

```
/*Sensitivity Analyses - exclude participants with elevated depressive  
symptoms*/
```

```
/*Check depression variable*/
```

```
proc means data=library.march;  
var r8cesd;  
run;
```

```
data temp; set library.march;
```

```
/*eliminate depressed*/
```

```
if r8cesd>=4 then delete;  
run;
```

```
/*Center variables*/
```

```
PROC STANDARD data=temp MEAN=0 OUT=TEMP;
```

```
VAR
```

```
r8cogtot
```

```
r9cogtot
```

```
r10cogtot
```

```
r11cogtot
```

```
r8agey_b
```

```
r9agey_b
```

```
r10agey_b
```

```
r11agey_b
```

```
tr8bmi
```

```
tr9bmi
```

```
tr10bmi
```

```
tr11bmi
```

```
lon6
```

```
lon8
```

```
lon10
```

```

lon12
int6
int8
int10
int12
cyn6
cyn8
cyn10
cyn12
;
RUN;

/*Change data format - horizontal to vertical*/
data temp;
set temp;

cogtot1=r8cogtot;
cogtot2=r9cogtot;
cogtot3=r10cogtot;
cogtot4=r11cogtot;

cyn1=cyn6;
cyn2=cyn8;
cyn3=cyn10;
cyn4=cyn12;

lon1=lon6;
lon2=lon8;
lon3=lon10;
lon4=lon12;

age1=r8agey_b;

```

```
age2=r9agey_b;  
age3=r10agey_b;  
age4=r11agey_b;
```

```
bmi1=tr8bmi;  
bmi2=tr9bmi;  
bmi3=tr10bmi;  
bmi4=tr11bmi;
```

```
int1=int6;  
int2=int8;  
int3=int10;  
int4=int12;
```

```
lower1=h8lower;  
lowmid1=h8lowmid;  
upmid1=h8upmid;  
upper1=h8upper;
```

```
lower2=h9lower;  
lowmid2=h9lowmid;  
upmid2=h9upmid;  
upper2=h9upper;
```

```
lower3=h10lower;  
lowmid3=h10lowmid;  
upmid3=h10upmid;  
upper3=h10upper;
```

```
lower4=h11lower;  
lowmid4=h11lowmid;  
upmid4=h11upmid;
```

```
upper4=h11upper;
```

```
eh1=r8exhealth;
```

```
eh2=r9exhealth;
```

```
eh3=r10exhealth;
```

```
eh4=r11exhealth;
```

```
vh1=r8vghealth;
```

```
vh2=r9vghealth;
```

```
vh3=r10vghealth;
```

```
vh4=r11vghealth;
```

```
fh1=r8fhealth;
```

```
fh2=r9fhealth;
```

```
fh3=r10fhealth;
```

```
fh4=r11fhealth;
```

```
ph1=r8phealth;
```

```
ph2=r9phealth;
```

```
ph3=r10phealth;
```

```
ph4=r11phealth;
```

```
ad1=R8ADL;
```

```
ad2=R9ADL;
```

```
ad3=R10ADL;
```

```
ad4=R11ADL;
```

```
array cogtot[4];
```

```
array cyn[4];
```

```
array lon[4];
```

```
array age[4];
```

```
array bmi[4];
```

```
array int[4];
```

```
array ad[4];
```

```

array split[4];
array widow[4];
array single[4];

array quit[4];
array smoker[4];

array teatot[4];
array atrisk[4];

array lower[4];
array lowmid[4];
array upmid[4];
array upper[4];

array eh[4];
array vh[4];
array fh[4];
array ph[4];

do time = 1 to 4;

CT=cogtot[time];
CH=cyn[time];
L=lon[time];
AGEr=age[time];
BMIr=bmi[time];
INTr=int[time];
splitr=split[time];
widowr=widow[time];
singler=single[time];

```

```

quitr=quit[time];
smokerr=smoker[time];
teatotr=teatot[time];
atriskr=atrisk[time];
low=lower[time];
lmid=lowmid[time];
umid=upmid[time];
up=upper[time];
excellent=eh[time];
verygood=vh[time];
fair=fh[time];
poor=ph[time];
activity=ad[time];

output;
end;

keep hhidpn time CT CH L AGEr BMIr INTr
splitr widowr singler quitr smokerr teatotr atriskr
black other rahispan gender nohs ged scollege college
low lmid umid up
excellent verygood fair poor
activity
;

run;

/*Change time variable*/
data temp; set temp;
time=time-1;
run;

```

```
ods pdf file='C:\Users\Croissant\Desktop\Thesis Pub\Take
2\Revision\Materials\Results Files\S1(no dx)_Model_0.pdf';
```

```
/*Unconditional model*/
```

```
proc mixed covtest info data=temp;
```

```
class hhidpn;
```

```
model ct=time/solution ddfm=bw;
```

```
random intercept time/ SUB=HHIDPN TYPE=UN;
```

```
RUN;
```

```
ods pdf close;
```

```
ods pdf file='C:\Users\Croissant\Desktop\Thesis Pub\Take
2\Revision\Materials\Results Files\S1(no dx)_Model_1.pdf';
```

```
/*Intercepts and slopes as outcomes model*/
```

```
/*Model 1 - just predictors of interest*/
```

```
PROC MIXED COVTEST INFO DATA=temp;
```

```
CLASS HHIDPN;
```

```
MODEL CT = L CH time time*L time*CH/ SOLUTION DDFM=BW cl;
```

```
RANDOM INTERCEPT TIME / SUB=HHIDPN TYPE=UN;
```

```
RUN;
```

```
ods pdf close;
```

```
ods pdf file='C:\Users\Croissant\Desktop\Thesis Pub\Take
2\Revision\Materials\Results Files\S1(no dx)_Model_2.pdf';
```

```
/*Model 2 - add demographics*/
```

```
PROC MIXED COVTEST INFO DATA=temp;
```

```
CLASS HHIDPN black other rahispan gender nohs ged scollege college low lmid
umid up;
```

```
MODEL CT =
```

```
black other rahispan
```

```
gender
```

```
nohs ged scollege college
```

```
ager
```

```

low lmid umid up

L CH time time*L time*CH/ SOLUTION DDFM=BW cl;
RANDOM INTERCEPT TIME / SUB=HHIDPN TYPE=UN;
RUN;

ods pdf close;

ods pdf file='C:\Users\Croissant\Desktop\Thesis Pub\Take
2\Revision\Materials\Results Files\S1(no dx)_Model_3.pdf';

/*Model 3 - add health behaviors*/
PROC MIXED COVTEST INFO DATA=temp;
CLASS HHIDPN black other rahispan gender nohs ged scollege college
excellent verygood fair poor
activity
low lmid umid up;
MODEL CT =
black other rahispan
gender
nohs ged scollege college
ager
excellent verygood fair poor
activity
low lmid umid up
L CH time time*L time*CH/ SOLUTION DDFM=BW cl;
RANDOM INTERCEPT TIME / SUB=HHIDPN TYPE=UN;
RUN;

ods pdf close;

ods pdf file='C:\Users\Croissant\Desktop\Thesis Pub\Take
2\Revision\Materials\Results Files\S1(no dx)_Model_4.pdf';

/*Model 4 - add social*/
PROC MIXED COVTEST INFO DATA=temp;

```



```

CLASS HHIDPN black other rahispan gender nohs ged scollege college
excellent verygood fair poor
activity
low lmid umid up
splitr widowr singler;
MODEL CT =
black other rahispan
gender
nohs ged scollege college
ager
excellent verygood fair poor
activity
splitr widowr singler
intr
low lmid umid up
L CH time time*L time*CH/ SOLUTION DDFM=BW cl;
RANDOM INTERCEPT TIME / SUB=HHIDPN TYPE=UN;
RUN;

ods pdf close;

ods pdf file='C:\Users\Croissant\Desktop\Thesis Pub\Take
2\Revision\Materials\Results Files\S1(no dx)_Model_5.pdf';

/*Model 5 - add social as predictor of cognitive decline*/
PROC MIXED COVTEST INFO DATA=temp;
CLASS HHIDPN black other rahispan
gender nohs ged scollege college
low lmid umid up
excellent verygood fair poor
activity
splitr widowr singler;
MODEL CT =

```

```

/*dem*/
black other rahispan
gender
nohs ged scollege college
ager
low lmid umid up
/*health and limitations*/
excellent verygood fair poor
activity
/*time*/
time
/*psychosocial*/
splitr widowr singler
intr
L CH time*L time*CH intr*time/ SOLUTION DDFM=BW cl;
RANDOM INTERCEPT TIME / SUB=HHIDPN TYPE=UN;
RUN;

ods pdf close;

```