outcomes[,j] %>% names()

    print(paste0(outcome_name, " vs ", pred_name))

    cur_outcome <- outcomes %>% pull(outcome_name)
    cur_predictor <- predictors %>% pull(pred_name)

    cur_cov_vec <- c("age", "sex", "bmi") # all covariates

    cur_formula <-
      paste0("cur_outcome ~ ",
            paste0(cur_cov_vec, sep = " + ", collapse = ""),
            "cur_predictor + (1 | id)"
            )

    first_mem <- lmer(cur_formula)
    saved_sum <- first_mem %>% summary()
    p_vals <- saved_sum$coefficients[,5] # p-value column
    save_covs <- p_vals[p_vals < 0.05] %>% names() # only keep covariates with p-value < 0.05
    updated_cov_vec <- save_covs[!(save_covs %in% c("(Intercept)"))] # dont want intercept

    fin_formula <-
      paste0("cur_outcome ~ ",
            paste0(updated_cov_vec, sep = " + ", collapse = ""),
            "cur_predictor + (1 | id)"
            )

    final_mem <- lmer(fin_formula)
    mod_sum <- summary(final_mem)
    mod_sum_coef <- mod_sum$coefficients
    mod_estimates <- mod_sum_coef[,1]
    cur_tib <-
      tibble(
        predictor = pred_name,
        outcome = outcome_name,
        model_summary = list(mod_sum_coef),
        model_estimates = list(mod_estimates)
      )

    outcome_tib <- outcome_tib %>% bind_rows(cur_tib)
  }
}
return(outcome_tib)
}

write_mod <- function(pred = test$predictor,

```

```

      out = test$outcome,
      mod_sum = test$model_estimates){

new_names <-
  mod_sum %>%
  unlist() %>%
  names() %>%
  str_replace_all("cur_predictor", pred) %>%
  str_replace_all('\\(Intercept\\)', "") %>% toupper()

new_vals <-
  mod_sum %>%
  unlist() %>%
  round(digits = 7)

rhs <- tibble(
  name = new_names,
  vals = new_vals
) %>%
  mutate(
    sign = sign(vals),
    new_vals = abs(vals),
    new_term = ifelse(name == "",
                      ifelse(sign == 1, paste(new_vals), paste("-", new_vals)),
                      ifelse(sign == -1,
                              paste0(" + ", new_vals, "(", name, ")"),
                              paste0(" - ", new_vals, "(", name, ")")))
  ) %>% pull(new_term) %>% paste(collapse = "")

lhs <- out %>% toupper()
fin_mod <- paste0(lhs, " = ", rhs)
return(fin_mod)
}

do_write_mods <- function(df) {

  fin_df <- df %>%
    mutate(
      fin_mods = pmap(list(predictor, outcome, model_estimates), write_mod)
    ) %>%
    select(predictor, outcome, fin_mods) %>%
    unnest(fin_mods)

  return(fin_df)
}

diet_sleep_models <- loop_models(outs1, preds1, covs1)

## [1] "se vs en"
## [1] "tst vs en"
## [1] "waso vs en"
## [1] "sfi vs en"
## [1] "se vs food_wt_f"
## [1] "tst vs food_wt_f"

```

```

## [1] "waso vs food_wt_f"
## [1] "sfi vs food_wt_f"
## [1] "se vs ed"
## [1] "tst vs ed"
## [1] "waso vs ed"
## [1] "sfi vs ed"
## [1] "se vs prot"
## [1] "tst vs prot"
## [1] "waso vs prot"
## [1] "sfi vs prot"
## [1] "se vs fat"
## [1] "tst vs fat"
## [1] "waso vs fat"
## [1] "sfi vs fat"
## [1] "se vs cho"
## [1] "tst vs cho"
## [1] "waso vs cho"
## [1] "sfi vs cho"
## [1] "se vs prot_plant"
## [1] "tst vs prot_plant"
## [1] "waso vs prot_plant"
## [1] "sfi vs prot_plant"
## [1] "se vs prot_ani"
## [1] "tst vs prot_ani"
## [1] "waso vs prot_ani"
## [1] "sfi vs prot_ani"
## [1] "se vs fiber"
## [1] "tst vs fiber"
## [1] "waso vs fiber"
## [1] "sfi vs fiber"
## [1] "se vs ca"
## [1] "tst vs ca"
## [1] "waso vs ca"
## [1] "sfi vs ca"
## [1] "se vs mg"
## [1] "tst vs mg"
## [1] "waso vs mg"
## [1] "sfi vs mg"
## [1] "se vs na"
## [1] "tst vs na"
## [1] "waso vs na"
## [1] "sfi vs na"
## [1] "se vs zn"
## [1] "tst vs zn"
## [1] "waso vs zn"
## [1] "sfi vs zn"
## [1] "se vs vit_b6"
## [1] "tst vs vit_b6"
## [1] "waso vs vit_b6"
## [1] "sfi vs vit_b6"
## [1] "se vs vit_b12"
## [1] "tst vs vit_b12"
## [1] "waso vs vit_b12"
## [1] "sfi vs vit_b12"

```

```
## [1] "se vs sfa"
## [1] "tst vs sfa"
## [1] "waso vs sfa"
## [1] "sfi vs sfa"
## [1] "se vs ufa"
## [1] "tst vs ufa"
## [1] "waso vs ufa"
## [1] "sfi vs ufa"
## [1] "se vs vit_d"
## [1] "tst vs vit_d"
## [1] "waso vs vit_d"
## [1] "sfi vs vit_d"
## [1] "se vs fruit"
## [1] "tst vs fruit"
## [1] "waso vs fruit"
## [1] "sfi vs fruit"
## [1] "se vs veg"
## [1] "tst vs veg"
## [1] "waso vs veg"
## [1] "sfi vs veg"
## [1] "se vs f_v"
## [1] "tst vs f_v"
## [1] "waso vs f_v"
## [1] "sfi vs f_v"
## [1] "se vs egg"
## [1] "tst vs egg"
## [1] "waso vs egg"
## [1] "sfi vs egg"
## [1] "se vs nuts"
## [1] "tst vs nuts"
## [1] "waso vs nuts"
## [1] "sfi vs nuts"
## [1] "se vs dairy"
## [1] "tst vs dairy"
## [1] "waso vs dairy"
## [1] "sfi vs dairy"
## [1] "se vs added_sugar"
## [1] "tst vs added_sugar"
## [1] "waso vs added_sugar"
## [1] "sfi vs added_sugar"
```

```
diet_sleep_output <- do_write_mods(diet_sleep_models) %>%
  mutate(predictor = predictor %>% toupper(),
         outcome = outcome %>% toupper())
diet_sleep_output %>% knitr::kable()
```

predictor	outcome	fin_mods
EN	SE	SE = 78.4282912 + 0.3370484(AGE) + 0.0005664(EN)
EN	TST	TST = 400.4624795 + 0.0104887(EN)
EN	WASO	WASO = 57.5766077 - 0.8242912(AGE) + 0.0001611(EN)
EN	SFI	SFI = 18.6617629 - 0.0005003(EN)
FOOD_WT_F	SE	SE = 78.4128183 + 0.3359063(AGE) + 0.0010218(FOOD_WT_F)
FOOD_WT_F	TST	TST = 412.4506893 + 0.0081654(FOOD_WT_F)
FOOD_WT_F	WASO	WASO = 59.7262162 - 0.8060025(AGE) - 0.0019525(FOOD_WT_F)

predictor	outcome	fin_mods
FOOD_WT_F	SFI	SFI = 19.1605535 - 0.0012865(FOOD_WT_F)
ED	SE	SE = 79.3071907 + 0.3448659(AGE) + 0.040822(ED)
ED	TST	TST = 406.8271837 + 8.8850466(ED)
ED	WASO	WASO = 51.3111088 - 0.7968694(AGE) + 3.3596959(ED)
ED	SFI	SFI = 16.7208264 + 0.5233608(ED)
PROT	SE	SE = 79.1501677 + 0.3426695(AGE) + 0.0030447(PROT)
PROT	TST	TST = 409.8319478 + 0.1295998(PROT)
PROT	WASO	WASO = 57.2403289 - 0.8268862(AGE) + 0.0077848(PROT)
PROT	SFI	SFI = 17.9639034 - 0.0035187(PROT)
FAT	SE	SE = 78.6725398 + 0.3408333(AGE) + 0.0099762(FAT)
FAT	TST	TST = 399.0921449 + 0.2806684(FAT)
FAT	WASO	WASO = 56.1831846 - 0.8307442(AGE) + 0.02321(FAT)
FAT	SFI	SFI = 17.8005491 - 0.0020813(FAT)
CHO	SE	SE = 78.8497223 + 0.3363738(AGE) + 0.0033085(CHO)
CHO	TST	TST = 404.2198876 + 0.0772744(CHO)
CHO	WASO	WASO = 58.5345679 - 0.8119804(AGE) - 0.0041795(CHO)
CHO	SFI	SFI = 19.9339964 - 0.0099479(CHO)
PROT_PLANT	SE	SE = 79.3311134 + 0.3449495(AGE) + 0.0266401(PROT_PLANT)
PROT_PLANT	TST	TST = 419.8634454 + 1.4161408(PROT_PLANT)
PROT_PLANT	WASO	WASO = 57.0201412 - 0.8160433(AGE) + 0.3918869(PROT_PLANT)
PROT_PLANT	SFI	SFI = 17.6176249 + 0.0070999(PROT_PLANT)
PROT_ANI	SE	SE = 79.1015503 + 0.337767(AGE) + 0.077263(PROT_ANI)
PROT_ANI	TST	TST = 412.8371016 + 1.5138049(PROT_ANI)
PROT_ANI	WASO	WASO = 56.9568234 - 0.8429035(AGE) + 0.2388978(PROT_ANI)
PROT_ANI	SFI	SFI = 17.4613173 + 0.0273504(PROT_ANI)
FIBER	SE	SE = 78.8932797 + 0.3415556(AGE) + 0.0280693(FIBER)
FIBER	TST	TST = 416.6606721 + 0.2692397(FIBER)
FIBER	WASO	WASO = 58.476971 - 0.818528(AGE) - 0.035341(FIBER)
FIBER	SFI	SFI = 18.9167929 - 0.0625147(FIBER)
CA	SE	SE = 78.7415315 + 0.3379852(AGE) + 0.0008754(CA)
CA	TST	TST = 406.4134005 + 0.0166152(CA)
CA	WASO	WASO = 58.2637157 - 0.8180694(AGE) - 0.0005568(CA)
CA	SFI	SFI = 18.2894691 - 0.000695(CA)
MG	SE	SE = 78.9171597 + 0.3429089(AGE) + 0.00157(MG)
MG	TST	TST = 415.0862924 + 0.02163(MG)
MG	WASO	WASO = 58.7730214 - 0.8191068(AGE) - 0.0030646(MG)
MG	SFI	SFI = 18.4800925 - 0.0025916(MG)
NA	SE	SE = 78.2697137 + 0.3357501(AGE) + 0.000371(NA)
NA	TST	TST = 403.923813 + 0.004947(NA)
NA	WASO	WASO = 59.7220373 - 0.8078651(AGE) - 0.000617(NA)
NA	SFI	SFI = 18.4017868 - 0.0002102(NA)
ZN	SE	SE = 79.6486222 + 0.3441225(AGE) - 0.0214282(ZN)
ZN	TST	TST = 412.0454576 + 0.8703263(ZN)
ZN	WASO	WASO = 56.4446407 - 0.8197921(AGE) + 0.1147198(ZN)
ZN	SFI	SFI = 16.9418714 + 0.0591183(ZN)
VIT_B6	SE	SE = 78.7896923 + 0.3437614(AGE) + 0.2710868(VIT_B6)
VIT_B6	TST	TST = 418.5736469 + 1.5910623(VIT_B6)
VIT_B6	WASO	WASO = 58.7900558 - 0.8210737(AGE) - 0.4241434(VIT_B6)
VIT_B6	SFI	SFI = 18.0094374 - 0.1669655(VIT_B6)
VIT_B12	SE	SE = 78.9421544 + 0.3500397(AGE) + 0.0579516(VIT_B12)
VIT_B12	TST	TST = 418.6010009 + 0.7213103(VIT_B12)
VIT_B12	WASO	WASO = 58.0411422 - 0.8245314(AGE) - 0.0248744(VIT_B12)

predictor	outcome	fin_mods
VIT_B12	SFI	$SFI = 12.3160619 + 0.2206331(BMI) - 0.1405317(VIT_B12)$
SFA	SE	$SE = 79.1622917 + 0.3428542(AGE) + 0.0105736(SFA)$
SFA	TST	$TST = 401.3028598 + 0.8085962(SFA)$
SFA	WASO	$WASO = 56.4365085 - 0.8326719(AGE) + 0.0662029(SFA)$
SFA	SFI	$SFI = 17.5882713 + 0.0015996(SFA)$
UFA	SE	$SE = 78.4733046 + 0.3406287(AGE) + 0.0209417(UFA)$
UFA	TST	$TST = 403.0030855 + 0.3917599(UFA)$
UFA	WASO	$WASO = 56.4202609 - 0.8282606(AGE) + 0.0327096(UFA)$
UFA	SFI	$SFI = 17.9593455 - 0.0067424(UFA)$
VIT_D	SE	$SE = 79.130551 + 0.3465943(AGE) + 0.039691(VIT_D)$
VIT_D	TST	$TST = 422.5330658 - 0.0609819(VIT_D)$
VIT_D	WASO	$WASO = 57.5685409 - 0.8198976(AGE) + 0.0433248(VIT_D)$
VIT_D	SFI	$SFI = 17.8103372 - 0.0362919(VIT_D)$
FRUIT	SE	$SE = 79.3893383 + 0.3496207(AGE) - 0.1188044(FRUIT)$
FRUIT	TST	$TST = 419.7078784 + 2.0589025(FRUIT)$
FRUIT	WASO	$WASO = 57.8467071 - 0.82737(AGE) + 0.1223589(FRUIT)$
FRUIT	SFI	$SFI = 17.8412676 - 0.1733381(FRUIT)$
VEG	SE	$SE = 78.6162 + 0.344495(AGE) + 0.4412635(VEG)$
VEG	TST	$TST = 423.5119633 - 0.729483(VEG)$
VEG	WASO	$WASO = 59.5407662 - 0.822279(AGE) - 0.9614737(VEG)$
VEG	SFI	$SFI = 18.7252308 - 0.6281671(VEG)$
F_V	SE	$SE = 79.0808771 + 0.3371408(AGE) + 0.1732228(F_V)$
F_V	TST	$TST = 421.1740678 + 0.3521434(F_V)$
F_V	WASO	$WASO = 58.6193998 - 0.8039037(AGE) - 0.431018(F_V)$
F_V	SFI	$SFI = 18.7216415 - 0.3682486(F_V)$
EGG	SE	$SE = 79.4854563 + 0.3351127(AGE) + 0.2720686(EGG)$
EGG	TST	$TST = 423.1419178 - 1.482225(EGG)$
EGG	WASO	$WASO = 57.9607989 - 0.8329613(AGE) + 0.3127775(EGG)$
EGG	SFI	$SFI = 17.3979455 + 0.3764494(EGG)$
NUTS	SE	$SE = 79.4534157 + 0.343422(AGE) - 0.0414475(NUTS)$
NUTS	TST	$TST = 420.349746 + 2.2528217(NUTS)$
NUTS	WASO	$WASO = 57.2553611 - 0.8120348(AGE) + 0.3699065(NUTS)$
NUTS	SFI	$SFI = 17.573817 + 0.0664378(NUTS)$
DAIRY	SE	$SE = 79.3834264 + 0.3445364(AGE) + 0.0024398(DAIRY)$
DAIRY	TST	$TST = 413.9837642 + 5.2428273(DAIRY)$
DAIRY	WASO	$WASO = 57.9865522 - 0.8212614(AGE) - 0.1031703(DAIRY)$
DAIRY	SFI	$SFI = 11.8914408 + 0.2388738(BMI) - 0.4510953(DAIRY)$
ADDED_SUGAR	SE	$SE = 79.282094 + 0.3373575(AGE) + 0.0367841(ADDED_SUGAR)$
ADDED_SUGARTST	TST	$TST = 407.9343717 + 1.7063828(ADDED_SUGAR)$
ADDED_SUGARWASO	WASO	$WASO = 57.1208598 - 0.8707198(AGE) + 0.2502314(ADDED_SUGAR)$
ADDED_SUGARSFI	SFI	$SFI = 17.1931796 + 0.0522482(ADDED_SUGAR)$

```

sleep_diet <- readxl::read_excel("data/CM + DQ Study Diet and Sleep_8.24.2022_HB.xlsx", sheet = "Sleep-
  janitor::clean_names() %>%
  filter(
    condition == "Aligned"
  )

outs2 <-
  sleep_diet %>%
  select(

```

```

    en, food_wt_f, ed,
    prot, fat, cho,
    prot_plant, prot_anl, fiber,
    ca, mg, na, sfa, ufa,
    fruit, veg, f_v,
    egg, dairy,
    added_sugar
  )

covs2 <-
  sleep_diet %>%
  select(
    sex, age, bmi, id
  )

preds2 <-
  sleep_diet %>%
  select(
    se,
    tst,
    waso,
    sfi
  )

sleep_diet_models <- loop_models(outs2, preds2, covs2)

```

```

## [1] "en vs se"
## [1] "food_wt_f vs se"
## [1] "ed vs se"
## [1] "prot vs se"
## [1] "fat vs se"
## [1] "cho vs se"
## [1] "prot_plant vs se"
## [1] "prot_anl vs se"
## [1] "fiber vs se"
## [1] "ca vs se"
## [1] "mg vs se"
## [1] "na vs se"
## [1] "sfa vs se"
## [1] "ufa vs se"
## [1] "fruit vs se"
## [1] "veg vs se"
## [1] "f_v vs se"
## [1] "egg vs se"
## [1] "dairy vs se"
## [1] "added_sugar vs se"
## [1] "en vs tst"
## [1] "food_wt_f vs tst"
## [1] "ed vs tst"
## [1] "prot vs tst"
## [1] "fat vs tst"
## [1] "cho vs tst"
## [1] "prot_plant vs tst"
## [1] "prot_anl vs tst"

```



```

## [1] "fiber vs tst"
## [1] "ca vs tst"
## [1] "mg vs tst"
## [1] "na vs tst"
## [1] "sfa vs tst"
## [1] "ufa vs tst"
## [1] "fruit vs tst"
## [1] "veg vs tst"
## [1] "f_v vs tst"
## [1] "egg vs tst"
## [1] "dairy vs tst"
## [1] "added_sugar vs tst"
## [1] "en vs waso"
## [1] "food_wt_f vs waso"
## [1] "ed vs waso"
## [1] "prot vs waso"
## [1] "fat vs waso"
## [1] "cho vs waso"
## [1] "prot_plant vs waso"
## [1] "prot_animal vs waso"
## [1] "fiber vs waso"
## [1] "ca vs waso"
## [1] "mg vs waso"
## [1] "na vs waso"
## [1] "sfa vs waso"
## [1] "ufa vs waso"
## [1] "fruit vs waso"
## [1] "veg vs waso"
## [1] "f_v vs waso"
## [1] "egg vs waso"
## [1] "dairy vs waso"
## [1] "added_sugar vs waso"
## [1] "en vs sfi"
## [1] "food_wt_f vs sfi"
## [1] "ed vs sfi"
## [1] "prot vs sfi"
## [1] "fat vs sfi"
## [1] "cho vs sfi"
## [1] "prot_plant vs sfi"
## [1] "prot_animal vs sfi"
## [1] "fiber vs sfi"
## [1] "ca vs sfi"
## [1] "mg vs sfi"
## [1] "na vs sfi"
## [1] "sfa vs sfi"
## [1] "ufa vs sfi"
## [1] "fruit vs sfi"
## [1] "veg vs sfi"
## [1] "f_v vs sfi"
## [1] "egg vs sfi"
## [1] "dairy vs sfi"
## [1] "added_sugar vs sfi"

```

```

sleep_diet_output <- do_write_mods(sleep_diet_models) %>%
  mutate(
    predictor = predictor %>% toupper(),
    outcome = outcome %>% toupper()
  )

sleep_diet_output %>% knitr::kable()

```

predictor	outcome	fin_mods
SE	EN	EN = 835.7312378 + 13.770745(SE)
SE	FOOD_WT_F	FOOD_WT_F = 533.3701394 + 7.3856237(SE)
SE	ED	ED = 2.046405 - 0.0035624(SE)
SE	PROT	PROT = 58.145773 - 17.0031877(SEX) + 0.640252(SE)
SE	FAT	FAT = - 9.5772426 + 1.0185212(SE)
SE	CHO	CHO = 145.4126605 + 0.985472(SE)
SE	PROT_PLANT	PROT_PLANT = 1.1431377 + 0.0055074(SE)
SE	PROT_ANI	PROT_ANI = 2.0433405 + 0.3224127(AGE) - 5.5951812(SEX) + 0.0177169(SE)
SE	FIBER	FIBER = 14.8354537 + 0.0664378(SE)
SE	CA	CA = 187.970159 + 8.5724216(SE)
SE	MG	MG = 315.4570512 + 0.1555085(SE)
SE	NA	NA = - 56.0174932 + 41.5482126(SE)
SE	SFA	SFA = - 11.4910788 + 0.416451(SE)
SE	UFA	UFA = 0.1048835 + 0.5400694(SE)
SE	FRUIT	FRUIT = 0.8837104 + 0.0038913(SE)
SE	VEG	VEG = 1.6497139 + 0.001113(SE)
SE	F_V	F_V = 2.8216052 + 0.0017255(SE)
SE	EGG	EGG = - 0.9321256 + 0.0178245(SE)
SE	DAIRY	DAIRY = - 3.3926514 + 0.0667539(BMI) + 0.034577(SE)
SE	ADDED_SUGAR	ADDED_SUGAR = - 5.7854924 + 0.6803585(BMI) - 0.0277414(SE)
TST	EN	EN = 1259.6156783 + 1.8905539(TST)
TST	FOOD_WT_F	FOOD_WT_F = 897.7136733 + 0.690113(TST)
TST	ED	ED = 1.6221078 + 0.0002545(TST)
TST	PROT	PROT = 70.7840839 - 20.2202897(SEX) + 0.1135693(TST)
TST	FAT	FAT = 28.9727017 + 0.1228189(TST)
TST	CHO	CHO = 192.5865907 + 0.0954998(TST)
TST	PROT_PLANT	PROT_PLANT = 0.3014558 + 0.0031433(TST)
TST	PROT_ANI	PROT_ANI = 0.6454524 + 0.3188315(AGE) - 5.8729873(SEX) + 0.0080362(TST)
TST	FIBER	FIBER = 18.0926944 + 0.0062574(TST)
TST	CA	CA = 674.6554499 + 0.6504335(TST)
TST	MG	MG = 252.2052542 + 0.1821627(TST)
TST	NA	NA = 2209.4125856 + 3.370839(TST)
TST	SFA	SFA = 8.9714284 + 0.0391239(TST)
TST	UFA	UFA = 16.998444 + 0.0734942(TST)
TST	FRUIT	FRUIT = 0.992526 + 0.0005602(TST)
TST	VEG	VEG = 1.1477759 + 0.0014204(TST)
TST	F_V	F_V = 2.2297853 + 0.0017623(TST)
TST	EGG	EGG = 0.6548522 - 5e-06(TST)
TST	DAIRY	DAIRY = - 1.1371512 + 0.0733481(BMI) + 0.0016069(TST)
TST	ADDED_SUGAR	ADDED_SUGAR = - 7.9078621 + 0.6735658(BMI) - 0.0004721(TST)
WASO	EN	EN = 2059.1356173 + 0.0062778(WASO)
WASO	FOOD_WT_F	FOOD_WT_F = 1171.4420555 + 0.5210871(WASO)

predictor	outcome	fin_mods
WASO	ED	ED = 1.7643985 - 0.0009956(WASO)
WASO	PROT	PROT = 105.6589151 - 14.3650681(SEX) + 0.1803274(WASO)
WASO	FAT	FAT = 83.3993819 - 0.0701642(WASO)
WASO	CHO	CHO = 234.5672402 - 0.0458052(WASO)
WASO	PROT_PLANT	PROT_PLANT = 1.5390013 + 0.0027052(WASO)
WASO	PROT_ANI	PROT_ANI = 2.4960004 + 0.3420231(AGE) - 5.7334668(SEX) + 0.0210817(WASO)
WASO	FIBER	FIBER = 21.7014324 - 0.0276924(WASO)
WASO	CA	CA = 910.4147942 + 1.1375496(WASO)
WASO	MG	MG = 321.2085267 + 0.2323729(WASO)
WASO	NA	NA = 3709.1713049 - 2.1186488(WASO)
WASO	SFA	SFA = 27.3746538 - 0.0530785(WASO)
WASO	UFA	UFA = 48.5369505 - 0.0120987(WASO)
WASO	FRUIT	FRUIT = 1.1521129 + 0.002233(WASO)
WASO	VEG	VEG = 1.8875236 - 0.0039948(WASO)
WASO	F_V	F_V = 3.0217758 - 0.0013463(WASO)
WASO	EGG	EGG = 0.783064 - 0.0037604(WASO)
WASO	DAIRY	DAIRY = - 0.3787944 + 0.0744042(BMI) - 0.0027103(WASO)
WASO	ADDED_SUGAR	ADDED_SUGAR = - 8.3615629 + 0.6755558(BMI) + 0.0058956(WASO)
SFI	EN	EN = 2086.7981045 - 1.5670893(SFI)
SFI	FOOD_WT_F	FOOD_WT_F = 1163.9758435 + 1.4608919(SFI)
SFI	ED	ED = 1.7665459 - 0.0020937(SFI)
SFI	PROT	PROT = 114.1030103 - 14.955722(SEX) - 0.0844072(SFI)
SFI	FAT	FAT = 83.0745686 - 0.1203879(SFI)
SFI	CHO	CHO = 238.0729376 - 0.2915459(SFI)
SFI	PROT_PLANT	PROT_PLANT = 1.4700134 + 0.0092927(SFI)
SFI	PROT_ANI	PROT_ANI = 3.3025684 + 0.3265412(AGE) - 5.5649358(SEX) + 0.0093097(SFI)
SFI	FIBER	FIBER = 21.0188813 - 0.0159254(SFI)
SFI	CA	CA = 1003.9061964 - 3.0779388(SFI)
SFI	MG	MG = 349.2975901 - 1.143945(SFI)
SFI	NA	NA = 3801.7291424 - 9.4983151(SFI)
SFI	SFA	SFA = 27.1118942 - 0.0900165(SFI)
SFI	UFA	UFA = 48.158164 - 0.0023522(SFI)
SFI	FRUIT	FRUIT = 1.1113693 + 0.0067475(SFI)
SFI	VEG	VEG = 2.0478693 - 0.0170605(SFI)
SFI	F_V	F_V = 3.1487624 - 0.0099125(SFI)
SFI	EGG	EGG = 0.8186122 - 0.0094717(SFI)
SFI	DAIRY	DAIRY = - 0.4719201 + 0.0759268(BMI) - 0.0021414(SFI)
SFI	ADDED_SUGAR	ADDED_SUGAR = - 7.839931 + 0.6759064(BMI) - 0.0193221(SFI)