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*****
*****Doctorate Thesis Do-File*****
*****
*Importing the data
import excel "/Users/dshdoshdshdosh/Desktop/Doc
> torate thesis/Final data/Final data for analysi
> s/Copy of All_Merged_with food.xlsx", sheet("AL
> L_MERGED") firstrow clear

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*Cleaning the data
drop IL10_P1
drop IL12p70_P1
drop IL13_P1
drop IL17A_P1
drop IL1b_P1
drop IL4_P1
drop IL8_P1
drop MCP1_P1
drop TNFa_P1
drop VEGF_P1
drop Ghrelin_P1
drop Insulin_P1
drop Leptin_P1
drop MP0_P1
drop MMP9_P1
drop CRP_P1
drop Resistin_P1
drop Leptin_P2
drop VEGF_P2
drop MCP1_P2
drop IL10_P2
drop IL8_P2
drop Insulin_P2
drop CRP_P2
drop IFNgamma_P1
drop Visit_dateP1
drop Visit_dateP2
drop Waist_cm1
drop Height_cm1
drop Weight_kg1
drop Height_cm2
drop Weight_kg2
drop AgeP1
drop AgeP2
drop BMI1
drop BMI2
drop WH0cat1
drop OBWH01
drop WH0cat2

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drop OBWH02
drop WH0catP1
drop WH0catP2
drop Waist_cm2
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*Categorization:
tab Sex
gen sex_n=.
replace sex_n = 1 if Sex == 1
replace sex_n = 2 if Sex == 2
label define Sex 1 "Male" 2 "Female"
label values sex_n Sex
tab sex_n

tab med_hist
gen med_hist_n=.
replace med_hist_n = 0 if med_hist == 0
replace med_hist_n = 1 if med_hist == 1
replace med_hist_n = 2 if med_hist == 2
replace med_hist_n = 3 if med_hist == 3
replace med_hist_n = 4 if med_hist == 4
replace med_hist_n = 5 if med_hist == 5
replace med_hist_n = 99 if med_hist == 99
label define med_hist 0 "No health problem" 1 "Diabetes" 2 "Heart
Disease" 3 "Anxiety" 4 "Depression" 5 "Asthma" 99 "Others"
label values med_hist_n med_hist
tab med_hist_n
tab medical_history
gen medical_history_n =.
replace medical_history_n = 0 if medical_history == 0
replace medical_history_n = 1 if medical_history == 1
replace medical_history_n = 2 if medical_history == 2
replace medical_history_n = 3 if medical_history == 3
label define medical_history 0 "No health problem" 1 "Diabetes" 2
"Heart disease" 3 "Others"
label value medical_history_n medical_history
tab medical_history_n

tab meds
gen meds_n=.
replace meds_n = 0 if meds == 0
replace meds_n = 1 if meds == 1
label define meds 0 "Not on medications" 1 " On medications"
label value meds_n meds
tab meds_n

tab mom_diab
gen mom_diab_n=.
replace mom_diab_n = 0 if mom_diab == 0

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replace mom_diab_n = 1 if mom_diab == 1
replace mom_diab_n = 2 if mom_diab == 2
label define mom_diab 0 "Mother not diabetic" 1 "Mother diabetic" 2 "I
do not know"
label value mom_diab_n mom_diab
tab mom_diab_n

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tab dad_diab
gen dad_diab_n=.
replace dad_diab_n = 0 if dad_diab == 0
replace dad_diab_n = 1 if dad_diab == 1
replace dad_diab_n = 2 if dad_diab == 2
label define dad_diab 0 "Father not diabetic" 1 "Father diabetic" 2 "I
do not know"
label value dad_diab_n dad_diab
tab dad_diab_n

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tab mom_edu
gen mom_edu_n=.
replace mom_edu_n = 0 if mom_edu == 0
replace mom_edu_n = 1 if mom_edu == 1
replace mom_edu_n = 2 if mom_edu == 2
replace mom_edu_n = 3 if mom_edu == 3
replace mom_edu_n = 4 if mom_edu == 4
replace mom_edu_n = 5 if mom_edu == 5
replace mom_edu_n = 6 if mom_edu == 6
label define mom_edu 0 "No degree" 1 "Less than highschool" 2
"Highschool degree" 3 "Diplomate or certificate from institute" 4
"Bachelor degree" 5 "Master or Doctorate" 6 "I do not know"
label value mom_edu_n mom_edu
tab mom_edu_n
tab mother_ed
gen mother_ed_n=.
replace mother_ed_n = 0 if mom_edu_n == 0 | mom_edu_n == 1
replace mother_ed_n = 1 if mom_edu_n == 2 | mom_edu_n == 3
replace mother_ed_n = 2 if mom_edu_n == 4
replace mother_ed_n = 3 if mom_edu_n == 5
replace mother_ed_n = 4 if mom_edu_n == 6
label define mom_edu_n 0 "Less than highschool" 1 " Highschool or
Diploma" 2 "Bachelor degree" 3 "Masters or Doctorate" 4 "I do not
know"
label value mother_ed_n mom_edu_n
tab mother_ed_n

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tab dad_edu
gen dad_edu_n=.
replace dad_edu_n = 0 if dad_edu == 0
replace dad_edu_n = 1 if dad_edu == 1
replace dad_edu_n = 2 if dad_edu == 2
replace dad_edu_n = 3 if dad_edu == 3

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replace dad_edu_n = 4 if dad_edu == 4
replace dad_edu_n = 5 if dad_edu == 5
replace dad_edu_n = 6 if dad_edu == 6
label define dad_edu 0 "No degree" 1 "Less than highschool" 2
"Highschool degree" 3 "Diplomate or certificate from institute" 4
"Bachelor degree" 5 "Master or Doctorate" 6 "I do not know"
label value dad_edu_n dad_edu
tab dad_edu_n
tab fath_ed
gen fath_ed_n=.
replace fath_ed_n = 0 if dad_edu_n == 0 | dad_edu_n == 1
replace fath_ed_n = 1 if dad_edu_n == 2 | dad_edu_n == 3
replace fath_ed_n = 2 if dad_edu_n == 4
replace fath_ed_n = 3 if dad_edu_n == 5
replace fath_ed_n = 4 if dad_edu_n == 6
label define dad_edu_n 0 "Less than highschool" 1 " Highschool or
Diploma" 2 "Bachelor degree" 3 "Masters or Doctorate" 4 "I do not
know"
label value fath_ed_n dad_edu_n
tab fath_ed_n

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tab sleep_weekday
gen sleep_weekday_n=.
replace sleep_weekday_n = 1 if sleep_weekday == 1
replace sleep_weekday_n = 2 if sleep_weekday == 2
replace sleep_weekday_n = 3 if sleep_weekday == 3
replace sleep_weekday_n = 21 if sleep_weekday == 21
replace sleep_weekday_n = 22 if sleep_weekday == 22
replace sleep_weekday_n = 23 if sleep_weekday == 23
replace sleep_weekday_n = 24 if sleep_weekday == 24
replace sleep_weekday_n = 99 if sleep_weekday == 99
label define sleep_weekday 1 "1:00 a.m" 2 "2:00 a.m" 3 "3:00 a.m" 21
"9:00 p.m" 22 "10:00 p.m" 23 "11:00 p.m" 24 "12:00 a.m" 99 "Other"
label values sleep_weekday_n sleep_weekday
tab sleep_weekday_n

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tab wakeup_weekday
gen wakeup_weekday_n=.
replace wakeup_weekday_n = 5 if wakeup_weekday == 5
replace wakeup_weekday_n = 6 if wakeup_weekday == 6
replace wakeup_weekday_n = 7 if wakeup_weekday == 7
replace wakeup_weekday_n = 4 if wakeup_weekday == 4
label define wakeup_weekday 5 "5:00 a.m" 6 "6:00 a.m" 7 "7:00 a.m" 4
"4:00 a.m"
label value wakeup_weekday_n wakeup_weekday
tab wakeup_weekday_n

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tab Sleep_time_weekday
gen Sleep_time_weekday_n=.

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replace Sleep_time_weekday_n= 1 if Sleep_time_weekday == 1
replace Sleep_time_weekday_n= 2 if Sleep_time_weekday == 2
replace Sleep_time_weekday_n= 3 if Sleep_time_weekday == 3
replace Sleep_time_weekday_n= 4 if Sleep_time_weekday == 4
replace Sleep_time_weekday_n= 5 if Sleep_time_weekday == 5
replace Sleep_time_weekday_n= 6 if Sleep_time_weekday == 6
replace Sleep_time_weekday_n= 7 if Sleep_time_weekday == 7
replace Sleep_time_weekday_n= 8 if Sleep_time_weekday == 8
replace Sleep_time_weekday_n= 9 if Sleep_time_weekday == 9
label define Sleep_time_weekday 1 " 1hr/night" 2 "2hr/night" 3 "3hr/
night" 4 "4hr/night" 5 "5hr/night" 6 "6hr/night" 7 "7hr/night" 8 "8hr/
night" 9 "9hr/night"
label values Sleep_time_weekday_n Sleep_time_weekday
tab Sleep_time_weekday_n

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tab sleep_weekend
gen sleep_weekend_n=.
replace sleep_weekend_n = 1 if sleep_weekend == 1
replace sleep_weekend_n = 2 if sleep_weekend == 2
replace sleep_weekend_n = 3 if sleep_weekend == 3
replace sleep_weekend_n = 4 if sleep_weekend == 4
replace sleep_weekend_n = 5 if sleep_weekend == 5
replace sleep_weekend_n = 6 if sleep_weekend == 6
replace sleep_weekend_n = 7 if sleep_weekend == 7
replace sleep_weekend_n = 8 if sleep_weekend == 8
replace sleep_weekend_n = 9 if sleep_weekend == 9
replace sleep_weekend_n = 21 if sleep_weekend == 21
replace sleep_weekend_n = 22 if sleep_weekend == 22
replace sleep_weekend_n = 23 if sleep_weekend == 23
replace sleep_weekend_n = 24 if sleep_weekend == 24
replace sleep_weekend_n = 99 if sleep_weekend == 99
label define sleep_weekend 1 "1:00 a.m" 2 "2:00 a.m" 3 "3:00 a.m" 4
"4:00 a.m" 5 "5:00 a.m" 6 "6:00 a.m" 7 "7:00 a.m" 8 "8:00 a.m" 9 "9:00
a.m" 21 "9:00 p.m" 22 "10:00 p.m" 23 "11:00 p.m" 24 "12:00 a.m" 99
"0ther"
label values sleep_weekend_n sleep_weekend
tab sleep_weekend_n

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tab wakeup_weekend
gen wakeup_weekend_n=.
replace wakeup_weekend_n = 6 if wakeup_weekend == 6
replace wakeup_weekend_n = 7 if wakeup_weekend == 7
replace wakeup_weekend_n = 8 if wakeup_weekend == 8
replace wakeup_weekend_n = 9 if wakeup_weekend == 9
replace wakeup_weekend_n = 10 if wakeup_weekend == 10
replace wakeup_weekend_n = 11 if wakeup_weekend == 11
replace wakeup_weekend_n = 12 if wakeup_weekend == 12
replace wakeup_weekend_n = 13 if wakeup_weekend == 13
replace wakeup_weekend_n = 14 if wakeup_weekend == 14
replace wakeup_weekend_n = 15 if wakeup_weekend == 15

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replace wakeup_weekend_n = 16 if wakeup_weekend == 16
replace wakeup_weekend_n = 17 if wakeup_weekend == 17
replace wakeup_weekend_n = 18 if wakeup_weekend == 18
replace wakeup_weekend_n = 99 if wakeup_weekend == 99
label define wakeup_weekend 6 "6:00 a.m" 7 "7:00 a.m" 8 "8:00 a.m" 9
"9:00 a.m" 10 "10:00 a.m" 11 "11:00 a.m" 12 "12:00 p.m" 13 "1:00 p.m"
14 "2:00 p.m" 15 "3:00 p.m" 16 "4:00 p.m" 17 "5:00 p.m" 18 "6:00 p.m"
99 "Other"
label value wakeup_weekend_n wakeup_weekend
tab wakeup_weekend_n

tab Sleep_time_weekend
gen Sleep_time_weekend_n=.
replace Sleep_time_weekend_n= 1 if Sleep_time_weekend == 1
replace Sleep_time_weekend_n= 4 if Sleep_time_weekend == 4
replace Sleep_time_weekend_n= 5 if Sleep_time_weekend == 5
replace Sleep_time_weekend_n= 6 if Sleep_time_weekend == 6
replace Sleep_time_weekend_n= 7 if Sleep_time_weekend == 7
replace Sleep_time_weekend_n= 8 if Sleep_time_weekend == 8
replace Sleep_time_weekend_n= 9 if Sleep_time_weekend == 9
replace Sleep_time_weekend_n= 10 if Sleep_time_weekend == 10
replace Sleep_time_weekend_n= 11 if Sleep_time_weekend == 11
replace Sleep_time_weekend_n= 12 if Sleep_time_weekend == 12
replace Sleep_time_weekend_n= 13 if Sleep_time_weekend == 13
replace Sleep_time_weekend_n= 14 if Sleep_time_weekend == 14
replace Sleep_time_weekend_n= 15 if Sleep_time_weekend == 15
replace Sleep_time_weekend_n= 18 if Sleep_time_weekend == 18
label define Sleep_time_weekend 1 "1hr/night" 4 "4hr/night" 5 "5hr/
night" 6 "6hr/night" 7 "7hr/night" 8 "8hr/night" 9 "9hr/night" 10
"10hr/night" 11 "11hr/night" 12 "12hr/night" 13 "13hr/night" 14 "14hr/
night" 15 "15hr/night" 18 "18hr/night"
label values Sleep_time_weekend_n Sleep_time_weekend
tab Sleep_time_weekend_n

tab interrupted_sleep
gen interrupted_sleep_n=.
replace interrupted_sleep_n=0 if interrupted_sleep == 0
replace interrupted_sleep_n=1 if interrupted_sleep == 1
replace interrupted_sleep_n=2 if interrupted_sleep == 2
replace interrupted_sleep_n=3 if interrupted_sleep == 3
replace interrupted_sleep_n=4 if interrupted_sleep == 4
label define interrupted_sleep 0 "Not at all" 1 "Slightly often" 2
"Often" 3 "Very often" 4 "Extremely often"
label value interrupted_sleep_n interrupted_sleep
tab interrupted_sleep_n
tab interrupted_sleep_bi
gen interrupted_sleep_bi_n =.
replace interrupted_sleep_bi_n = 0 if interrupted_sleep_bi == 0
replace interrupted_sleep_bi_n = 1 if interrupted_sleep_bi == 1 |
interrupted_sleep_bi == 2

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label define interrupted_sleep_bi 0 "No" 1 "Yes"
label values interrupted_sleep_bi_n interrupted_sleep_bi
tab interrupted_sleep_bi_n

tab wakeup_night
gen wakeup_night_n=.
replace wakeup_night_n = 0 if wakeup_night == 0
replace wakeup_night_n = 1 if wakeup_night == 1
replace wakeup_night_n = 2 if wakeup_night == 2
label define wakeup_night 0 "No" 1 "Always" 2 "Sometimes"
label value wakeup_night_n wakeup_night
tab wakeup_night_n
tab wakeupnight_bin
gen wakeupnight_bin_n=.
replace wakeupnight_bin_n = 0 if wakeup_night_n == 0
replace wakeupnight_bin_n = 1 if wakeup_night_n == 1 | wakeup_night_n
== 2
label define wakeup_night_n 0 "No" 1 "Yes"
label value wakeupnight_bin_n wakeup_night_n
tab wakeupnight_bin_n

describe sleepy_day
tab sleepy_day
gen sleepy_day_n=.
replace sleepy_day_n = 0 if sleepy_day == 0
replace sleepy_day_n = 1 if sleepy_day == 1
replace sleepy_day_n = 2 if sleepy_day == 2
label define sleepy_day 0 "No" 1 "Yes" 2 "Sometimes"
label value sleepy_day_n sleepy_day
tab sleepy_day_n
tab sleepy_day_bi
gen sleepy_day_bi_n =.
replace sleepy_day_bi_n = 0 if sleepy_day_bi == 0
replace sleepy_day_bi_n = 1 if sleepy_day_bi == 1 | sleepy_day_bi == 2
label define sleepy_day_bi 0 "No" 1 "Yes"
label values sleepy_day_bi_n sleepy_day_bi
tab sleepy_day_bi_n

describe hard_wakeup
tab hard_wakeup
gen hard_wakeup_n=.
replace hard_wakeup_n = 0 if hard_wakeup == 0
replace hard_wakeup_n = 1 if hard_wakeup == 1
replace hard_wakeup_n = 2 if hard_wakeup == 2
label define hard_wakeup 0 "No" 1 "Yes" 2 "Sometimes"
label value hard_wakeup_n hard_wakeup
tab hard_wakeup_n
tab hard_wakeup_bi
gen hard_wakeup_bi_n =.
replace hard_wakeup_bi_n = 0 if hard_wakeup_bi == 0

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replace hard_wakeup_bi_n = 1 if hard_wakeup_bi == 1 | hard_wakeup_bi
== 2
label define hard_wakeup_bi 0 "No" 1 "Yes"
label values hard_wakeup_bi_n hard_wakeup_bi
tab hard_wakeup_bi_n

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describe diff_fall_asleep
tab diff_fall_asleep
gen diff_fall_asleep_n=.
replace diff_fall_asleep_n = 0 if diff_fall_asleep == 0
replace diff_fall_asleep_n = 1 if diff_fall_asleep == 1
replace diff_fall_asleep_n = 2 if diff_fall_asleep == 2
replace diff_fall_asleep_n = 3 if diff_fall_asleep == 3
replace diff_fall_asleep_n = 4 if diff_fall_asleep == 4
label define diff_fall_asleep 0 "Not at all" 1 "Slightly often" 2
"Often" 3 "Very often" 4 "Extremely often"
label value diff_fall_asleep_n diff_fall_asleep
tab diff_fall_asleep_n
tab diff_fall_asleep_bi
gen diff_fall_asleep_bi_n = .
replace diff_fall_asleep_bi_n = 0 if diff_fall_asleep_n == 0
replace diff_fall_asleep_bi_n = 1 if diff_fall_asleep_n == 1 |
diff_fall_asleep_n ==2 | diff_fall_asleep_n ==3 | diff_fall_asleep_n
==4
label define diff_fall_asleep_n 0 "Not at all" 1 " Yes"
label values diff_fall_asleep_bi_n diff_fall_asleep_n
tab diff_fall_asleep_bi_n

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describe quality_sleep
tab quality_sleep
gen quality_sleep_n=.
replace quality_sleep_n = 0 if quality_sleep == 0
replace quality_sleep_n = 1 if quality_sleep == 1
replace quality_sleep_n = 2 if quality_sleep == 2
replace quality_sleep_n = 3 if quality_sleep == 3
replace quality_sleep_n = 4 if quality_sleep == 4
replace quality_sleep_n = 5 if quality_sleep == 5
label define quality_sleep 0 "I do not know" 1 "Very bad" 2 "Bad" 3
"Fair" 4 "Good" 5 "Excellent"
label value quality_sleep_n quality_sleep
tab quality_sleep_n

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describe snore
tab snore
gen snore_n=.
replace snore_n = 0 if snore == 0
replace snore_n = 1 if snore == 1
replace snore_n = 2 if snore == 2
label define snore 0 "No" 1 "Yes" 2 "I do not konw"

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label value snore_n snore
tab snore_n
tab snore_bi
gen snore_bi_n =.
replace snore_bi_n = 0 if snore_bi == 0
replace snore_bi_n = 1 if snore_bi == 1 | snore_bi == 2
label define snore_bi 0 "No" 1 "Yes"
label values snore_bi_n snore_bi
tab snore_bi_n

describe nap
tab nap
gen nap_n=.
replace nap_n = 0 if nap == 0
replace nap_n = 1 if nap == 1
replace nap_n = 2 if nap == 2
replace nap_n = 3 if nap == 3
label define nap 0 "No" 1 "Always" 2 "Sometimes" 3 "Others or I do not know"
label value nap_n nap
tab nap_n
tab nap_bi
gen nap_bi_n =.
replace nap_bi_n = 0 if nap_bi == 0
replace nap_bi_n = 1 if nap_bi == 1 | nap_bi == 2
label define nap_bi 0 "No" 1 "Yes"
label values nap_bi_n nap_bi
tab nap_bi_n

describe sleep_apnea_max
tab sleep_apnea_max
gen sleep_apnea_max_n=.
replace sleep_apnea_max_n = 0 if sleep_apnea_max == 0
replace sleep_apnea_max_n = 1 if sleep_apnea_max == 1
label define sleep_apnea_max 0 "No" 1 "Yes"
label value sleep_apnea_max_n sleep_apnea_max
tab sleep_apnea_max_n

tab bed12bin
gen bed12bin_n =.
replace bed12bin_n = 0 if sleep_weekday == 21 | sleep_weekday == 22 |
sleep_weekday == 23
replace bed12bin_n = 1 if sleep_weekday == 1 | sleep_weekday == 2 |
sleep_weekday == 3 | sleep_weekday == 24 | sleep_weekday == 99
label define bed12bin 0 "Sleep before midnight" 1 "Sleep at or after midnight"
label values bed12bin_n bed12bin
tab bed12bin_n

tab sleep_weekend_n

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tab sleep_weekend
gen bed12_weekend_bi = .
replace bed12_weekend_bi = 0 if sleep_weekend_n == 21 |
sleep_weekend_n == 22 | sleep_weekend_n == 23
replace bed12_weekend_bi = 1 if sleep_weekend_n == 1 | sleep_weekend_n
== 2 | sleep_weekend_n == 3 | sleep_weekend_n == 4 | sleep_weekend_n
== 5 | sleep_weekend_n == 6 | sleep_weekend_n == 7 | sleep_weekend_n
== 8 | sleep_weekend_n == 9 | sleep_weekend_n == 24 | sleep_weekend_n
== 99
label define sleep_weekend_n 0 "Sleep before midnight" 1 "Sleep at or
after midnight"
label values bed12_weekend_bi sleep_weekend_n
tab bed12_weekend_bi

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tab bed10_bin
gen bed10_bin_n = .
replace bed10_bin_n = 0 if sleep_weekday == 21 | sleep_weekday == 22
replace bed10_bin_n = 1 if sleep_weekday == 23 | sleep_weekday == 24 |
sleep_weekday == 1 | sleep_weekday == 2 | sleep_weekday == 3 |
sleep_weekday == 99
label define bed10_bin 0 "Sleep at or before 10 p.m" 1 "Sleep after 10
p.m"
label value bed10_bin_n bed10_bin
tab bed10_bin_n

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tab sleep_duration6
gen sleep_duration6_n = .
replace sleep_duration6_n = 0 if Sleep_time_weekday == 1 |
Sleep_time_weekday == 2 | Sleep_time_weekday == 3 | Sleep_time_weekday
== 4 | Sleep_time_weekday == 5 | Sleep_time_weekday == 6
replace sleep_duration6_n = 1 if Sleep_time_weekday == 7 |
Sleep_time_weekday == 8 | Sleep_time_weekday == 9
label define sleep_duration6 0 "<= 6hr/night" 1 "> 6hr/night"
label value sleep_duration6_n sleep_duration6
tab sleep_duration6_n

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tab sleep_duration7
gen sleep_duration7_n = .
replace sleep_duration7_n = 0 if Sleep_time_weekday == 1 |
Sleep_time_weekday == 2 | Sleep_time_weekday == 3 | Sleep_time_weekday
== 4 | Sleep_time_weekday == 5 | Sleep_time_weekday == 6 |
Sleep_time_weekday == 7
replace sleep_duration7_n = 1 if Sleep_time_weekday == 8 |
Sleep_time_weekday == 9
label define sleep_duration7 0 "<= 7hr/night" 1 "> 7hr/night"
label value sleep_duration7_n sleep_duration7
tab sleep_duration7_n

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tab sleep_duration8
gen sleep_duration8_n = .

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replace sleep_duration8_n = 0 if Sleep_time_weekday == 1 |
Sleep_time_weekday == 2 | Sleep_time_weekday == 3 | Sleep_time_weekday
== 4 | Sleep_time_weekday == 5 | Sleep_time_weekday == 6 |
Sleep_time_weekday == 7 | Sleep_time_weekday == 8
replace sleep_duration8_n = 1 if Sleep_time_weekday == 9
label define sleep_duration8 0 "<or= 8hr/night" 1 "> 8hr/night"
label value sleep_duration8_n sleep_duration8
tab sleep_duration8_n

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tab WHOcat3
gen WHOcat3_n =.
replace WHOcat3_n = 1 if WHOcat3 == 1
replace WHOcat3_n = 2 if WHOcat3 == 2
replace WHOcat3_n = 3 if WHOcat3 == 3
replace WHOcat3_n = 4 if WHOcat3 == 4
label define WHOcat3 1 "Underweight" 2 "Normal weight" 3 "Overweight"
4 "Obese"
label value WHOcat3_n WHOcat3
tab WHOcat3_n

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tab OBWH03
gen OBWH03_n =.
replace OBWH03_n = 0 if OBWH03 == 0
replace OBWH03_n = 1 if OBWH03 == 1
label define OBWH03 0 "Non-obese" 1 "Obese"
label value OBWH03_n OBWH03
tab OBWH03_n

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tab electronic
gen electronic_n=.
replace electronic_n = 0 if electronic == 0
replace electronic_n = 1 if electronic == 1
label define electronic 0 " less than 3h/day" 1 "3hrs or more/day"
label values electronic_n electronic
tab electronic_n

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tab Sleep_time_weekday_n
tab Sleep_time_weekend
gen Sleep_time_weekday5 = Sleep_time_weekday * 5
gen Sleep_time_weekend2 = Sleep_time_weekend * 2
tab Sleep_time_weekday5
gen Ave_Sleep_time_week = Sleep_time_weekday5 + Sleep_time_weekend2
tab Ave_Sleep_time_week
gen AverageSleepDuration = Ave_Sleep_time_week / 7
tab AverageSleepDuration
gen AverageSleepDuration_bi=.
replace AverageSleepDuration_bi = 0 if AverageSleepDuration <= 6
replace AverageSleepDuration_bi = 1 if AverageSleepDuration > 6
tab AverageSleepDuration_bi
label define AverageSleepDuration 0 "< or = 6 hrs/day" 1 "> 6 hrs/

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day"
label value AverageSleepDuration_bi AverageSleepDuration
tab AverageSleepDuration_bi
gen AverageSleepDuration_cat=.
replace AverageSleepDuration_cat=0 if AverageSleepDuration < 6
replace AverageSleepDuration_cat=1 if AverageSleepDuration >= 6 &
AverageSleepDuration < 7
replace AverageSleepDuration_cat=2 if AverageSleepDuration >= 7 &
AverageSleepDuration < 8
replace AverageSleepDuration_cat=3 if AverageSleepDuration >= 8 &
AverageSleepDuration< 9
replace AverageSleepDuration_cat=4 if AverageSleepDuration >= 9
tab AverageSleepDuration_cat

tab bed_weekend
tab bed_hour
gen bed_weekend2 = bed_weekend*2
gen bed_weekday5= bed_hour*5
gen bedtime_both2 = bed_weekend2 + bed_weekday5
replace bedtime_both2 = bedtime_both2/7
tab bedtime_both2
sum bedtime_both2, det
gen bed12 = bedtime_both2
replace bed12 = 0 if bed12 < 12.57143
replace bed12 = 1 if bed12 >= 12.57143
tab bed12
hist bed12bin_n
hist bed_weekend

drop bed12
gen bed12 = bedtime_both2
replace bed12 = 0 if bed12 < 12
replace bed12 = 1 if bed12 >= 12 & bed12 <=16
tab bed12

*gen bedtimeWEcat = bed_weekend
*replace bedtimeWEcat = 0 if bedtimeWEcat <=11
*replace bedtimeWEcat = 1 if bedtimeWEcat >11 & bedtimeWEcat <=12
*replace bedtimeWEcat = 2 if bedtimeWEcat >12 & bedtimeWEcat <=16
*tab bedtimeWEcat

*****
*****
gen bedtimeWEcat2 = bed_weekend
replace bedtimeWEcat2 = 0 if bedtimeWEcat2 <=11
replace bedtimeWEcat2 = 1 if bedtimeWEcat2 >11 & bedtimeWEcat2 <=13
replace bedtimeWEcat2 = 2 if bedtimeWEcat2 >13 & bedtimeWEcat2 <=16
tab bedtimeWEcat2
*****

```

```
*gen bedtimeWDcat = bed_hour
*tab bedtimeWDcat
*replace bedtimeWDcat = 0 if bedtimeWDcat <=11
*replace bedtimeWDcat = 1 if bedtimeWDcat >11 & bedtimeWDcat <=12
*replace bedtimeWDcat = 2 if bedtimeWDcat >12 & bedtimeWDcat <=16
*tab bedtimeWDcat
```

```
gen bedtimeWDcat2 = bed_hour
tab bedtimeWDcat2
replace bedtimeWDcat2 = 0 if bedtimeWDcat2 <=11
replace bedtimeWDcat2 = 1 if bedtimeWDcat2 >11 & bedtimeWDcat2 <=13
replace bedtimeWDcat2 = 2 if bedtimeWDcat2 >13 & bedtimeWDcat2 <=16
tab bedtimeWDcat2
```

```
gen bedtime123= bedtime_both2
replace bedtime123 = 0 if bedtime123 <=11
replace bedtime123 = 1 if bedtime123 > 11 & bedtime123 <=12
replace bedtime123 = 2 if bedtime123 >12 & bedtime123<=15.5
tab bedtime123
```

```
gen bedtimecat = .
replace bedtimecat = 0 if bedtime_both2 < 12
replace bedtimecat = 1 if bedtime_both2 >= 12 & bedtime_both2 <13
replace bedtimecat = 2 if bedtime_both2 >= 13 & bedtime_both2 <15.5
tab bedtimecat
```

```
gen bedtimecat2 = .
replace bedtimecat2 = 0 if bedtime_both2 < 12
replace bedtimecat2 = 1 if bedtime_both2 >= 12 & bedtime_both2 <=13
replace bedtimecat2 = 2 if bedtime_both2 > 13 & bedtime_both2 <15.5
tab bedtimecat2
```

```
tab vediogames
gen vediogames_bi = .
replace vediogames_bi = 0 if vediogames == 0 | vediogames == 1 |
vediogames == 2
replace vediogames_bi = 1 if vediogames == 3 | vediogames == 4 |
vediogames == 5 | vediogames == 6
label define vediogames 0 "Less or equal to 2 hrs" 1 " More than 2
hours"
```

```
label value vediogames_bi vediogames
tab vediogames_bi
```

```
tab bed12bin_n
tab bed12bin_n, nolabel
```

*Sleep dept is the difference between sleep duration (weekends - weekdays

```
gen sleepdept = Sleep_time_weekend_n - Sleep_time_weekday_n
tab sleepdept
gen sleepdeptcat = .
replace sleepdeptcat = 0 if sleepdept <= 0
replace sleepdeptcat = 1 if sleepdept >= 1 & sleepdept <=11
tab sleepdeptcat
```

*Severe sleep debt =sleep debt more than 90 minutes (we have the data for the 2 hours i.e 120 minutes)

```
gen sleepdeptt = sleepdept
tab sleepdeptt
gen sleepdeptsevere = .
replace sleepdeptsevere = 0 if sleepdeptt <= 1
replace sleepdeptsevere = 1 if sleepdeptt >= 2 & sleepdeptt <=11
tab sleepdeptsevere
```

*Social getlag is the difference between bedtime (weekday - weekend)

```
gen social_getlag= bed_weekend - bed_hour
gen socialgetlag_bi = social_getlag
tab socialgetlag_bi
sum socialgetlag_bi, detail
replace socialgetlag_bi = 0 if socialgetlag_bi < 1.431818
replace socialgetlag_bi = 1 if socialgetlag_bi >= 1.431818 &
social_getlag<= 6
tab socialgetlag_bi
```

```
tab social_getlag
gen SJL_bi = social_getlag
sum SJL_bi, detail
replace SJL_bi = 0 if SJL_bi < 1
replace SJL_bi = 1 if SJL_bi >= 1& SJL_bi <= 6
tab SJL_bi
```

```
gen Abscent_circadian = .
replace Abscent_circadian = 0 if vediogames_bi == 0 & bed12bin_n == 0
| vediogames_bi == 0 & bed12bin_n == 1 | vediogames_bi == 1 &
bed12bin_n == 0
replace Abscent_circadian = 1 if vediogames_bi == 1 & bed12bin_n == 1
tab Abscent_circadian
```

* Abeerer abscent circadian means = sleeping late after or at midnight and exposed to late time light = the circadian rhythm got disturbed

```

tab sleep_duration6
tab bed12bin_n
gen timeandduration = .
replace timeandduration = 0 if sleep_duration6 == 1 & bed12bin_n == 0
replace timeandduration = 1 if sleep_duration6 == 0 & bed12bin_n == 0
replace timeandduration = 2 if sleep_duration6 == 0 & bed12bin_n == 1
replace timeandduration = 3 if sleep_duration6 == 1 & bed12bin_n == 1
tab timeandduration

```

```

tab AverageSleepDuration
gen ASD6 = .
replace ASD6 = 0 if AverageSleepDuration <= 6
replace ASD6 = 1 if AverageSleepDuration > 6 & AverageSleepDuration
<11
tab ASD6

```

```

tab bedtime_both2
gen BT12 = .
replace BT12 = 0 if bedtime_both2 <12
replace BT12 = 1 if bedtime_both2 >=12 & bedtime_both2 <15.5
tab BT12

```

```

tab ASD6
tab BT12
gen durtime = .
replace durtime = 0 if ASD == 0 & BT12 == 1
replace durtime = 1 if ASD == 1 & BT12 == 0
replace durtime = 2 if ASD == 0 & BT12 == 0
replace durtime = 3 if ASD == 1 & BT12 == 1
tab durtime

```

```

gen SGood = durtime >=1 & durtime != 0
tab SGood

```

```

drop SGood
gen SBad = durtime
replace SBad = 0 if durtime == 0
*****

```

```

*Food
tab coffee
gen coffee_n = .
replace coffee_n = 0 if coffee < 1
replace coffee_n = 1 if coffee >= 1 & coffee <= 4
tab coffee_n

```

```

*Dinner

```

```
tab dinner
tab lunch
tab coffee
```

```
tab fied_food_restaurant
gen friedfood_restaurant =.
replace friedfood_restaurant = 0 if fied_food_restaurant <1
replace friedfood_restaurant = 1 if fied_food_restaurant >= 1 &
fied_food_restaurant <=3
tab friedfood_restaurant
```

```
gen bed12new= bedtime_both2
replace bed12new= 0 if bedtime_both2 < 12.49
replace bed12new= 1 if bedtime_both2 >= 12.49
label define bedtime_both2 0 "less than 12.49" 1 "at or more than
12.49"
label value bedtime_both2 bed12new
tab bed12new
```

*****Sleep variables

coding*****

*AverageSleepDuration = (continuous) average sleep duration for both weekends and weekdays

*Sleep_time_weekday_n = (continuous) sleep duration on weekdays

*Sleep_time_weekend_n = (continuous) sleep duration on weekends

*bedtime_both2 = (continuous) average bedtime for both weekends and weekdays

*bed_hour = (continuous) bedtime on weekdays

*bed_weekend = (continuous) bedtime on weekends

*bed12 = (binary) average bedtime for both weekends and weekdays

*bed12bin_n = (binary) bedtime for weekdays

*bed12_weekend_bi = (binary) bedtime for weekends

*sleepdept = (continuous) difference in sleep duration between weekdays and weekends

*sleepdeptcat = (binary) more than 60 minutes

*sleepdeptsevere = (binary) more than 120 minutes (the definition for severe sleepdebt is > 90 minutes, but we do not have the data for that)

*social_getlag = (continuous) difference in bedtime between weekdays and weekends

*socialgetlag_bi = (binary) social jetlag divided by the mean

*other classification not for this paper == bedtime123 = (categorical) for average bedtime on both weekends and weekdays

*bedtimecat = (categorical) for average bedtime on both weekends and weekdays

*bedtimeWDcat = (categorical) for bedtime weekdays

*bedtimeWEcat = (categorical) for bedtime weekends

*SJL_bi = SJL by <1hour and equal or more to 1 hour

*durtime = 4 categories for average bedtime and average sleep duration
Used for this thesis:

```

bedtimecat2 = (categorical) for average bedtime on both weekends and
weekdays
bedtimeWDcat2 = (categorical) for bedtime weekdays
bedtimeWEcat2 = (categorical) for bedtime weekends
*****
*****
*****Checking for normality of distribution for the outcome variables:
==> all outcomes not normally distributed
*All Above are skewed to the right==> log10
tab Adiponectin_P3
hist Adiponectin_P3
graph box Adiponectin_P3

tab Adiponectin_Se_P3
hist Adiponectin_Se_P3
graph box Adiponectin_Se_P3

tab UCN3_Se_P3
hist UCN3_Se_P3
graph box UCN3_Se_P3

tab IL6_P3
hist IL6_P3
graph box IL6_P3

tab HSCRPUgml
hist HSCRPUgml
graph box HSCRPUgml

tab IL10_P3
hist IL10_P3
graph box IL10_P3

sum IL8_P3, detail
hist IL8_P3

hist Leptin_P3

gen logIL6_P3 = log(IL6_P3)
gen logIL10 = log(IL10_P3)
gen logIL10_Se = log(IL10_Se_P3)

tab IL6_Se_P3
hist IL6_Se_P3
graph box IL6_Se_P3

*One-Sample Kolmogorov-Smirnov Test to check for normality of
distribution: (if significant==> not normally distributed, so if not
significant ==> normally distributed)

```

```

ksmirnov X = normal((X-mean )/ SD )
sum CRP_P3
ksmirnov CRP_P3 = normal((CRP_P3-851.9256 )/ 1568.478 )

sum HSCR Pugml
ksmirnov HSCR Pugml = normal((HSCR Pugml-2.788032)/ 3.233532 )

sum IL6_P3
ksmirnov IL6_P3 = normal((IL6_P3-10.48274 )/34.54921 )

sum IL6_Se_P3
ksmirnov IL6_Se_P3 = normal((IL6_Se_P3- 1.202366)/.7201484)

sum IL8_P3
ksmirnov IL8_P3 = normal((IL8_P3- 663.2398)/ 663.2398)

sum IL8_Se_P3
ksmirnov IL8_Se_P3 = normal((IL8_Se_P3- 7.184563)/ 12.27899 )

sum IL10_P3
ksmirnov IL10_P3 = normal((IL10_P3- .52)/ .2859843 )

sum IL10_Se_P3
ksmirnov IL10_Se_P3 = normal((IL10_Se_P3- 1.102174 )/1.432953 )

sum VEGF_P3
ksmirnov VEGF_P3 = normal((VEGF_P3- 705.6112)/ 341.0367 )
*Normally distributed

sum VEGF_Se_P3
ksmirnov VEGF_Se_P3 = normal((VEGF_Se_P3- 87.07759 )/76.03974 )

sum MCP1_P3
ksmirnov MCP1_P3 = normal((MCP1_P3- 705.6112)/ 341.0367 )

sum MCP1_Se_P3
ksmirnov MCP1_Se_P3 = normal((MCP1_Se_P3- 312.7764 )/165.2888 )

sum Adiponectin_P3
ksmirnov Adiponectin_P3 = normal((Adiponectin_P3- 8163.355)/ 11342.3)

sum Adiponectin_Se_P3
ksmirnov Adiponectin_Se_P3 = normal((Adiponectin_Se_P3- 9893942 )/
8712548 )

sum Leptin_P3
ksmirnov Leptin_P3 = normal((Leptin_P3- 202.0996)/ 130.5632)

sum Leptin_Se_P3
ksmirnov Leptin_Se_P3 = normal((Leptin_Se_P3- 23872.53 )/23786.19 )

```

```

sum Insulin_P3
ksmirnov Insulin_P3 = normal((Insulin_P3- 397.9171)/ 358.0936 )

sum Insulin_Se_P3
ksmirnov Insulin_Se_P3 = normal((Insulin_Se_P3- 1005.961 )/ 942.6419 )

sum social_getlag
ksmirnov Insulin_Se_P3 = normal((Insulin_Se_P3- 1.431818 )/1.479551 )
gen logsocial_getlag = log(social_getlag)


gen logIL6_P3 = log(IL6_P3)
gen logIL10 = log(IL10_P3)
gen logIL10_Se = log(IL10_Se_P3)


****Descriptive tables:
*Continuos variables:
sum AgeP3, detail
sum BMI3, detail
sum Waist_cm3, detail

*Biomarkers:
sum Adiponectin_P3, detail
sum Adiponectin_Se_P3, detail

sum Leptin_P3, detail
sum Leptin_Se_P3, detail

sum Insulin_P3, detail
sum Insulin_Se_P3, detail

sum IL6_P3, detail
sum IL6_Se_P3,detail

sum IL8_P3, detail
sum IL8_Se_P3, detail

sum IL10_P3, detail
sum IL10_Se_P3, detail

sum VEGF_P3, detail
sum VEGF_Se_P3, detail

sum MCP1_P3, detail
sum MCP1_Se_P3, detail

sum CRP_P3, detail
sum CRP_Se_P3, detail

```

```
sum HSCRPUgml, detail
```

```
sum DineOut, detail
```

```
sum EatHome, detail
```

```
*Sleep variables:
```

```
sum Sleep_time_weekday_n, detail
```

```
sum Sleep_time_weekend_n, detail
```

```
sum AverageSleepDuration, detail
```

```
sum bed_hour, detail
```

```
sum bed_weekend, detail
```

```
sum bedtime_both2, detail
```

```
sum sleepdept, detail
```

```
sum social_getlag, detail
```

```
sum nap_hours, detail
```

```
tab bed12
```

```
tab bed12bin_n
```

```
tab bed12_weekend_bi
```

```
tab bedtime123
```

```
tab bedtimeWDcat
```

```
tab bedtimeWEcat
```

```
*****
```

```
*****
```

```
Descriptive: Continuous
```

```
tabstat AgeP3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat BMI3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Waist_cm3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Adiponectin_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Adiponectin_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Leptin_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Leptin_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Insulin_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat Insulin_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat IL6_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat IL6_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat IL8_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat IL8_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat IL10_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat IL10_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat VEGF_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat VEGF_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat MCP1_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat MCP1_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat CRP_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat CRP_Se_P3, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat HSCRPUgml, s(n mean SD) c(s) by(bedtimecat2)
```

```
tabstat DineOut, s(n mean SD) c(s) by(bedtimecat2)
```

```

tabstat EatHome, s(n mean SD) c(s) by(bedtimecat2)

tabstat AverageSleepDuration, s(n mean SD) c(s) by(bedtimecat2)
tabstat Sleep_time_weekday_n, s(n mean SD) c(s) by(bedtimecat2)
tabstat Sleep_time_weekend_n, s(n mean SD) c(s) by(bedtimecat2)
tabstat bedtime_both2, s(n mean SD) c(s) by(bedtimecat2)
tabstat bed_hour, s(n mean SD) c(s) by(bedtimecat2)
tabstat bed_weekend, s(n mean SD) c(s) by(bedtimecat2)
tabstat sleepdept, s(n mean SD) c(s) by(bedtimecat2)
tabstat social_getlag, s(n mean SD) c(s) by(bedtimecat2)
tabstat nap_hours, s(n mean SD) c(s) by(bedtimecat2)

```

```

tabstat DineOut, s(n mean SD) c(s) by(bedtimecat2)
tabstat EatHome, s(n mean SD) c(s) by(bedtimecat2)

```

```

sum AgeP3, detail

```

```

* Descriptive Binary:

```

```

tab bedtimecat2
tab sex_n bedtimecat2, column freq chi2 exact
tab WHOcat3_n bedtimecat2, column freq chi2 exact
tab OBWHO3_n bedtimecat2, column freq chi2 exact
tab nap_bi_n bedtimecat2, column freq chi2 exact
tab snore_bi_n bedtimecat2, column freq chi2 exact
tab interrupted_sleep_bi_n bedtimecat2, column freq chi2 exact
tab hard_wakeup_bi_n bedtimecat2, column freq chi2 exact
tab diff_fall_asleep_bi_n bedtimecat2, column freq chi2 exact
tab sleepy_day_bi_n bedtimecat2, column freq chi2 exact
tab wakeupnight_bin_n bedtimecat2, column freq chi2 exact
tab electronic_n bedtimecat2, column freq chi2 exact
tab medical_history_n bedtimecat2, column freq chi2 exact
tab sleepdeptcat bedtimecat2, column freq chi2 exact
tab sleepdeptsevere bedtimecat2, column freq chi2 exact
tab socialgetlag_bi bedtimecat2, column freq chi2 exact
tab Abscent_circadian bedtimecat2, column freq chi2 exact
tab physical_act bedtimecat2, column freq chi2 exact
tab coffee_n bedtimecat2, column freq chi2 exact
tab dinner bedtimecat2, column freq chi2 exact
tab lunch bedtimecat2, column freq chi2 exact
tab friedfood_restaurant bedtimecat2, column freq chi2 exact

```

```

*****

```

```

ANOVA vs Kraskel wallis
oneway AgeP3 bedtimecat2, tabulate
oneway BMI3 bedtimecat2, tabulate
oneway Waist_cm3 bedtimecat2, tabulate

```

```

kwa CRP_P3, by(bedtimecat2)

```

```

Levens test for homocadasticity
robvar CRP_P3, by(bedtimecat2)
Shapiro test for normality distribution: if stat sig: not normally
distributed
swilk CRP_P3 bedtimecat2
*****
*****
*****See the correlation between sleep time and duration on (weekend,
weekday, and average) using interaction term between the two or
categorization combining the two sleep variables.
First: Correlation
*WEEKEND
pwcorr Sleep_time_weekend_n bed_weekend, star (.05)
*there in negative significant (*) correlation
*WEEKDAY
pwcorr Sleep_time_weekday_n bed_hour, star (.05)
*there in negative significant (*) correlation
*Average
pwcorr AverageSleepDuration bedtime_both2
*there in negative significant (*) correlation
*Interpretation: the earlier the bedtime, the more sleeping
duration*****
*****
*With spearman for ordinal variables, no need to do the log
transformation as it will compensate for it
spearman CRP_P3 HSCRPUgml, stats(rho p)
spearman IL6_P3 IL6_Se_P3, stats(rho p)
spearman IL8_P3 IL8_Se_P3, stats(rho p)
spearman IL10_P3 IL10_Se_P3, stats(rho p)
spearman Adiponectin_P3 Adiponectin_Se_P3, stats(rho p)
spearman Leptin_P3 Leptin_Se_P3, stats(rho p)
spearman Insulin_P3 Insulin_Se_P3, stats(rho p)
spearman VEGF_P3 VEGF_Se_P3, stats(rho p)
spearman MCP1_P3 MCP1_Se_P3, stats(rho p)

* With pearson correlation for continuous variables==> log
transformation because not normally distributed
pwcorr logCRP_P3 logHSCRPUgml, sig star(.05) obs
pwcorr logIL6_P3 logIL6_Se_P3, sig star(.05) obs
pwcorr logIL8_P3 logIL8_Se_P3, sig star(.05) obs
pwcorr logIL10_P3 logIL10_Se_P3, sig star(.05) obs
pwcorr logVEGF_P3 logVEGF_Se_P3, sig star(.05) obs
pwcorr logMCP1_P3 logMCP1_Se_P3, sig star(.05) obs
pwcorr logAdiponectin_P3 logAdiponectin_Se_P3, sig star(.05) obs
pwcorr logLeptin_P3 logLeptin_Se_P3, sig star(.05) obs
pwcorr logInsulin_P3 logInsulin_Se_P3, sig star(.05) obs

```

```
=====
=====
```

```
*****PAPER
```

```
1*****
```

```
*Dr.Finkelman: Random Effect Model to account for the School variable
(it is 15 schools and we use REM to account for the school effect to
be at Random)
```

```
*use estat ic command to check which model to select:
```

```
estat ic
```

```
to compare between models using AIC and BIC , where lower values are
the modle with the best fit.
```

```
* logCRP_P3
```

```
*MIXED EFFECT MODEL
```

```
xtmixed logCRP_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
```

```
vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
```

```
vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 social_getlag sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
```

```
vediogames DineOut, || School:
```

```

xtmixed logCRP_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.SJL_bi sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logCRP_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logCRP_P3 bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logCRP_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logCRP_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logCRP_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logCRP_P3 social_gettag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 social_gettag i.durtime sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logCRP_P3 i.socialgettag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
xtmixed logCRP_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
xtmixed logCRP_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

```

*HSCR (High sensitivity Serum CRP)

*MIXED EFFECT MODELS

gen logHSCR Pugml = log(HSCR Pugml)

```

xtmixed logHSCR Pugml AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logHSCR Pugml Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logHSCR Pugml Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```
xtmixed logHSCRPUgml bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logHSCRPUgml bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed logHSCRPUgml bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logHSCRPUgml i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logHSCRPUgml i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logHSCRPUgml i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logHSCRPUgml i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logHSCRPUgml social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logHSCRPUgml i.timeanddduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logHSCRPUgml i.SJL_bi sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed logHSCRPUgml i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logHSCRPUgml i.bedtimeWDCat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logHSCRPUgml i.bedtimeWECat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logHSCRPUgml i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:  
xtmixed logHSCRPUgml i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:  
xtmixed logHSCRPUgml i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

*CRP serum not high sensitivity:

```
xtmixed logCRP_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logCRP_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logCRP_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:  
xtmixed logCRP_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:  
xtmixed logCRP_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:  
xtmixed logCRP_Se_P3 i.SJL_bi sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
*Third: IL6 Saliva ==> log  
xtmixed logIL6_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logIL6_P3 Sleep_time_weekday sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
*Significant  
xtmixed logIL6_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL6_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logIL6_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
```

```
vediogames DineOut, || School:
xtmixed logIL6_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
```

```
xtmixed logIL6_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig
xtmixed logIL6_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL6_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logIL6_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL6_P3 bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
```

```
xtmixed logIL6_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL6_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 i.SJL_bi sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL6_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL6_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
```

```
xtmixed logIL6_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
```

```

i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL6_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

xtmixed logIL6_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logIL6_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logIL6_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logIL6_P3 i.SJL_bi sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

xtmixed logIL6_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL6_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

xtmixed logIL6_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

*Second: IL6 Serum
gen logIL6_Se_P3 = log (IL6_Se_P3)

xtmixed logIL6_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```

xtmixed logIL6_Se_P3 Sleep_time_weekday sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL6_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_Se_P3 i.durtime sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL6_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL6_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
xtmixed logIL6_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
xtmixed logIL6_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
xtmixed logIL6_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

*****

xtmixed IL6_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 Sleep_time_weekday sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```
xtmixed IL6_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed IL6_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*significant
```

```
xtmixed IL6_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig
xtmixed IL6_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig
xtmixed IL6_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL6_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL6_Se_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
```

```
xtmixed IL6_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed IL6_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed IL6_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL6_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed IL6_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed IL6_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL6_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed IL6_Se_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL6_Se_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
*Fourth: logAdiponectin_P3_n  
xtmixed logAdiponectin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 AverageSleepDuration logInsulin_P3 sex_n  
AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logAdiponectin_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.bedtimecat2 logInsulin_P3 sex_n AgeP3  
nap_bi_n i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.bedtimeWdc2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 bed12new sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 bedtimecat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 bed12 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*Fifth: logAdiponectin_Se_P3

```
xtmixed logAdiponectin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_Se_P3 AverageSleepDuration logInsulin_Se_P3  
sex_n AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, ||  
School:  
xtmixed logAdiponectin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logAdiponectin_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_Se_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_Se_P3 i.bedtimecat2 logInsulin_Se_P3 sex_n  
AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logAdiponectin_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logAdiponectin_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
```

```

i.medical_history_n vediogames DineOut, || School:

xtmixed logAdiponectin_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logAdiponectin_Se_P3 bed12new sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 bedtimecat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logAdiponectin_Se_P3 bed12 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logAdiponectin_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logAdiponectin_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 sleepdept sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logAdiponectin_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logAdiponectin_Se_P3 i.durtime sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

*Sixth: logIL10
xtmixed logIL10_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n

```

```

vediogames DineOut, || School:
xtmixed logIL10_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

xtmixed logIL10_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```

*Seventh: logIL10_Se
xtmixed logIL10_Se AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10_Se bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

```

```

xtmixed logIL10_Se i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

xtmixed logIL10_Se bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant

xtmixed logIL10_Se bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

xtmixed logIL10_Se bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10_Se bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10_Se bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL10_Se i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10_Se i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10_Se social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

xtmixed logIL10_Se i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10_Se i.bedtimecat2 sex_n AgeP3 nap_bi_n

```

```
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
*Eight: logIL8_P3
```

```
xtmixed logIL8_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 social_getlag sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logIL8_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL8_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```

xtmixed logIL8_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL8_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

*Ninth: logIL8_Se_P3
xtmixed logIL8_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL8_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed logIL8_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig
xtmixed logIL8_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig
xtmixed logIL8_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig

xtmixed logIL8_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logIL8_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

```

```

xtmixed logIL8_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_Se_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

xtmixed logIL8_Se_P3 bedtimecat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig

xtmixed logIL8_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed logIL8_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant
xtmixed logIL8_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

xtmixed logIL8_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Marginal significance
xtmixed logIL8_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

xtmixed logIL8_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*Significant

xtmixed logIL8_Se_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_Se_P3 sleepdept sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL8_Se_P3 i.durtime sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

*Tenth: logLeptin_P3
xtmixed logLeptin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```

xtmixed logLeptin_P3 AverageSleepDuration logInsulin_P3 sex_n AgeP3
nap_bi_n i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logLeptin_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logLeptin_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logLeptin_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logLeptin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 i.bedtimecat2 logInsulin_P3 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logLeptin_P3 i.bedtimeWDCat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logLeptin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logLeptin_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logLeptin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logLeptin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed logLeptin_P3 i.SJL_bi sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

xtmixed logLeptin_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logLeptin_P3 bedtimecat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logLeptin_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

```

```
xtmixed logLeptin_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*Eleventh: logLeptin_Se_P3

```
xtmixed logLeptin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 AverageSleepDuration logInsulin_Se_P3 sex_n  
AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 Sleep_time_weekday_n logInsulin_Se_P3 sex_n  
AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 i.bedtimecat2 logInsulin_Se_P3 sex_n AgeP3  
nap_bi_n i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
*sig
```

```
xtmixed logLeptin_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 i.SJL_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 bed12new sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
*marginal significance  
xtmixed logLeptin_Se_P3 bedtimecat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
*sig
```

```
xtmixed logLeptin_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logLeptin_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 logsocial_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logLeptin_Se_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*Twelveth: VEGF_P3

```
xtmixed VEGF_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed VEGF_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed VEGF_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 i.bedtimeWDCat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed VEGF_P3 i.bedtimeWECat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed VEGF_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed VEGF_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 i.bedtimeWDCat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed VEGF_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed VEGF_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed VEGF_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames BMI3 DineOut, || School:
```

```
xtmixed VEGF_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
*Thirneeth: logVEGF_Se_P3
```

```
xtmixed logVEGF_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 bed12new sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 bedtimecat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logVEGF_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logVEGF_Se_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*Fourteenth: logInsulin_P3

*MIXED EFFECT MODEL:

```
xtmixed logInsulin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logInsulin_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*sig

```
xtmixed logInsulin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logInsulin_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.SJL_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 bed12new sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 bedtimecat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed logInsulin_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
*Fifteenth: logInsulin_Se_P3  
xtmixed logInsulin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*sig

```
xtmixed logInsulin_Se_P3 i.bedtimeWDCat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 i.bedtimeWECat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames BMI3 DineOut, || School:  
xtmixed logInsulin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames Waist_cm3 BMI3 DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 i.durtime sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 bed12new sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 bedtimecat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
*sig
```

```
xtmixed logInsulin_Se_P3 bed12 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
*Significant  
xtmixed logInsulin_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logInsulin_Se_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logInsulin_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

*17: logMCP1_P3

*Mixed Effect model:

```
xtmixed logMCP1_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logMCP1_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed logMCP1_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logMCP1_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logMCP1_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed logMCP1_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logMCP1_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```

xtmixed logMCP1_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logMCP1_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logMCP1_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_P3 i.durtime sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

```

*18: logMCP1_Se_P3

```

xtmixed logMCP1_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```

xtmixed logMCP1_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 bed_hour sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

```

```

xtmixed logMCP1_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```

xtmixed logMCP1_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n

```

```

i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 bed12new sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 sleepdept sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 i.durtime sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 sleepdept sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logMCP1_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logMCP1_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

*****Mediation

Analysis*****

*SEM Method for the analysis for mediation**

ssc install medsem

```

*****
*****
*****
***** BMI as a possible
mediator*****
Average categorical but not used for this thesis
* 1: CRP Saliva
* Categorical Average bedtime:
sem (logCRP_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> logCRP_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logCRP_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logCRP_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)
* BMI not mediator (indirect effect is not stat significant)

* 2: HSCR
* Categorical Average bedtime:
sem (HSCR Pugml<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> HSCR Pugml)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> HSCR Pugml),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(HSCR Pugml) mcreps(500) rit rid
estat gof, stats(indices residuals)
* BMI is a mediator for the association between

* 3- IL6 Serum
* Categorical Average bedtime:
sem (IL6_Se_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> IL6_Se_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> IL6_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(IL6_Se_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)

* 4- IL-6 saliva
* Categorical Average bedtime:
sem (logIL6_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> logIL6_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL6_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects

```

```
medsem, indep(bedtime123) med(BMI3) dep(logIL6_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)
```

* 5- IL_8 saliva

```
sem (logIL8_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> logIL8_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL8_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)
```

* 5- IL_8 serum

```
sem (logIL8_Se_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL8_Se_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL8_Se_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)
```

* 6- IL_10 serum

```
sem (logIL10_Se <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL10_Se ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL10_Se),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL10_Se ) mcreps(500) rit
rid
estat gof, stats(indices residuals)
```

* 6- VEGF saliva

```
sem (VEGF_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> VEGF_P3 )
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> VEGF_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(VEGF_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)
```

* 6- VEGF Serum

```
sem (logVEGF_Se_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logVEGF_Se_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logVEGF_Se_P3),
```

```

vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logVEGF_Se_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

```

```

* 6- MCP-1 saliva
sem (logMCP1_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logMCP1_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logMCP1_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logMCP1_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

```

```

* 6- MCP-1 serum
sem (logMCP1_Se_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logMCP1_Se_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logMCP1_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logMCP1_Se_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

```

```

*7- Insulin saliva:
sem (logInsulin_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logInsulin_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logInsulin_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logInsulin_P3 ) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*7- Insulin serum:
sem (logInsulin_Se_P3 <-BMI3 bedtime123) (BMI3<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logInsulin_Se_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n
bedtime123-> BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n ->
logInsulin_Se_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logInsulin_Se_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*7- Adiponectin saliva:
sem (logAdiponectin_P3 <-BMI3 bedtime123) (BMI3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logAdiponectin_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

*8- Adiponectin serum
sem (logAdiponectin_Se_P3 <-BMI3 bedtime123) (BMI3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logAdiponectin_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

* leptin saliva:
sem (logLeptin_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logLeptin_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)
*****
* 3- IL6 Serum (log)
*Categorical Average bedtime:
sem (logIL6_Se_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL6_Se_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL6_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL6_Se_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

* 6- IL_10 saliva (log)
sem (logIL10_P3 <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL10_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL10_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL10_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

*7- Leptin serum:
sem (logLeptin_Se_P3 <-BMI3 bedtime123) (BMI3<-bedtime123),
nocapslatent

```

```

sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logLeptin_Se_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n
bedtime123-> BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n ->
logLeptin_Se_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logLeptin_Se_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*****
*****

```

```

***** Waist Circumference as a possible
mediator*****

```

```

*IL-10 serum
sem (logIL10_Se<-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> logIL10_Se)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> Waist_cm3)
(vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n -> logIL10_Se),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logIL10_Se) mcreps(500)
rit rid zlc
estat gof, stats(indices residuals)

```

```

*Insulin saliva:
sem (logInsulin_P3<-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logInsulin_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
Waist_cm3) (vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n ->
logInsulin_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logInsulin_P3)
mcreps(500) rit rid zlc
estat gof, stats(indices residuals)

```

```

*****

```

```

* 3- IL6 Serum (log)

```

```

*Categorical Average bedtime:

```

```

sem (logIL6_Se_P3<-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL6_Se_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
Waist_cm3) (vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n ->
logIL6_Se_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logIL6_Se_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

* 6- IL_10 saliva (log)
sem (logIL10_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL10_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
Waist_cm3) (vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n ->
logIL10_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logIL10_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

*7- Leptin serum:
sem (logLeptin_Se_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logLeptin_Se_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n
bedtime123-> Waist_cm3) (vediogames DineOut Waist_cm3 AgeP3 sex_n
nap_bi_n -> logLeptin_Se_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logLeptin_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

* 6- VEGF saliva
sem (VEGF_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(VEGF_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

* 6- VEGF Serum
sem (logVEGF_Se_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logVEGF_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

* 6- MCP-1 saliva
sem (logMCP1_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logMCP1_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

* 6- MCP-1 serum
sem (logMCP1_Se_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),

```

```

nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logMCP1_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

```

```

*7- Adiponectin saliva:
sem (logAdiponectin_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-
bedtime123), nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logAdiponectin_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

```

```

*8- Adiponectin serum
sem (logAdiponectin_Se_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-
bedtime123), nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logAdiponectin_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

```

```

* leptin saliva:
sem (logLeptin_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logLeptin_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*CRP saliva
sem (logCRP_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logCRP_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

* IL-8 saliva:
sem (logIL8_P3 <-Waist_cm3 bedtime123) (Waist_cm3<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(Waist_cm3) dep(logIL8_P3 ) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*****
*****
***** Nap as a possible

```

```

mediator*****
*IL-10 serum:
sem (logIL10_Se<-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 -> logIL10_Se)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logIL10_Se), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logIL10_Se) mcreps(500)
rit rid zlc

*Insulin saliva:
sem (logInsulin_P3<-nap_bi_n bedtime123) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 -> logInsulin_P3)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logInsulin_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logInsulin_P3) mcreps(500)
rit rid zlc
*****
* 3- IL6 Serum (log)
*Categorical Average bedtime:
sem (logIL6_Se_P3<-nap_bi_n bedtime123) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 -> logIL6_Se_P3)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logIL6_Se_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logIL6_Se_P3) mcreps(500)
rit rid zlc

* 6- IL_10 saliva (log)
sem (logIL10_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 -> logIL10_P3 )
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logIL10_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logIL10_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

*7- Leptin serum:
sem (logLeptin_Se_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent

```

```

sem (vediogames DineOut AgeP3 sex_n bedtime123 -> logLeptin_Se_P3 )
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logLeptin_Se_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logLeptin_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

```

* 6- VEGF saliva

```

sem (VEGF_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 ->VEGF_P3) ( vediogames
DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames DineOut
nap_bi_n AgeP3 sex_n -> VEGF_P3), vce(bootstrap, reps(5000))
nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(VEGF_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

```

* 6- VEGF Serum

```

sem (logVEGF_Se_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 -> logVEGF_Se_P3)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logVEGF_Se_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logVEGF_Se_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

* 6- MCP-1 saliva

```

sem (logMCP1_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 ->logMCP1_P3)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logMCP1_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logMCP1_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

* 6- MCP-1 serum

```

sem (logMCP1_Se_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 ->logMCP1_Se_P3)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames

```

```

DineOut nap_bi_n AgeP3 sex_n -> logMCP1_Se_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logMCP1_Se_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*7- Adiponectin saliva:
sem (logAdiponectin_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bedtime123 ->logAdiponectin_P3)
( vediogames DineOut AgeP3 sex_n bedtime123-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logAdiponectin_P3), vce(bootstrap,
reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logAdiponectin_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

```

```

*8- Adiponectin serum
sem (logAdiponectin_Se_P3 <-nap_bi_n bedtime123) (nap_bi_n<-
bedtime123), nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logAdiponectin_Se_P3)
mcreps(500) rit rid
estat gof, stats(indices residuals)

```

```

* leptin saliva:
sem (logLeptin_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logLeptin_P3) mcreps(500)
rit rid
estat gof, stats(indices residuals)

```

```

*CRP saliva
sem (logCRP_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logCRP_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)

```

```

* IL-8 saliva:
sem (logIL8_P3 <-nap_bi_n bedtime123) (nap_bi_n<-bedtime123),
nocapslatent
estat teffects
medsem, indep(bedtime123) med(nap_bi_n) dep(logIL8_P3 ) mcreps(500)
rit rid

```

```

estat gof, stats(indices residuals)
*****
*****
*****
*****

*Check if BMI is a confounders or EM

*First: Confounding testing:
*Serum CRP
xtmixed logHSCRPUgml i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logHSCRPUgml i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*BMI is a confounder
xtmixed logCRP_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logCRP_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
* is a confounder
*IL-6 saliva
xtmixed logIL6_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL6_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames BMI3 DineOut, || School:
*BMI not confounder
xtmixed logIL8_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL8_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
*BMI not confounder
xtmixed logIL10_Se bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL10_Se bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*BMI not confounder
xtmixed logIL10_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL10_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
xtmixed VEGF_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

```

```

estat ic
xtmixed VEGF_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames BMI3 DineOut, || School:
estat ic
*in a confounder
xtmixed logVEGF_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logVEGF_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*Not a confounder
xtmixed logMCP1_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logMCP1_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*A confounder
xtmixed logMCP1_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logMCP1_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*A confounder
xtmixed logAdiponectin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logAdiponectin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*A confounder
xtmixed logAdiponectin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logAdiponectin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*A confounder
xtmixed logLeptin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logLeptin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*not a confounder
xtmixed logLeptin_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic

```

```

xtmixed logLeptin_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*BMI is Confounder
xtmixed logInsulin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logInsulin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*BMI is a confounder
xtmixed logInsulin_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logInsulin_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*BMI is a confounder
xtmixed logIL6_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL6_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:
estat ic
*BMI is a confounder

```

*second: check if BMI in an Effect modifier:

```

gen bedbmi = bedtimecat2 * BMI3
xtmixed logIL6_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames BMI3 bedbmi DineOut, || School:
xtmixed logIL8_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi DineOut, || School:
xtmixed logIL10_Se bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi DineOut, || School:
xtmixed logIL10_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi DineOut, || School:
xtmixed logInsulin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi DineOut, || School:

```

```

gen bedbmi_binary = bedtimecat2 * OBWH03_n
xtmixed logIL6_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames BMI3 bedbmi_binary DineOut, || School:
xtmixed logIL8_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi_binary DineOut, || School:
xtmixed logIL10_Se bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi_binary DineOut, || School:
xtmixed logIL10_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi_binary DineOut, || School:

```

```
xtmixed logInsulin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi_binary DineOut, || School:
```

```
xtmixed logIL10_Se i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedbmi_binary DineOut, || School:
```

```
regress logIL10_Se bedtimecat2 School sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0
regress logIL10_Se bedtimecat2 School sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1
regress logIL10_Se bedtimecat2 School sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut OBWH03_n
regress logIL10_Se bedtimecat2 OBWH03_n
```

```
gen bedtime_con_BMI = bedtime_both2 * OBWH03_n
xtmixed logIL10_Se bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedtime_con_BMI DineOut, ||
School:
```

```
regress logIL10_Se bedtime_both2 School sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0
regress logIL10_Se bedtime_both2 School sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1
regress logIL10_Se bedtime_both2 School sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
regress logIL10_Se bedtime_both2
```

```
xtmixed logIL10_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 bedtime_con_BMI DineOut, ||
School:
```

```
if OBWH03_n == 0, robust
```

```
*****
**
```

*checking the correlation between BMI and WC to see if there is co-linearity or not:

```
regress logInsulin_Se_P3 Waist_cm3 BMI3 DineOut
vif
```

*This produces a VIF value for each of the explanatory variables in the model. The value for VIF starts at 1 and has no upper limit. A general rule of thumb for interpreting VIFs is as follows:

*A value of 1 indicates there is no correlation between a given explanatory variable and any other explanatory variables in the model.

*A value between 1 and 5 indicates moderate correlation between a given explanatory variable and other explanatory variables in the model, but this is often not severe enough to require attention.

*A value greater than 5 indicates potentially severe correlation between a given explanatory variable and other explanatory variables

in the model. In this case, the coefficient estimates and p-values in the regression output are likely unreliable.

*Both VIF values for waist circumferenc and BMI are below 5, which indicates that multicollinearity is no longer a problem in the model.

corr Waist_cm3 BMI3

```
*****
*****
```

*Dr. Redline

*****NAP as : (Abeer ==> suspected effect
modifier)*****

*Generating interaction term:

gen napavesleep = nap_bi_n * AverageSleepDuration

gen napSleep_time_wekday = nap_bi_n * Sleep_time_weekday

gen napbed12 = nap_bi_n * bed12

gen napbed12bin_n = nap * bed12bin_n

*First: HSCR

regress HSCR Pugml AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
napavesleep i.medical_history_n vediogames DineOut, robust
xtmixed HSCR Pugml AverageSleepDuration sex_n AgeP3 nap_bi_n
napavesleep i.medical_history_n vediogames DineOut, || School:

regress HSCR Pugml Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
napSleep_time_wekday i.medical_history_n vediogames DineOut, robust
xtmixed HSCR Pugml Sleep_time_weekday sex_n AgeP3 nap_bi_n
napSleep_time_wekday i.medical_history_n vediogames DineOut, ||
School:

regress HSCR Pugml bed12 sex_n i.School AgeP3 nap_bi_n napbed12
i.medical_history_n vediogames DineOut, robust
xtmixed HSCR Pugml bed12 sex_n AgeP3 nap_bi_n napbed12
i.medical_history_n vediogames DineOut, || School:

regress HSCR Pugml bed12bin_n sex_n i.School AgeP3 nap_bi_n
napbed12bin_n i.medical_history_n vediogames DineOut, robust
xtmixed HSCR Pugml bed12bin_n sex_n AgeP3 nap_bi_n napbed12bin_n
i.medical_history_n vediogames DineOut, || School:

*Second: IL6 Serum

regress IL6_Se_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
napavesleep i.medical_history_n vediogames DineOut, robust

regress IL6_Se_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
napSleep_time_wekday i.medical_history_n vediogames DineOut, robust

regress IL6_Se_P3 bed12 sex_n i.School AgeP3 nap_bi_n napbed12
i.medical_history_n vediogames DineOut, robust

```
regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n  
napbed12bin_n i.medical_history_n vediogames DineOut, robust
```

```
*Third: IL6 Saliva ==> log  
regress logIL6_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n  
napavesleep i.medical_history_n vediogames DineOut, robust
```

```
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n  
napSleep_time_wekday i.medical_history_n vediogames DineOut, robust
```

```
regress logIL6_P3 bed12 sex_n i.School AgeP3 nap_bi_n napbed12  
i.medical_history_n vediogames DineOut, robust
```

```
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n  
napbed12bin_n i.medical_history_n vediogames DineOut, robust
```

```
*****  
*****
```

```
*Check if WC is a confounder or EM:
```

```
*First: checking confounding:
```

```
xtmixed HSCRPUgml i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
estat ic
```

```
xtmixed HSCRPUgml i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames Waist_cm3 DineOut, || School:  
estat ic
```

```
*WC is a confounder
```

```
xtmixed logCRP_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
estat ic
```

```
xtmixed logCRP_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames Waist_cm3 DineOut, || School:  
estat ic
```

```
*is a confounder
```

```
xtmixed logIL6_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
estat ic
```

```
xtmixed logIL6_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames Waist_cm3 DineOut, || School:  
estat ic
```

```
xtmixed IL6_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
estat ic
```

```
xtmixed IL6_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames Waist_cm3 DineOut, || School:  
estat ic
```

```

xtmixed logIL8_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL8_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic

xtmixed logIL8_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL8_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic

xtmixed logIL10_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL10_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic

xtmixed logIL10_Se i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logIL10_Se i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic

xtmixed VEGF_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
estat ic
xtmixed VEGF_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames Waist_cm3 DineOut, || School:
estat ic
*Not a confounder
xtmixed logVEGF_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logVEGF_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
*Not a confounder
xtmixed logMCP1_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logMCP1_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
*Not confounder
xtmixed logMCP1_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n

```

```

i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logMCP1_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
*Not a confounder
xtmixed logAdiponectin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logAdiponectin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
*A confounder
xtmixed logAdiponectin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logAdiponectin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
* A confounder
xtmixed logInsulin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logInsulin_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
* a confounder
xtmixed logInsulin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logInsulin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
* a confounder
xtmixed logLeptin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logLeptin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic
*not a confounder
xtmixed logLeptin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
estat ic
xtmixed logLeptin_Se_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 DineOut, || School:
estat ic

*Second: checking for EM:
gen bedwc = bedtimecat2 * Waist_cm3

```

```

xtmixed HSCRPUgml bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed logIL6_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed IL6_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed logIL8_Se bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed logIL10_Se bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed logInsulin_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed logInsulin_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 bedwc DineOut, || School:
xtmixed logLeptin_Se_P3 bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames Waist_cm3 bedwc DineOut, || School:

```

```

*****
*****

```

```

*Creating interaction terms between sleep variables
gen weekendboth = Sleep_time_weekend_n * bed_weekend
gen weekdayboth = Sleep_time_weekday_n * bed_hour
gen averageboth = AverageSleepDuration * bed_hour

```

```

regress Sleep_time_weekend_n bed_weekend weekendboth sex_n i.School
AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, robust
regress Sleep_time_weekday_n bed_hour weekdayboth sex_n i.School AgeP3
nap_bi_n i.medical_history_n vediogames DineOut, robust
regress AverageSleepDuration bed_hour averageboth sex_n i.School AgeP3
nap_bi_n i.medical_history_n vediogames DineOut, robust

```

*Now with the biomarkers:

*First: HSCRPUgml

```

regress HSCRPUgml Sleep_time_weekend_n bed_weekend weekdayboth sex_n
i.School AgeP3 nap_bi_n i.medical_history_n vediogames DineOut,
robust
regress HSCRPUgml Sleep_time_weekday_n bed_hour weekdayboth sex_n
i.School AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml AverageSleepDuration bed_hour averageboth sex_n
i.School AgeP3 nap_bi_n i.medical_history_n vediogames DineOut, robust

```

*Dr.Redline: Adding SNORE on the association between BMI and Bedtime

```

logistic OBWH03_n bed12bin_n snore_bi_n
logit OBWH03_n bedtime_both2 snore_bi_n
logit OBWH03_n bedtime_both2 snore_bi_n

```

```

*****

```

Extra Analyses for the thesis:

```

logit sleepdeptcat i.bedtimecat2, or

```

*the later the bedtime the higher the odds for sleep debt.

logit socialgetlag_bi i.bedtimecat2, or

*The late rthe bedtime the lowert eh odds for SJL

```
*****
*****
*****
*****
*****
```

*****PAPER 2

*Diet and Sleep

hist DineOut

hist EatHome

*One-Sample Kolmogorov-Smirnov Test to check for normality of
distribution:

sum DineOut

ksmirnov DineOut = normal((DineOut- -2.63e-17)/1)

*Normally distributed

sum EatHome

ksmirnov EatHome = normal((EatHome- -1.15e-17)/ 1)

*Normally distributed

*Nine Categories:

tab Eat_Restaurant

tab Fast_Foods

tab Snacks

tab Physical_Ex

tab Coffee_Tea

tab Milk_All

tab Breakfat

tab Family_meal

tab Eat_TV

*Checking for normality and log transformaitons if not normally
distrbuted.

sum Eat_Restaurant, detail

ksmirnov Eat_Restaurant = normal((Eat_Restaurant- 4.097143)/
2.645587)

*not normally

gen logEatRest = log(Eat_Restaurant)

```

sum Fast_Foods, detail
ksmirnov Fast_Foods = normal((Fast_Foods- 9.714286 )/4.322735 )
*normal

sum Snacks, detail
ksmirnov Snacks = normal((Snacks- 8.174286)/3.461772 )
*not Normal
gen logSnacks = log(Snacks)

sum Physical_Ex, detail
ksmirnov Physical_Ex = normal((Physical_Ex- 2.474286 )/2.215644 )
*not normal
gen logPhysicalEx = log(Physical_Ex)

sum Coffee_Tea, detail
ksmirnov Coffee_Tea = normal((Coffee_Tea- 2.977143 )/2.118155 )
*Not normal
gen logCoffeeTea= log(Coffee_Tea)

sum Milk_All, detail
ksmirnov Milk_All = normal((Milk_All- 5.471429)/3.164639 )
*Not normal
gen logMilk= log(Milk_All)

sum Breakfat, detail
ksmirnov Breakfat = normal((Breakfat- 3.38)/2.685235 )
*Not normal
gen logBreakfat = log(Breakfat)

sum Family_meal, detail
ksmirnov Family_meal = normal((Family_meal- 5.421203)/2.180822)
*Not normal
gen logFamilyMeal = log(Family_meal)

sum Eat_TV, detail
ksmirnov Eat_TV = normal((Eat_TV- 2.698864 )/2.897135)
*Not normal
gen logEatTV= log(Eat_TV)

*Descriptive statistics:
tabstat Eat_Restaurant, s(n mean SD) c(s) by(bedtimecat2)
tabstat Fast_Foods, s(n mean SD) c(s) by(bedtimecat2)
tabstat Snacks, s(n mean SD) c(s) by(bedtimecat2)
tabstat Physical_Ex, s(n mean SD) c(s) by(bedtimecat2)
tabstat Coffee_Tea, s(n mean SD) c(s) by(bedtimecat2)
tabstat Milk_All, s(n mean SD) c(s) by(bedtimecat2)
tabstat Breakfat, s(n mean SD) c(s) by(bedtimecat2)
tabstat Family_meal, s(n mean SD) c(s) by(bedtimecat2)
tabstat Eat_TV, s(n mean SD) c(s) by(bedtimecat2)

```

```

regress logEatRest i.bedtimecat2
regress Fast_Foods i.bedtimecat2
regress logSnacks i.bedtimecat2
regress logPhysicalEx i.bedtimecat2
regress logCoffeeTea i.bedtimecat2
regress logMilk i.bedtimecat2
regress logBreakfat i.bedtimecat2
regress logFamilyMeal i.bedtimecat2
regress logEatTV i.bedtimecat2

```

*DineOut

```

xtmixed DineOut i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n, || School:
*Meidaiton Analysis:
*Vediogames as suspected mediator:
sem (DineOut<-vediogames bedtimecat2) (vediogames<-bedtimecat2),
nocapslatent
sem (AgeP3 sex_n nap_bi_n bedtimecat2 -> DineOut) (AgeP3 sex_n
nap_bi_n bedtimecat2-> vediogames) (vediogames vediogames AgeP3 sex_n
nap_bi_n -> DineOut), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimecat2) med(vediogames) dep(DineOut) mcreps(500)
rit rid zlc
estat gof, stats(indices residuals)

```

*EatHome:

```

xtmixed EatHome i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n, || School:
*Meidaiton Analysis:
*Vediogames as suspected mediator:
sem (EatHome<-vediogames bedtimecat2) (vediogames<-bedtimecat2),
nocapslatent
sem (AgeP3 sex_n nap_bi_n bedtimecat2 -> EatHome) (AgeP3 sex_n
nap_bi_n bedtimecat2-> vediogames) (vediogames vediogames AgeP3 sex_n
nap_bi_n -> EatHome), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimecat2) med(vediogames) dep(EatHome) mcreps(500)
rit rid zlc
estat gof, stats(indices residuals)
*Vediogames as a confounder:
xtmixed EatHome i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames, || School:

```

**Other analyses not used in the thesis:

*Diet and bedtime:

```
ologit bedtimeWDCat EatHome OBWH03_n sex_n i.medical_history_n School  
brant, detail
```

*Testing Model Assumptions. There are several ways to test the proportional odds/ parallel

*lines assumption of the ordered logit model. We will start with the Brant test, which also helps to

*clarify exactly what the assumption is. We will explain the assumption further when we discuss

*generalized ordered logit (GOLGIT) models. Appendix A will show other methods.

*Brant Test. If you have downloaded and installed spost13, you can use the brant command

*to do Brant's test of ologit's parallel regression/ proportional odds assumption:

*==>The insignificant overall chi-square value (given in the row labeled All) suggests that ologit's

*assumptions are met. (Of course, this sample is very small; with larger samples it is not at all

*unusual to find that the proportional odds assumption is violated.) brant also gives tests for each

*individual independent variable.

```
xtmixed bedtimeWDCat EatHome OBWH03_n sex_n i.medical_history_n, ||  
School:
```

*Mixed effect model for ordinal (Categorical,ordinal) outcome(Mixed Effect Ordinal Regression)

```
meologit bedtime123 DineOut sex_n AgeP3 i.medical_history_n vediogames  
nap_bi ||School:
```

```
meologit bedtime123 EatHome sex_n AgeP3 i.medical_history_n vediogames  
nap_bi ||School:
```

*This command (xtmelogit) for BINARY outcome:

```
xtmelogit bed12 DineOut OBWH03_n sex_n i.medical_history_n nap_bi ||  
School:
```

```
xtmelogit bed12 DineOut sex_n i.medical_history_n nap_bi ||School:
```

```
sem (bedtime123<-nap_bi DineOut) (nap_bi<-DineOut), nocapslatent  
sem (vediogames DineOut AgeP3 sex_n nap_bi_n DineOut -> bedtime123)  
( vediogames DineOut AgeP3 sex_n nap_bi_n DineOut-> nap_bi)  
(vediogames DineOut nap_bi AgeP3 sex_n nap_bi_n -> bedtime123),  
vce(bootstrap, reps(5000)) nocapslatent
```

```
estat teffects
medsem, indep(DineOut) med( nap_bi ) dep(bedtime123) mcreps(500) rit
rid
```

```
*****
*****
*****
*****PAPER
3*****
*****Obesity, BMI and
bedtime*****
*Mixed effect linear regression model:
xtmixed BMI3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

*Mixed effect logistic regression model:
xtmelogit OBWH03_n i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmelogit, or

*Mixed effect ordinal regression model:
meologit WH0catP3 i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
meologit, or
```

```
*****
*****
*****
*****
*****
```

*****Mediation

Analysis*****

*Barron and Kenny Method:

*First: HSCRPUgml

*1- Estimate the relationship between X on Y (hours since dawn on degree of wakefulness) -Path "c" must be significantly different from 0; must have a total effect between the IV & DV

```
regress HSCRPUgml bed12bin_n sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
xtreg HSCRPUgml bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg HSCRPUgml bedtimeWDcat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

*2- Estimate the relationship between X on M (hours since dawn on coffee consumption) -Path "a" must be significantly different from 0; IV and mediator must be related.

```
regress BMI3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
xtreg BMI3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg BMI3 bedtimeWDcat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

*3- Estimate the relationship between M on Y controlling for X (coffee consumption on wakefulness, controlling for hours since dawn) -Path "b" must be significantly different from 0; mediator and DV must be related. -The effect of X on Y decreases with the inclusion of M in the model

```
regress HSCRPUgml BMI3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
xtreg HSCRPUgml BMI3 bed12bin_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut
```

```
xtreg HSCRPUgml BMI3 bedtimeWDcat sex_n AgeP3 nap_bi_n
```

i.medical_history_n vediogames DineOut

*4- Estimate the relationship between Y on X controlling for M (wakefulness on hours since dawn, controlling for coffee consumption)

-Should be non-significant and nearly 0.

regress bed12bin_n HSCR Pugml BMI3 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

YES BMI3 is a mediator for the HSCR Pugml **

*Second:IL6 Serum

*1- Estimate the relationship between X on Y (hours since dawn on degree of wakefulness) -Path "c" must be significantly different from 0; must have a total effect between the IV & DV

regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

*2- Estimate the relationship between X on M (hours since dawn on coffee consumption) -Path "a" must be significantly different from 0; IV and mediator must be related.

regress BMI3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

*3- Estimate the relationship between M on Y controlling for X (coffee consumption on wakefulness, controlling for hours since dawn) -Path "b" must be significantly different from 0; mediator and DV must be related. -The effect of X on Y decreases with the inclusion of M in the model

regress IL6_Se_P3 BMI3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

*4- Estimate the relationship between Y on X controlling for M (wakefulness on hours since dawn, controlling for coffee consumption)

-Should be non-significant and nearly 0.

regress bed12bin_n IL6_Se_P3 BMI3 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

YES BMI3 is a mediator for the IL6 serum **

*Third:IL6 Saliva ==> log

*1- Estimate the relationship between X on Y (hours since dawn on degree of wakefulness) -Path "c" must be significantly different from 0; must have a total effect between the IV & DV

regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

*2- Estimate the relationship between X on M (hours since dawn on coffee consumption) -Path "a" must be significantly different from 0; IV and mediator must be related.

regress BMI3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust

*3- Estimate the relationship between M on Y controlling for X (coffee consumption on wakefulness, controlling for hours since dawn) -Path "b" must be significantly different from 0; mediator and DV must be related. -The effect of X on Y decreases with the inclusion of M in the model

```

regress logIL6_P3 BMI3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
*4- Estimate the relationship between Y on X controlling for M
(wakefulness on hours since dawn, controlling for coffee consumption)
-Should be non-significant and nearly 0.
regress bed12bin_n logIL6_P3 BMI3 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
***NO BMI3 is not a mediator for the IL6 saliva***

```

```

*Mediation analysis for CRP serum and bedtime WEEKDAY SEM method
*Binary bedtime weekDAYS
sem (HSCRPUgml<-BMI3 bed12bin_n) (BMI3<-bed12bin_n), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> HSCRPUgml)
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> HSCRPUgml),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(BMI3) dep(HSCRPUgml) mcreps(500) rit rid

```

```

*Categorical bedtime weekDAYS
sem (HSCRPUgml<-BMI3 bedtimeWDcat) (BMI3<-bedtimeWDcat), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat ->
HSCRPUgml) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> HSCRPUgml),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimeWDcat) med(BMI3) dep(HSCRPUgml) mcreps(500) rit
rid

```

```

*Mediation analysis using mixed effect:
ml_mediation, dv(HSCRPUgml) iv(bed12bin_n) mv(BMI3) l2id(School)
ml_mediation, dv(HSCRPUgml) iv(bedtimeWDcat) mv(BMI3) l2id(School)

```

* Third: IL6 Slaiva

```

*Binary bedtime weekdays
sem (logIL6_P3<-BMI3 bed12bin_n) (BMI3<-bed12bin_n), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> logIL6_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL6_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(BMI3) dep(logIL6_P3) mcreps(500) rit rid
zlc

```

```

*Categorical bedtime weekdays
sem (logIL6_P3<-BMI3 bedtimeWDcat) (BMI3<-bedtimeWDcat), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat ->
logIL6_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL6_P3),

```

```
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimeWDcat) med(BMI3) dep(logIL6_P3) mcreps(500) rit
rid zlc
```

*Mediation analysis using mixed effect:

```
ml_mediation, dv(logIL6_P3) iv(bed12bin_n) mv(BMI3) l2id(School)
ml_mediation, dv(logIL6_P3) iv(bedtimeWDcat) mv(BMI3) l2id(School)
```

* Fourth: IL8 Slaiva

*Binary bedtime weekdays

```
sem (logIL8_P3 <-BMI3 bed12bin_n) (BMI3<-bed12bin_n), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> logIL8_P3 )
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_P3 ),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(BMI3) dep(logIL8_P3 ) mcreps(500) rit
rid zlc
```

*Categorical bedtime weekdays

```
sem (logIL8_P3 <-BMI3 bedtimeWDcat) (BMI3<-bedtimeWDcat), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat ->
logIL8_P3 ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_P3 ),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimeWDcat) med(BMI3) dep(logIL8_P3 ) mcreps(500) rit
rid zlc
```

*Mediation analysis using mixed effect:

```
ml_mediation, dv(logIL8_P3) iv(bed12bin_n) mv(BMI3) l2id(School)
ml_mediation, dv(logIL8_P3 ) iv(bedtimeWDcat) mv(BMI3) l2id(School)
```

* Fifth: IL8 Serum

*Binary bedtime weekdays

```
sem (logIL8_Se_P3<-BMI3 bed12bin_n) (BMI3<-bed12bin_n), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n ->
logIL8_Se_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(BMI3) dep(logIL8_Se_P3) mcreps(500) rit
rid zlc
```

*Categorical bedtime weekdays

```
sem (logIL8_Se_P3<-BMI3 bedtimeWDcat) (BMI3<-bedtimeWDcat),
nocapslatent
```

```
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat ->
logIL8_Se_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtimeWDcat->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimeWDcat) med(BMI3) dep(logIL8_Se_P3) mcreps(500)
rit rid zlc
```

*Mediation analysis using mixed effect:

```
ml_mediation, dv(logIL8_Se_P3) iv(bed12bin_n) mv(BMI3) l2id(School)
ml_mediation, dv(logIL8_Se_P3) iv(bedtimeWDcat) mv(BMI3) l2id(School)
*****
*****
```

This is the mediator supposed to use with this average cat bedtime variable but not used.

***** BMI as a possible mediator*****

Average bedtime used in this study

* 1: CRP Saliva

*Categorical Average bedtime:

```
sem (logCRP_P3<-BMI3 bedtimecat2) (BMI3<-bedtimecat2), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtimecat2 -> logCRP_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtimecat2-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logCRP_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimecat2) med(BMI3) dep(logCRP_P3) mcreps(500) rit
rid
```

estat gof, stats(indices residuals)

* BMI not mediator (indirect effect is not stat significant)

* 2: HSCRIP

*Categorical Average bedtime:

```
sem (HSCRIPugml<-BMI3 bedtimecat2) (BMI3<-bedtimecat2), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtimecat2 -> HSCRIPugml)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtimecat2-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> HSCRIPugml),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtimecat2) med(BMI3) dep(HSCRIPugml) mcreps(500) rit
rid
```

estat gof, stats(indices residuals)

* BMI is a mediator for the association between

* 3- IL6 Serum

*Categorical Average bedtime:

```
sem (IL6_Se_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> IL6_Se_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
```

```
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> IL6_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(IL6_Se_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)
```

* 4- IL-6 saliva

*Categorical Average bedtime:

```
sem (logIL6_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 -> logIL6_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123-> BMI3)
(vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL6_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL6_P3) mcreps(500) rit rid
estat gof, stats(indices residuals)
```

* 5- IL_8 serum

```
sem (logIL8_Se_P3<-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL8_Se_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL8_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL8_Se_P3) mcreps(500) rit
rid
estat gof, stats(indices residuals)
```

* 6- IL_10 serum

```
sem (logIL10_Se <-BMI3 bedtime123) (BMI3<-bedtime123), nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123 ->
logIL10_Se ) ( vediogames DineOut AgeP3 sex_n nap_bi_n bedtime123->
BMI3) (vediogames DineOut BMI3 AgeP3 sex_n nap_bi_n -> logIL10_Se),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bedtime123) med(BMI3) dep(logIL10_Se ) mcreps(500) rit
rid
estat gof, stats(indices residuals)
```

***** Waist Circumference as a possible mediator*****

* First: HSCRPl

```
sem (HSCRPl<-Waist_cm3 bed12bin_n) (Waist_cm3<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> HSCRPl)
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> Waist_cm3)
(vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n -> HSCRPl),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
```

```
medsem, indep(bed12bin_n) med(Waist_cm3) dep(HSCR Pugml) mcreps(500)
rit rid
```

* WC is not a mediator for the association

* Second: IL6 Serum

```
sem (IL6_Se_P3<-Waist_cm3 bed12bin_n) (Waist_cm3<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> IL6_Se_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> Waist_cm3)
(vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n -> IL6_Se_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(Waist_cm3) dep(IL6_Se_P3) mcreps(500)
rit rid zlc
```

* WC is not a mediator for the association

* Third: IL6 Slaiva

```
sem (logIL6_P3<-Waist_cm3 bed12bin_n) (Waist_cm3<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> logIL6_P3)
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> Waist_cm3)
(vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n -> logIL6_P3),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(Waist_cm3) dep(logIL6_P3) mcreps(500)
rit rid zlc
```

* WC is not a mediator for the association

*IL-10 serum

```
sem (logIL10_Se<-Waist_cm3 bed12bin_n) (Waist_cm3<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n -> logIL10_Se)
( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n-> Waist_cm3)
(vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n -> logIL10_Se),
vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(Waist_cm3) dep(logIL10_Se) mcreps(500)
rit rid zlc
```

*Insulin saliva:

```
sem (logInsulin_P3<-Waist_cm3 bed12bin_n) (Waist_cm3<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n ->
logInsulin_P3) ( vediogames DineOut AgeP3 sex_n nap_bi_n bed12bin_n->
Waist_cm3) (vediogames DineOut Waist_cm3 AgeP3 sex_n nap_bi_n ->
logInsulin_P3), vce(bootstrap, reps(5000)) nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(Waist_cm3) dep(logInsulin_P3)
mcreps(500) rit rid zlc
```

***** Nap as a possible

mediator*****

* First: HSCR P

```
sem (HSCR Pugml<-nap_bi_n bed12bin_n) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bed12bin_n -> HSCR Pugml)
( vediogames DineOut AgeP3 sex_n bed12bin_n-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> HSCR Pugml), vce(bootstrap, reps(5000))
nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(nap_bi_n) dep(HSCR Pugml) mcreps(500) rit
rid
```

* NAP is not a mediator for the association

* Second: IL6 Serum

```
sem (IL6_Se_P3<-nap_bi_n bed12bin_n) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bed12bin_n -> IL6_Se_P3)
( vediogames DineOut AgeP3 sex_n bed12bin_n-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> IL6_Se_P3), vce(bootstrap, reps(5000))
nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(nap_bi_n) dep(IL6_Se_P3) mcreps(500) rit
rid zlc
```

* NAP is not a mediator for the association

* Third: IL6 Slaiva

```
sem (logIL6_P3<-nap_bi_n bed12bin_n) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bed12bin_n -> logIL6_P3)
( vediogames DineOut AgeP3 sex_n bed12bin_n-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logIL6_P3), vce(bootstrap, reps(5000))
nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(nap_bi_n) dep(logIL6_P3) mcreps(500) rit
rid zlc
```

* NAP is not a mediator for the association

* Second: IL10 Serum

```
sem (IL6_Se_P3<-nap_bi_n bed12bin_n) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bed12bin_n -> IL6_Se_P3)
( vediogames DineOut AgeP3 sex_n bed12bin_n-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> IL6_Se_P3), vce(bootstrap, reps(5000))
nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(nap_bi_n) dep(IL6_Se_P3) mcreps(500) rit
rid zlc
```

* NAP is not a mediator for the association

* Third: Insulin Slaiva

```

sem (logIL6_P3<-nap_bi_n bed12bin_n) (nap_bi_n<-bed12bin_n),
nocapslatent
sem (vediogames DineOut AgeP3 sex_n bed12bin_n -> logIL6_P3)
( vediogames DineOut AgeP3 sex_n bed12bin_n-> nap_bi_n) (vediogames
DineOut nap_bi_n AgeP3 sex_n -> logIL6_P3), vce(bootstrap, reps(5000))
nocapslatent
estat teffects
medsem, indep(bed12bin_n) med(nap_bi_n) dep(logIL6_P3) mcreps(500) rit
rid zlc
* NAP is not a mediator for the association
*****
*****
*Second check for effect modification:

*****
*****
*****EFFECT
MODIFIERS*****

*****OBWH03_n as suspected effect modifier for with
Sleep_time_weekday*****
*generating interaction term:
gen intSLEP120BE = bed12bin_n * OBWH03_n
*Third: IL6 saliva
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut OBWH03_n c.intSLEP120BE, robust

*Another way to generate interactin term
regress CRP_P3 bed12bin_n##OBWH03_n
regress IL6_Se_P3 bed12bin_n##OBWH03_n
regress logIL6_P3 bed12bin_n##OBWH03_n
*OBWH03_n is not an effect modifier for IL6 saliva with bed12bin_n
because the interaction term was not statistically significant
*****
*****
*Dr. Redline:
*Consider the analysis with and without the NAP variable: (Abeer ==>
suspected confounding variable)
* First: HSCR
regress HSCR Pugml Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCR Pugml Sleep_time_weekday sex_n i.School AgeP3
i.medical_history_n vediogames DineOut, robust
* when applying the 10% rule we found that NAP is a confounding
variable (12%)
regress HSCR Pugml bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCR Pugml bed12bin_n sex_n i.School AgeP3 i.medical_history_n
vediogames DineOut, robust
* when applying the 10% rule we found that NAP is a confounding

```

variable (15%)

* Second: IL6 Serum

```
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3
```

```
i.medical_history_n vediogames DineOut, robust
```

* when applying the 10% rule we found that NAP is NOT a confounding variable (5.7% but when we look at the definition of conofunder we can say that NAP is a confounding variable)

```
regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 i.medical_history_n  
vediogames DineOut, robust
```

* when applying the 10% rule we found that NAP is a confounding variable (14.5%).

* Third: IL6 Slaiva

```
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3
```

```
i.medical_history_n vediogames DineOut, robust
```

* when applying the 10% rule we found that NAP is NOT a confounding variable (5.7% but when we look at the definition of conofunder we can say that NAP is a confounding variable)

```
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
```

```
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 i.medical_history_n  
vediogames DineOut, robust
```

* when applying the 10% rule we found that NAP is a confounding variable (11.6%)


```
xtmixed logIL10 AverageSleepDuration sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL10 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL10 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed logIL10 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL10 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL10 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed logIL10 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
```

```

vediogames DineOut, || School:
xtmixed logIL10 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed logIL10 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed logIL10 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed logIL10 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

*****
*****
*RANDOM EFFECT MODELS for the biomarkers saliva and serum
*RANDOM EFFECT MODEL
xtreg logInsulin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logInsulin_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logInsulin_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logInsulin_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logInsulin_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logInsulin_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logInsulin_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logInsulin_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```
xtreg logInsulin_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logInsulin_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg logInsulin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_Se_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logInsulin_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logInsulin_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut
xtreg logInsulin_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_Se_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_Se_P3 sleepdept sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logInsulin_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logInsulin_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logInsulin_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logInsulin_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

***RANDOM EFFECT MODEL**

```
xtreg logMCP1_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logMCP1_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
```

```
xtreg logMCP1_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logMCP1_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logMCP1_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```

xtreg logMCP1_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```

xtreg logMCP1_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

*RANDOM EFFECT MODEL

```

xtreg logMCP1_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```

xtreg logMCP1_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```

xtreg logMCP1_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```

xtreg logMCP1_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```

xtreg logMCP1_Se_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```

xtreg logMCP1_Se_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logMCP1_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logMCP1_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n

```

```
i.medical_history_n vediogames DineOut
```

```
xtreg logMCP1_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logMCP1_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

***RANDOM EFFECT MODEL**

```
xtreg logLeptin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logLeptin_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logLeptin_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_P3 i.timeanddduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logLeptin_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg logLeptin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logLeptin_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_Se_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logLeptin_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logLeptin_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg VEGF_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg VEGF_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg VEGF_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg VEGF_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg VEGF_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg VEGF_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg VEGF_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg VEGF_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg VEGF_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg VEGF_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg logVEGF_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logVEGF_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logVEGF_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logVEGF_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logVEGF_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
```

```

vediogames DineOut
xtreg logVEGF_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logVEGF_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logVEGF_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logVEGF_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logVEGF_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logVEGF_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logVEGF_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logVEGF_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logVEGF_Se_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logVEGF_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logVEGF_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logVEGF_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logVEGF_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

*RANDOM EFFECT MODEL
xtset
xtreg logIL10 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL10 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut

xtreg logIL10 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n

```

```

vediogames DineOut
xtreg logIL10 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL10 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 i.bedtimeWDcat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 i.bedtimeWEcat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut

xtreg logIL10 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL10 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 i.sleepdeptcat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL10 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

*RANDOM EFFECT MODEL
xtreg logIL10_Se AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10_Se Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10_Se Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL10_Se bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10_Se bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10_Se bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut

xtreg logIL10_Se bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10_Se bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10_Se bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

```

```
xtreg logIL10_Se i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10_Se i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10_Se i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logIL10_Se i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logIL10_Se sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL10_Se i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10_Se i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logIL10_Se social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL10_Se i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg logIL8_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL8_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL8_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL8_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL8_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
```

```
xtreg logIL8_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL8_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL8_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL8_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL8_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_P3 i.timeanddduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logIL8_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logIL8_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

``` *RANDOM EFFECT MODEL ```

```
xtreg logIL8_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logIL8_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logIL8_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logIL8_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_Se_P3 i.timeanddduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_Se_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg logIL8_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logIL8_Se_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logIL8_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT

```
xtset  
xtreg logCRP_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logCRP_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logCRP_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logCRP_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg logCRP_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logCRP_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logCRP_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logCRP_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
*Significant
```

```
xtreg logCRP_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logCRP_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logCRP_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logCRP_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg HSCRPUgml AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg HSCRPUgml Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg HSCRPUgml Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg HSCRPUgml bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg HSCRPUgml bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg HSCRPUgml bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg HSCRPUgml bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
*sig  
xtreg HSCRPUgml bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
*sig  
xtreg HSCRPUgml bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg HSCRPUgml i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg HSCRPUgml i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg HSCRPUgml i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg HSCRPUgml i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
*sig
```

```
xtreg HSCRPUgml sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg HSCRPUgml i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg HSCRPUgml i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg HSCRPUgml social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```

xtreg HSCR Pugml i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

*RANDOM EFFECT MODEL
xtreg logIL6_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL6_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
*sig
xtreg logIL6_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL6_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL6_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL6_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
*Sig

xtreg logIL6_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
*sig
xtreg logIL6_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
*sig
xtreg logIL6_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL6_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL6_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
*sig
xtreg logIL6_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL6_P3 i.timeanddduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL6_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL6_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logIL6_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut

xtreg logIL6_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut
xtreg logIL6_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n

```

```
i.medical_history_n vediogames DineOut
```

```
*RANDOM EFFECT MODEL
```

```
xtreg IL6_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg IL6_Se_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg IL6_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
*sig
```

```
xtreg IL6_Se_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
*sig
```

```
xtreg IL6_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
*sig
```

```
xtreg IL6_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg IL6_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
*sig
```

```
xtreg IL6_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
*sig
```

```
xtreg IL6_Se_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg IL6_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg IL6_Se_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut
```

```
xtreg IL6_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg logAdiponectin_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_P3 bedtime_both2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 bed_hour sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 bed_weekend sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut  
xtreg logAdiponectin_P3 bed12bin_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_P3 i.bedtime123 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_P3 sleepdept sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_P3 social_getlag sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut
```

*RANDOM EFFECT MODEL

```
xtreg logAdiponectin_Se_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut  
xtreg logAdiponectin_Se_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_Se_P3 bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 bed_hour sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 bed_weekend sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_Se_P3 bed12 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 bed12bin_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_Se_P3 i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_Se_P3 i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_Se_P3 sleepdept sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

```
xtreg logAdiponectin_Se_P3 social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
xtreg logAdiponectin_Se_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut
```

*Regression Models:

*First: HSCR

```
regress HSCR Pugml AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCR Pugml AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress HSCR Pugml AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress HSCR Pugml Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
```

```
i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress HSCRPUgml Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress HSCRPUgml bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress HSCRPUgml bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress HSCRPUgml bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress HSCRPUgml bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress HSCRPUgml bedtime_both2 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml bed_hour sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml bed_weekend_ sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
```

```
regress HSCRPUgml sleepdept sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress HSCRPUgml social_getlag sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
*Conclusion: when it comes to sleepdept and social jetlag==> both IL-6
salica and CRP act in the same way and IL-6 is opposite, (and was
stat. sig. with IL-6 saliva only)
```

*Second: IL6 Serum

```
regress IL6_Se_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress IL6_Se_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress IL6_Se_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress IL6_Se_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```

regress IL6_Se_P3 bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress IL6_Se_P3 bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust

```

```

regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress IL6_Se_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust

```

```

regress IL6_Se_P3 bedtime_both2 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 bed_hour sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 bed_weekend_ sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
*For bedtime as continuous variable==> children go to sleep late (late
bedtime)on weekends have SIGNIFICANTLY higher IL-6 level in SERUM.

```

```

regress IL6_Se_P3 sleepdept sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress IL6_Se_P3 social_getlag sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
*Conclusion: when it comes to sleepdept and social jetlag==> both IL-6
saliva and CRP act in the same way and IL-6 is opposite, (and was
stat. sig. with IL-6 saliva only)

```

```

*Third: IL6 Saliva ==> log
regress logIL6_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress logIL6_P3 AverageSleepDuration sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust

```

```

regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress logIL6_P3 Sleep_time_weekday sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust

```

```

regress logIL6_P3 bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust

```

```
regress logIL6_P3 bed12 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 0, robust
regress logIL6_P3 bed12bin_n sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut if OBWH03_n == 1, robust
```

```
regress logIL6_P3 bedtime_both2 sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 bed_hour sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 bed_weekend sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
*For bedtime as continuous variable==> children go to sleep late (late
bedtime)on weekends have SIGNIFICANTLY lower IL-6 level in SALIVA.
* I can see that IL-6 is serum behaves opposite to that in saliva.
```

```
regress logIL6_P3 sleepdept sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
regress logIL6_P3 social_getlag sex_n i.School AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, robust
*Conclusion: when it comes to sleepdept and social jetlag==> both IL-6
salica and CRP act in the same way and IL-6 is opposite, (and was
stat. sig. with IL-6 saliva only)
```

```
*****
*****Paper 1 Adiponectin*****
*****
Abeer Add the variable snore_bi_n and compare between effect on serum
and saliva (affected ==> dryness)
then add electronics
```

```
*First: Adiponectin Saliva:
regress logAdiponectin_P3 bed12bin_n
regress logAdiponectin_P3 AverageSleepDuration
logistic Adiponectin_P3_75 bed12bin_n
logistic Adiponectin_P3_75 AverageSleepDuration
```

```
*For Dr.Hend
regress logAdiponectin_P3 bed12bin_n AgeP3 i.sex_n i.School DineOut
i.nap_n
regress logAdiponectin_P3 AverageSleepDuration AgeP3 i.sex_n i.School
DineOut i.nap_n
logistic Adiponectin_P3_75 bed12bin_n AgeP3 i.sex_n i.School DineOut
i.nap_n
logistic Adiponectin_P3_75 AverageSleepDuration AgeP3 i.sex_n i.School
DineOut i.nap_n
```

```

*For the paper:
regress logAdiponectin_P3 bed12bin_n i.nap_n electronic OBWH03_n
regress logAdiponectin_P3 AverageSleepDuration
regress logAdiponectin_P3 snore_bi_n
*****
logistic Adiponectin_P3_75 bed12bin_n i.sex_n School i.nap_n dinner
electronic snore_bi_n
logistic Adiponectin_P3_75 AverageSleepDuration i.sex_n i.nap_n dinner
electronic snore_bi_n
*****

```

```

*Second: Adiponectin Serum:
regress logAdiponectin_Se_P3 bed12bin_n
regress logAdiponectin_Se_P3 AverageSleepDuration
logistic Adiponectin_Se_P3_n bed12bin_n
logistic Adiponectin_Se_P3_n AverageSleepDuration

```

```

*For Dr.Hend
regress logAdiponectin_Se_P3 bed12bin_n AgeP3 i.sex_n i.School DineOut
i.nap_n
regress logAdiponectin_Se_P3 AverageSleepDuration AgeP3 i.sex_n
i.School DineOut i.nap_n
logistic Adiponectin_Se_P3_n AverageSleepDuration i.sex_n i.School
DineOut i.nap_n

```

```

*For the paper:
regress logAdiponectin_Se_P3 bed12bin_n i.nap_n AgeP3
regress logAdiponectin_Se_P3 AverageSleepDuration i.nap_n AgeP3
logistic Adiponectin_Se_P3_n AverageSleepDuration i.sex_n School
DineOut
logistic Adiponectin_Se_P3_n AverageSleepDuration i.sex_n School
i.nap_bi_n dinner
*****
logistic Adiponectin_Se_P3_n bed12bin_n AgeP3 i.sex_n School DineOut
i.nap_n electronic snore_bi_n
logistic Adiponectin_Se_P3_n bed12bin_n i.sex_n School i.nap_n DineOut
electronic snore_bi_n
logistic Adiponectin_Se_P3_n bed12bin_n i.sex_n School i.nap_n dinner
electronic snore_bi_n
*****

```

```

*Third: Saliva vs Serum Adiponectin:
regress logAdiponectin_P3 Adiponectin_Se_P3
*****
*****Paper 2 IL_6 *****
*****
*First: IL-6 Saliva:
*Bivariate Analysis:
regress IL6_P3 bed12bin_n

```

```
regress IL6_P3 AverageSleepDuration
regress IL6_Se_P3 bed12bin_n
regress IL6_Se_P3 AverageSleepDuration
```

*For Dr. Hend:

```
regress IL6_P3 AverageSleepDuration AgeP3 i.sex_n School DineOut
i.nap_n electronic
regress IL6_Se_P3 AverageSleepDuration AgeP3 i.sex_n School DineOut
i.nap_n electronic
```

*For the paper:

```
regress IL6_P3 AverageSleepDuration i.nap_n i.sex_n School dinner
electronic
regress IL6_Se_P3 AverageSleepDuration i.nap_n i.sex_n School dinner
electronic
```

```
regress IL6_P3 bed12bin_n AgeP3 i.sex_n School DineOut i.nap_n
electronic snore_bi_n
regress IL6_Se_P3 bed12bin_n AgeP3 i.sex_n School DineOut i.nap_n
electronic
```

```
regress IL6_P3 bed12bin_n i.sex_n School i.nap_n dinner electronic
snore_bi_n
```

```
regress IL6_Se_P3 bed12bin_n i.sex_n i.School i.nap_n dinner
electronic
```

*****Paper 3 HSCRPUgml *****

```
regress HSCRPUgml bed12bin_n
regress HSCRPUgml AverageSleepDuration
```

*For Dr. Hend:

```
regress HSCRPUgml AverageSleepDuration AgeP3 i.sex_n School DineOut
i.nap_n
```

*For the paper:

```
regress HSCRPUgml AverageSleepDuration i.sex_n School i.nap_n DineOut
electronic
```

```
regress HSCRPUgml bed12bin_n AgeP3 i.sex_n i.School DineOut i.nap_n
electronic
```

```
regress HSCRPUgml bed12bin_n i.sex_n i.School i.nap_n DineOut
electronic
```

* Effect Modifier for Adiponectin:

```
gen intSLEP120BE= bed12bin_n * OBWH03_n
```

* Analyses for IL6 saliva and serum:

```
regress logIL6_P3 bed12bin_n  
regress logIL6_Se_P3 bed12bin_n
```

*by sleeping at or after 12

```
regress logAdiponectin_P3 bed12bin_n  
logistic Adiponectin_P3_75 bed12bin_n  
regress logAdiponectin_Se_P3 bed12bin_n  
logistic Adiponectin_Se_P3_n bed12bin_n  
regress logIL6_P3 bed12bin_n  
regress IL6_Se_P3 bed12bin_n  
regress logHSCRPUgml bed12bin_n
```

```
regress logAdiponectin_P3 bed12bin_n OBWH03_n intSLEP120BE  
electronic_n dinner snore_n  
logistic Adiponectin_P3_75 bed12bin_n OBWH03_n intSLEP120BE  
electronic_n dinner snore_n  
regress logAdiponectin_Se_P3 bed12bin_n OBWH03_n intSLEP120BE sex_n  
electronic_n dinner snore_n physical_act  
logistic Adiponectin_Se_P3_n bed12bin_n OBWH03_n sex_n physical_act  
snore_n dinner  
regress logIL6_P3 bed12bin_n sex_n physical_act snore_n dinner  
regress IL6_Se_P3 bed12bin_n  
regress logHSCRPUgml bed12bin_n OBWH03_n intSLEP120BE
```

```
regress logAdiponectin_P3 bed12bin_n dinner physical_act OBWH03_n  
logistic Adiponectin_P3_75 bed12bin_n sex_n medical_history OBWH03_n  
regress logAdiponectin_Se_P3 bed12bin_n dinner AgeP3 sex_n School  
nap_bi_n  
regress logIL6_P3 bed12bin_n dinner AgeP3 i.sex_n School i.nap_bi_n  
regress IL6_Se_P3 bed12bin_n dinner AgeP3 sex_n School nap_bi_n  
regress logHSCRPUgml bed12bin_n School nap_bi_n AgeP3 sex_n dinner
```

```
regress logAdiponectin_P3 bed12bin_n dinner AgeP3 sex_n School  
nap_bi_n  
logistic Adiponectin_P3_75 bed12bin_n dinner AgeP3 sex_n School  
nap_bi_n  
regress logAdiponectin_Se_P3 bed12bin_n dinner AgeP3 sex_n School  
nap_bi_n  
regress logIL6_P3 bed12bin_n dinner AgeP3 i.sex_n School i.nap_bi_n  
regress IL6_Se_P3 bed12bin_n dinner AgeP3 sex_n School nap_bi_n  
regress logHSCRPUgml bed12bin_n School nap_bi_n AgeP3 sex_n dinner
```

*more confounders

```
regress logAdiponectin_P3 bed12bin_n electronic_n dinner AgeP3 sex_n  
School nap_bi_n physical_act OBWH03_n  
logit Adiponectin_P3_75 bed12bin_n electronic_n dinner AgeP3 sex_n  
School nap_bi_n physical_act OBWH03_n  
regress logAdiponectin_Se_P3 bed12bin_n electronic_n dinner AgeP3
```

```
sex_n School nap_bi_n physical_act OBWH03_n
regress logIL6_P3 bed12bin_n electronic_n dinner AgeP3 i.sex_n School
i.nap_bi_n physical_act OBWH03_n
regress IL6_Se_P3 bed12bin_n electronic_n dinner AgeP3 sex_n School
nap_bi_n OBWH03_n physical_act
regress logHSCRPUgml bed12bin_n School nap_bi_n AgeP3 sex_n dinner
electronic_n OBWH03_n physical_act
```

```
*By sleep time weekend
regress logAdiponectin_P3 i.Sleep_time_weekend_n electronic_n dinner
mom_edu_n snore_n
logistic Adiponectin_P3_75 i.Sleep_time_weekend_n electronic_n dinner
mom_edu_n snore_n
regress logAdiponectin_Se_P3 i.Sleep_time_weekend_n electronic_n
dinner mom_edu_n snore_n
regress logIL6_P3 i.Sleep_time_weekend_n
regress IL6_Se_P3 i.Sleep_time_weekend_n
regress logHSCRPUgml i.Sleep_time_weekend_n
```

```
*By sleep time weekday
regress logAdiponectin_P3 i.Sleep_time_weekday_n OBWH03_n intSLEP120BE
electronic_n dinner mom_edu_n snore_n
logistic Adiponectin_P3_75 i.Sleep_time_weekday_n OBWH03_n
intSLEP120BE electronic_n dinner mom_edu_n snore_n
regress logAdiponectin_Se_P3 i.Sleep_time_weekday_n OBWH03_n
intSLEP120BE electronic_n dinner mom_edu_n snore_n
regress logIL6_P3 i.Sleep_time_weekday_n
regress IL6_Se_P3 i.Sleep_time_weekday_n
regress logHSCRPUgml i.Sleep_time_weekday_n
```

*****By biomarker*****

```
*First: Salivary adiponectin
regress logAdiponectin_P3 sleep_duration6_n electronic_n dinner AgeP3
sex_n School nap_bi_n physical_act OBWH03_n
regress logAdiponectin_P3 bed12bin_n School nap_bi_n AgeP3 sex_n
dinner
regress logAdiponectin_P3 bed12bin_n School nap_bi_n AgeP3 sex_n
dinner electronic_n
regress logAdiponectin_P3 AverageSleepDuration School nap_bi_n AgeP3
sex_n dinner
regress logAdiponectin_P3 sleep_duration6_n electronic_n dinner AgeP3
sex_n School nap_bi_n physical_act OBWH03_n
```

```
*Second: Serum Adiponectin
regress logAdiponectin_Se_P3 bed12bin_n School nap_bi_n AgeP3 sex_n
DineOut
regress logAdiponectin_Se_P3 bed12bin_n School nap_bi_n AgeP3 sex_n
dinner
regress logAdiponectin_Se_P3 bed12bin_n School nap_bi_n AgeP3 sex_n
DineOut electronic_n
regress logAdiponectin_Se_P3 AverageSleepDuration School nap_bi_n
```

```

AgeP3 sex_n DineOut
regress logAdiponectin_Se_P3 AverageSleepDuration School i.nap_bi_n
AgeP3 i.sex_n i.dinner
regress logAdiponectin_P3 sleep_duration6_n electronic_n dinner AgeP3
sex_n School nap_bi_n physical_act OBWH03_n

```

*Third: Salivary IL6

```

stepwise, pr(.10): regress IL6_P3 School sex_n AgeP3 med_hist_n
medical_history_n meds_n mom_diab_n dad_diab_n mom_edu_n mother_ed_n
dad_edu_n fath_ed_n sleep_weekday_n wakeup_weekday_n
Sleep_time_weekday_n sleep_weekend_n wakeup_weekend_n
Sleep_time_weekend_n interrupted_sleep_n interrupted_sleep_bi_n
wakeup_night_n wakeupnight_bin_n sleepy_day_n sleepy_day_bi_n
hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n
sleep_duration7_n sleep_duration8_n WH0cat3_n OBWH03_n electronic_n
dinner physical_act
regress logIL6_P3 sleep_duration6_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
regress logIL6_P3 i.bed12bin_n electronic_n dinner AgeP3 i.sex_n
School i.nap_bi_n physical_act OBWH03_n
regress logIL6_P3 AverageSleepDuration School i.nap_bi_n AgeP3 i.sex_n
i.dinner
regress logIL6_P3 AverageSleepDuration School i.nap_bi_n AgeP3 i.sex_n
DineOut

```

*Fourth: Serum IL6

```

stepwise, pr(.10): regress IL6_Se_P3 School sex_n AgeP3 med_hist_n
medical_history_n meds_n mom_diab_n dad_diab_n mom_edu_n mother_ed_n
dad_edu_n fath_ed_n sleep_weekday_n wakeup_weekday_n
Sleep_time_weekday_n sleep_weekend_n wakeup_weekend_n
Sleep_time_weekend_n interrupted_sleep_n interrupted_sleep_bi_n
wakeup_night_n wakeupnight_bin_n sleepy_day_n sleepy_day_bi_n
hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n
sleep_duration7_n sleep_duration8_n WH0cat3_n OBWH03_n electronic_n
dinner physical_act
regress IL6_Se_P3 bed12bin_n School nap_bi_n AgeP3 sex_n DineOut
regress IL6_Se_P3 bed12bin_n School nap_bi_n AgeP3 sex_n dinner
regress IL6_Se_P3 bed12bin_n School nap_bi_n AgeP3 sex_n DineOut
electronic_n
regress IL6_Se_P3 AverageSleepDuration School nap_bi_n AgeP3 sex_n
DineOut
regress IL6_Se_P3 AverageSleepDuration School nap_bi_n AgeP3 sex_n
DineOut electronic_n
regress IL6_Se_P3 sleep_duration6_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n

```

*Fifth: HSCR Pugml

```
stepwise, pr(.10): regress logHSCR Pugml School sex_n AgeP3 med_hist_n
medical_history_n meds_n mom_diab_n dad_diab_n mom_edu_n mother_ed_n
dad_edu_n fath_ed_n sleep_weekday_n wakeup_weekday_n
Sleep_time_weekday_n sleep_weekend_n wakeup_weekend_n
Sleep_time_weekend_n interrupted_sleep_n interrupted_sleep_bi_n
wakeup_night_n wakeupnight_bin_n sleepy_day_n sleepy_day_bi_n
hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n
sleep_duration7_n sleep_duration8_n WHOcat3_n OBWH03_n electronic_n
dinner physical_act
regress logHSCR Pugml bed12bin_n School nap_bi_n AgeP3 sex_n DineOut
regress logHSCR Pugml bed12bin_n School nap_bi_n AgeP3 sex_n dinner
regress logHSCR Pugml bed12bin_n School nap_bi_n AgeP3 sex_n dinner
electronic_n
regress logHSCR Pugml AverageSleepDuration nap_bi_n AgeP3 sex_n dinner
regress logHSCR Pugml sleep_duration6_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
```

***Regression almost same above but divided by Sleep variables:

*First: sleep duration 6 hours:

```
regress logAdiponectin_P3 sleep_duration6_n electronic_n dinner AgeP3
sex_n School nap_bi_n physical_act OBWH03_n
regress logAdiponectin_Se_P3 sleep_duration6_n electronic_n dinner
AgeP3 sex_n School nap_bi_n physical_act OBWH03_n
regress logIL6_P3 sleep_duration6_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
regress IL6_Se_P3 sleep_duration6_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
regress logHSCR Pugml sleep_duration6_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
```

*Second: bed12bin_n

```
regress logAdiponectin_P3 bed12bin_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
logit Adiponectin_P3_75 bed12bin_n electronic_n dinner AgeP3 sex_n
School nap_bi_n physical_act OBWH03_n
regress logAdiponectin_Se_P3 bed12bin_n electronic_n dinner AgeP3
sex_n School nap_bi_n physical_act OBWH03_n
regress logIL6_P3 bed12bin_n electronic_n dinner AgeP3 i.sex_n School
i.nap_bi_n physical_act OBWH03_n
regress IL6_Se_P3 bed12bin_n electronic_n dinner AgeP3 sex_n School
nap_bi_n OBWH03_n physical_act
regress logHSCR Pugml bed12bin_n School nap_bi_n AgeP3 sex_n dinner
electronic_n OBWH03_n physical_act
```

```
regress logAdiponectin_P3 bed12bin_n electronic_n dinner sex_n School
nap_bi_n physical_act OBWH03_n wakeup_night_n
```

```

logit Adiponectin_P3_75 bed12bin_n electronic_n dinner sex_n School
nap_bi_n physical_act OBWH03_n wakeup_night_n
regress logAdiponectin_Se_P3 bed12bin_n electronic_n dinner sex_n
School nap_bi_n physical_act OBWH03_n interrupted_sleep_n
regress logIL6_P3 bed12bin_n electronic_n dinner sex_n School
i.nap_bi_n physical_act OBWH03_n interrupted_sleep_n
regress IL6_Se_P3 bed12bin_n electronic_n dinner sex_n School nap_bi_n
OBWH03_n physical_act interrupted_sleep_n wakeup_night_n
regress logHSCRPUgml bed12bin_n electronic_n dinner sex_n School
nap_bi_n OBWH03_n physical_act interrupted_sleep_n wakeup_night_n

```

*Third: AverageSleepDuration

```

regress logAdiponectin_P3 AverageSleepDuration School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act
regress logAdiponectin_Se_P3 AverageSleepDuration School nap_bi_n
AgeP3 sex_n dinner OBWH03_n physical_act
regress logIL6_P3 AverageSleepDuration School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act
regress IL6_Se_P3 AverageSleepDuration School nap_bi_n AgeP3 sex_n
dinner electronic_n OBWH03_n physical_act
regress logHSCRPUgml AverageSleepDuration School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act electronic

```

```

regress logAdiponectin_P3 i.AverageSleepDuration_cat School nap_bi_n
AgeP3 sex_n dinner OBWH03_n physical_act
regress logAdiponectin_Se_P3 i.AverageSleepDuration_cat School
nap_bi_n AgeP3 sex_n dinner OBWH03_n physical_act
regress logIL6_P3 i.AverageSleepDuration_cat School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act
regress IL6_Se_P3 i.AverageSleepDuration_cat School nap_bi_n AgeP3
sex_n dinner electronic_n OBWH03_n physical_act
regress logHSCRPUgml i.AverageSleepDuration_cat School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act electronic

```

*Fourth:

```

regress logAdiponectin_P3 AverageSleepDuration_bi School nap_bi_n
AgeP3 sex_n dinner OBWH03_n physical_act
regress logAdiponectin_Se_P3 AverageSleepDuration_bi School nap_bi_n
AgeP3 sex_n dinner OBWH03_n physical_act
regress logIL6_P3 AverageSleepDuration_bi School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act
regress IL6_Se_P3 AverageSleepDuration_bi School nap_bi_n AgeP3 sex_n
dinner electronic_n OBWH03_n physical_act
regress logHSCRPUgml AverageSleepDuration_bi School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act electronic

```

*Fifth: Average sleeptime in a week:

```

regress logAdiponectin_P3 Ave_Sleep_time_week School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act
regress logAdiponectin_Se_P3 Ave_Sleep_time_week School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act
regress logIL6_P3 Ave_Sleep_time_week School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act
regress IL6_Se_P3 Ave_Sleep_time_week School nap_bi_n AgeP3 sex_n
dinner electronic_n OBWH03_n physical_act
regress logHSCRPUgml Ave_Sleep_time_week School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act electronic

```

*Sixth: Sleep_time_weekday_n:

```

regress logAdiponectin_P3 Sleep_time_weekday_n School nap_bi_n AgeP3
sex_n dinner OBWH03_n physical_act electronic
regress logAdiponectin_Se_P3 Sleep_time_weekday_n School nap_bi_n
AgeP3 sex_n dinner OBWH03_n physical_act electronic
regress logIL6_P3 Sleep_time_weekday_n School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act electronic
regress IL6_Se_P3 Sleep_time_weekday_n School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act electronic
regress logHSCRPUgml Sleep_time_weekday_n School nap_bi_n AgeP3 sex_n
dinner OBWH03_n physical_act electronic

```

=====

*****Regression almost same above but divided by Sleep variables but with less confounding variables:

*First: sleep duration 6 hours:

```

regress logAdiponectin_P3 sleep_duration6_
regress logAdiponectin_Se_P3 sleep_duration6_n
regress logIL6_P3 sleep_duration6_n
regress IL6_Se_P3 sleep_duration6_n
regress logHSCRPUgml sleep_duration6_n

```

```

regress logAdiponectin_P3 sleep_duration6_n dinner AgeP3 sex_n School
nap_bi_n
regress logAdiponectin_Se_P3 sleep_duration6_n dinner AgeP3 sex_n
School nap_bi
regress logIL6_P3 sleep_duration6_n dinner AgeP3 sex_n School
nap_bi_n
regress IL6_Se_P3 sleep_duration6_n dinner AgeP3 sex_n School nap_bi_n
regress logHSCRPUgml sleep_duration6_n dinner AgeP3 sex_n School
nap_bi_n

```

*Second: bed12bin_n

```

regress logAdiponectin_P3 bed12bin_n dinner AgeP3 sex_n School
nap_bi_n
regress logAdiponectin_P3_75 bed12bin_n dinner AgeP3 sex_n School
nap_bi_n
regress logAdiponectin_Se_P3 bed12bin_n dinner AgeP3 sex_n School

```

```

nap_bi_n
regress logIL6_P3 bed12bin_n dinner AgeP3 i.sex_n School i.nap_bi_n
regress IL6_Se_P3 bed12bin_n dinner AgeP3 sex_n School nap_bi_n
regress logHSCRPUgml bed12bin_n School nap_bi_n AgeP3 sex_n dinner

```

```

*Third: AverageSleepDuration / day
regress logAdiponectin_P3 AverageSleepDuration School nap_bi_n AgeP3
sex_n dinner
regress logAdiponectin_Se_P3 AverageSleepDuration School nap_bi_n
AgeP3 sex_n dinner
regress logIL6_P3 AverageSleepDuration School nap_bi_n AgeP3 sex_n
dinner
regress IL6_Se_P3 AverageSleepDuration School nap_bi_n AgeP3 sex_n
dinner
regress logHSCRPUgml AverageSleepDuration School nap_bi_n AgeP3 sex_n
dinner

```

```

*Fourth: AverageSleepDuration / day_binary
regress logAdiponectin_P3 AverageSleepDuration_bi School nap_bi_n
AgeP3 sex_n dinner
regress logAdiponectin_Se_P3 AverageSleepDuration_bi School nap_bi_n
AgeP3 sex_n dinner
regress logIL6_P3 AverageSleepDuration_bi School nap_bi_n AgeP3 sex_n
dinner
regress IL6_Se_P3 AverageSleepDuration_bi School nap_bi_n AgeP3 sex_n
dinner
regress logHSCRPUgml AverageSleepDuration_bi School nap_bi_n AgeP3
sex_n dinner

```

```

*Fifth: Average Sleep time a week
regress logAdiponectin_P3 Ave_Sleep_time_week School nap_bi_n AgeP3
sex_n dinner
regress logAdiponectin_Se_P3 Ave_Sleep_time_week School nap_bi_n AgeP3
sex_n dinner
regress logIL6_P3 Ave_Sleep_time_week School nap_bi_n AgeP3 sex_n
dinner
regress IL6_Se_P3 Ave_Sleep_time_week School nap_bi_n AgeP3 sex_n
dinner
regress logHSCRPUgml Ave_Sleep_time_week School nap_bi_n AgeP3 sex_n
dinner

```

```

*Sixth: Sleep_time_weekday_n:
regress logAdiponectin_P3 Sleep_time_weekday_n School nap_bi_n AgeP3
sex_n dinner
regress logAdiponectin_Se_P3 Sleep_time_weekday_n School nap_bi_n
AgeP3 sex_n dinner
regress logIL6_P3 Sleep_time_weekday_n School nap_bi_n AgeP3 sex_n
dinner
regress IL6_Se_P3 Sleep_time_weekday_n School nap_bi_n AgeP3 sex_n
dinner

```

```
regress logHSCR Pugml Sleep_time_weekday_n School nap_bi_n AgeP3 sex_n  
dinner
```

```
*****Multivariate linear and logistic regression  
analysis*****
```

```
***First: Salivary adiponectin  
stepwise, pr(.10): regress logAdiponectin_P3 logUCN3_Se_P3  
logAdiponectin_Se_P3 School sex_n AgeP3 medical_history_n meds_n  
mom_diab_n dad_diab_n mom_edu_n mother_ed_n dad_edu_n fath_ed_n  
sleep_weekday_n wakeup_weekday_n Sleep_time_weekday_n sleep_weekend_n  
wakeup_weekend_n Sleep_time_weekend_n interrupted_sleep_n  
interrupted_sleep_bi_n wakeup_night_n wakeupnight_bin_n sleepy_day_n  
sleepy_day_bi_n hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n  
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n  
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n  
sleep_duration7_n sleep_duration8_n WHOcat3_n OBWH03_n electronic_n  
dinner physical_act
```

```
regress logAdiponectin_P3 Sleep_time_weekday_n  
regress logAdiponectin_P3 Sleep_time_weekday_n fath_ed_n mother_ed_n  
medical_history_n OBWH03_n sex_n electronic_n dinner  
regress logAdiponectin_P3 Sleep_time_weekday_n i.fath_ed_n  
i.mother_ed_n i.medical_history_n i.OBWH03_n i.sex_n i.electronic_n  
dinner
```

```
tab Adiponectin_P3_n  
stepwise, pr(0.10): logit Adiponectin_P3_n logUCN3_Se_P3  
logAdiponectin_Se_P3 School sex_n AgeP3 med_hist_n medical_history_n  
meds_n mom_diab_n dad_diab_n mom_edu_n mother_ed_n dad_edu_n fath_ed_n  
sleep_weekday_n wakeup_weekday_n Sleep_time_weekday_n sleep_weekend_n  
wakeup_weekend_n Sleep_time_weekend_n interrupted_sleep_n  
interrupted_sleep_bi_n wakeup_night_n wakeupnight_bin_n sleepy_day_n  
sleepy_day_bi_n hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n  
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n  
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n  
sleep_duration7_n sleep_duration8_n WHOcat3_n OBWH03_n electronic_n  
dinner physical_act
```

```
logit Adiponectin_P3_n Sleep_time_weekday_n, or  
logit Adiponectin_P3_n Sleep_time_weekday_n mother_ed_n mom_diab_n  
medical_history_n OBWH03_n electronic_n dinner physical_act, or  
logit Adiponectin_P3_n Sleep_time_weekday_n i.mother_ed_n i.mom_diab_n  
i.medical_history_n i.OBWH03_n i.electronic_n i.dinner i.physical_act,  
or
```

```
regress logAdiponectin_P3 bed12bin_n
```

```

regress logAdiponectin_P3 bed12bin_n sex_n School medical_history_n
mother_ed_n mom_diab_n OBWH03_n electronic_n dinner physical_act nap_n
regress logAdiponectin_P3 bed12bin_n i.sex_n School
i.medical_history_n i.mother_ed_n i.mom_diab_n i.OBWH03_n
i.electronic_n i.dinner i.physical_act i.nap_n

```

```

tab Adiponectin_P3_n
logit Adiponectin_P3_n bed12bin_n mother_ed_n, or
logit Adiponectin_P3_n bed12bin_n mother_ed_n mom_diab_n
medical_history_n sex_n School OBWH03_n electronic_n dinner
physical_act snore_n osa, or

```

```

regress logAdiponectin_P3 sleep_duration6_n
regress logAdiponectin_P3 sleep_duration6_n mom_diab_n fath_ed_n
mother_ed_n OBWH03_n electronic_n dinner physical_act

```

```

logit Adiponectin_P3_n sleep_duration6_n, or
logit Adiponectin_P3_n sleep_duration6_n mother_ed_n mom_diab_n
electronic_n physical_act dinner snore_n, or

```

*Second: Serum adiponectin

```

stepwise, pr(.10): regress logAdiponectin_Se_P3 logUCN3_Se_P3
logAdiponectin_P3 School sex_n AgeP3 med_hist_n medical_history_n
meds_n mom_diab_n dad_diab_n mom_edu_n mother_ed_n dad_edu_n fath_ed_n
sleep_weekday_n wakeup_weekday_n Sleep_time_weekday_n sleep_weekend_n
wakeup_weekend_n Sleep_time_weekend_n interrupted_sleep_n
interrupted_sleep_bi_n wakeup_night_n wakeupnight_bin_n sleepy_day_n
sleepy_day_bi_n hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n
sleep_duration7_n sleep_duration8_n WH0cat3_n OBWH03_n electronic_n
dinner physical_act

```

```

regress logAdiponectin_Se_P3 Sleep_time_weekday_n
regress logAdiponectin_Se_P3 Sleep_time_weekday_n mother_ed_n sex_n
dinner physical_act snore_n nap_n

```

```

logit Adiponectin_Se_P3_n Sleep_time_weekday_n, or
logit Adiponectin_Se_P3_n Sleep_time_weekday_n sex_n physical_act
dinner School mother_ed_n fath_ed_n dad_diab_n snore_n, or

```

```

regress logAdiponectin_Se_P3 bed12bin_n
regress logAdiponectin_Se_P3 bed12bin_n sex_n AgeP3 mother_ed_n
fath_ed_n physical_act osa

```

```

logit Adiponectin_Se_P3_n bed12bin_n, or
logit Adiponectin_Se_P3_n bed12bin_n sex_n mother_ed_n physical_act,
or

```

```
regress logAdiponectin_Se_P3 sleep_duration6_n
regress logAdiponectin_Se_P3 sleep_duration6_n sex_n mother_ed_n
physical_act dinner snore_n
```

```
logit Adiponectin_Se_P3_n sleep_duration6_n, or
logit Adiponectin_Se_P3_n sleep_duration6_n sex_n mother_ed_n
dad_diab_n physical_act dinner, or
```

```
*Fifth: Serum and salivary adiponectin
regress logAdiponectin_Se_P3 logAdiponectin_P3
regress logAdiponectin_Se_P3 logAdiponectin_P3 sex_n dad_diab_n
physical_act OBWH03_n nap_n
```

*Some significant associations of Adiponectin (serum and saliva), gene UCN3 (serum) with sleep variables:

```
logit Adiponectin_P3_n snore_n
logit Adiponectin_P3_n snore_bi_n
logit Adiponectin_P3_n wakeup_night_n
logit Adiponectin_P3_n sleep_duration6_n
```

```
logit Adiponectin_Se_P3_n wakeup_weekend_n
logit Adiponectin_Se_P3_n interrupted_sleep_n
logit Adiponectin_Se_P3_n interrupted_sleep_n interrupted_sleep_bi_n
logit Adiponectin_Se_P3_n interrupted_sleep_n interrupted_sleep_bi_n
wakeup_night_n
logit Adiponectin_Se_P3_n sleepy_day_n
logit Adiponectin_Se_P3_n sleepy_day_bi_n
logit Adiponectin_Se_P3_n snore_n
logit Adiponectin_Se_P3_n snore_n nap_n
logit Adiponectin_Se_P3_n nap_bi_n
logit Adiponectin_Se_P3_n sleep_apnea_max_n
logit Adiponectin_Se_P3_n bed12bin_n
logit Adiponectin_Se_P3_n sleep_duration6_n
```

```
logit UCN3_Se_P3_n diff_fall_asleep_bi_n
```

*Significant Associations:

```
regress logAdiponectin_P3 Sleep_time_weekday_n i.fath_ed_n
i.mother_ed_n i.medical_history_n i.OBWH03_n i.sex_n i.electronic_n
dinner
logit Adiponectin_P3_n Sleep_time_weekday_n i.mother_ed_n i.mom_diab_n
i.medical_history_n i.OBWH03_n i.electronic_n i.dinner i.physical_act,
or
regress logAdiponectin_P3 bed12bin_n i.sex_n School
i.medical_history_n i.mother_ed_n i.mom_diab_n i.OBWH03_n
i.electronic_n i.dinner i.physical_act i.nap_n
regress logAdiponectin_P3 sleep_duration6_n mom_diab_n fath_ed_n
```

```
mother_ed_n OBWH03_n electronic_n dinner physical_act
logit Adiponectin_P3_n sleep_duration6_n mother_ed_n mom_diab_n
electronic_n physical_act dinner snore_n, or
```

```
logit Adiponectin_Se_P3_n bed12bin_n sex_n mother_ed_n physical_act,
or
logit Adiponectin_Se_P3_n sleep_duration6_n sex_n mother_ed_n
dad_diab_n physical_act dinner, or
```

```
regress logAdiponectin_Se_P3 logAdiponectin_P3 sex_n dad_diab_n
physical_act OBWH03_n nap_n
```

```
*****Analyses not to be used anymore *****
***** Correlation Analysis==> strength of the linear relationship bet
2 variables==> does not imply causation
* and Abeer check for colinearity to avoid it in your regression.
*First: Adiponectin in saliva:
scatter Adiponectin_P3 Sleep_time_weekday
pworth Adiponectin_P3 Sleep_time_weekday, sig obs
*Lowess Smoothing to assess for linearity==> to check if there is any
possible association
lowess Adiponectin_P3 Sleep_time_weekday
lowess Adiponectin_Se_P3 Sleep_time_weekday
*(Above No Association)
lowess UCN3_Se_P3 Sleep_time_weekday
*(Suggests some sort of association with sleep time weekday)
```

```
*****Residual analysis to check for outliers, normality of
distribution, homoscedasticity and nonlinearity
*generate a new variable named `res', that contains the residuals
predict res,residuals
label variable res "Residuals"
* generate a new variable named `Adiponectin_Se_P3_hat', that contains
the predicted means
predict Adiponectin_Se_P3_hat, xb
label variable Adiponectin_Se_P3_hat "predicted (mean) outcome"
* generate diagnostic plots using the residuals
histogram res
graph box res
scatter res Adiponectin_Se_P3_hat
```

```
*Third: UCN3 gene:
tab UCN3_Se_P3
sum UCN3_Se_P3, detail
gen UCN3_Se_P3_bin = 0 if UCN3_Se_P3 <= 2.55
replace UCN3_Se_P3_bin = 1 if UCN3_Se_P3 > 2.55 & UCN3_Se_P3 <= 41.97
tab UCN3_Se_P3_bin
```

```

gen UCN3_Se_P3_n =.
replace UCN3_Se_P3_n = 0 if UCN3_Se_P3_bin == 0
replace UCN3_Se_P3_n = 1 if UCN3_Se_P3_bin == 1
label define UCN3_Se_P3_bin 0 "<=50%" 1 ">50%"
label values UCN3_Se_P3_n UCN3_Se_P3_bin
tab UCN3_Se_P3_n
stepwise, pr(.10): regress logUCN3_Se_P3 logAdiponectin_P3
logAdiponectin_Se_P3 School sex_n AgeP3 med_hist_n medical_history_n
meds_n mom_diab_n dad_diab_n mom_edu_n mother_ed_n dad_edu_n fath_ed_n
sleep_weekday_n wakeup_weekday_n Sleep_time_weekday_n sleep_weekend_n
wakeup_weekend_n Sleep_time_weekend_n interrupted_sleep_n
interrupted_sleep_bi_n wakeup_night_n wakeupnight_bin_n sleepy_day_n
sleepy_day_bi_n hard_wakeup_n hard_wakeup_bi_n diff_fall_asleep_n
diff_fall_asleep_bi_n quality_sleep_n snore_n snore_bi_n nap_n
nap_bi_n sleep_apnea_max_n bed12bin_n bed10_bin_n sleep_duration6_n
sleep_duration7_n sleep_duration8_n WHOcat3_n OBWH03_n

regress logUCN3_Se_P3 Sleep_time_weekday_n
regress logUCN3_Se_P3 Sleep_time_weekday_n sex_n fath_ed_n School
mom_diab_n medical_history_n physical_act OBWH03_n

logit UCN3_Se_P3_n Sleep_time_weekday_n, or
logit UCN3_Se_P3_n Sleep_time_weekday_n mother_ed_n mom_diab_n
physical_act OBWH03_n electronic_n medical_history_n snore_n nap_n, or

regress logUCN3_Se_P3 bed12bin_n
regress logUCN3_Se_P3 bed12bin_n mom_diab_n mother_ed_n
medical_history_n School OBWH03_n dinner

logit UCN3_Se_P3_n bed12bin_n, or
logit UCN3_Se_P3_n bed12bin_n AgeP3 dad_diab_n electronic_n snore_n
nap_n , or

regress logUCN3_Se_P3 sleep_duration6_n

```

```

*Fourth: oral findings: none was statistically significant
poisson NteethP2 Sleep_time_weekday_n, irr
poisson NteethP2 Sleep_time_weekday_n physical_act electronic_n
poisson NteethP2 bed12bin_n
poisson NteethP2 sleep_duration6_n
poisson NteethP2 logAdiponectin_P3
poisson NteethP2 logAdiponectin_Se_P3
poisson NteethP2 logUCN3_Se_P3

regress RedPctP2 Sleep_time_weekday_n
regress RedPctP2 bed12bin_n
regress RedPctP2 sleep_duration6_n
regress RedPctP2 logAdiponectin_P3
regress RedPctP2 logAdiponectin_Se_P3

```

```
regress RedPctP2 logUCN3_Se_P3
```

```
logit HiDecayP2 Sleep_time_weekday_n, or  
logit HiDecayP2 bed12bin_n, or  
logit HiDecayP2 sleep_duration6_n, or  
logit Adiponectin_P3_75 HiDecayP2
```

```
poisson NteethP2 Adiponectin_P3_75  
logit Adiponectin_P3_75 OBWH03_n, or  
logit Adiponectin_P3_75 Sleep_time_weekday_n
```

***** Now we want to build our linear regression model by checking the association of each variable with our outcome variable.

****Think of all possible confounders and Effect modifiers:

*Confounders for Adiponectin

AgeP3, sex_n, medical_history_n, mother_ed_n, fath_ed_n, electronic_n, mom_diab_n, dad_diab_n

*Effect modification:

```
gen intOBEadipo = OBWH03_n * Adiponectin_P3  
gen intSLEPOBE = Sleep_time_weekday_n * OBWH03_n  
gen intSLEP12OBE = bed12bin_n * OBWH03_n
```

* at 12 (midnight) By obesity

```
regress logAdiponectin_P3 bed12bin_n if OBWH03_n == 0  
*regress logAdiponectin_P3 bed12bin_n if OBWH03_n == 1  
regress logAdiponectin_P3 bed12bin_n if ow_ob == 0  
*regress logAdiponectin_P3 bed12bin_n if ow_ob == 1
```

```
logistic Adiponectin_P3_75 bed12bin_n if OBWH03_n == 0  
*logistic Adiponectin_P3_75 bed12bin_n if OBWH03_n == 1  
logistic Adiponectin_P3_75 bed12bin_n if ow_ob == 0  
*logistic Adiponectin_P3_75 bed12bin_n if ow_ob == 1
```

```
*regress logAdiponectin_Se_P3 bed12bin_n if OBWH03_n == 0  
regress logAdiponectin_Se_P3 bed12bin_n if OBWH03_n == 1  
*regress logAdiponectin_Se_P3 bed12bin_n if ow_ob == 0  
regress logAdiponectin_Se_P3 bed12bin_n if ow_ob == 1
```

```
regress logIL6_P3 bed12bin_n if OBWH03_n == 0  
*regress logIL6_P3 bed12bin_n if OBWH03_n == 1  
regress logIL6_P3 bed12bin_n if ow_ob == 0  
regress logIL6_P3 bed12bin_n if ow_ob == 1
```

```
regress IL6_Se_P3 bed12bin_n
```

```

*regress IL6_Se_P3 bed12bin_n if OBWH03_n == 0
*regress IL6_Se_P3 bed12bin_n if OBWH03_n == 1
regress IL6_Se_P3 bed12bin_n if ow_ob == 0
regress IL6_Se_P3 bed12bin_n if ow_ob == 1

*regress logHSCR Pugml bed12bin_n
*regress logHSCR Pugml bed12bin_n if OBWH03_n == 0
*regress logHSCR Pugml bed12bin_n if OBWH03_n == 1
regress logHSCR Pugml bed12bin_n if ow_ob == 0
regress logHSCR Pugml bed12bin_n if ow_ob == 1

```

```

drop permFP1
drop permFP2
drop permDP1
drop PermDP2
drop DFPctP1
drop DFPctP2
drop DPctP1
drop HiDecayP1
drop RedPctP1
drop NteethP1
drop permteethP1
drop decidteethP1

```

```

tab PermteethP2
sum PermteethP2,detail

```

```

hist Adiponectin_P1
graph box Adiponectin_P1
hist Adiponectin_P2
graph box Adiponectin_P2
hist PermteethP2
graph box PermteethP2
*Above is skewed to the left

```

```

*for continuous by categorical variable:
tabstat RedPctP2, s(n mean SD) c(s) by(Adiponectin_P3_n)
tabstat AgeP3, s(n mean SD) c(s) by(Adiponectin_P3_n)

```

```

tab Adiponectin_P2
sum Adiponectin_P2, detail
gen Adiponectin_P2_bin = 0 if Adiponectin_P2 <= 6663.6
replace Adiponectin_P2_bin = 1 if Adiponectin_P2 > 6663.6 &
Adiponectin_P2 <= 48594.43
tab Adiponectin_P2_bin
gen Adiponectin_P2_n =.
replace Adiponectin_P2_n = 0 if Adiponectin_P2_bin == 0
replace Adiponectin_P2_n = 1 if Adiponectin_P2_bin == 1
label define Adiponectin_P2_bin 0 "<=50%" 1 ">50%"

```

```
label values Adiponectin_P2_n Adiponectin_P2_bin  
tab Adiponectin_P2_n
```

```
hist NteethP2  
gen logNteethP2 = log(NteethP2)  
poisson logNteethP2 bed12bin  
poisson logNteethP2 Sleep_time_weekday
```

```
logistic HiDecayP2 bed12bin  
logistic HiDecayP2 Sleep_time_weekday  
logistic HiDecayP2 IL6_P3 sex_n  
logistic HiDecayP2 IL6_Se_P3
```

```
regress HSCRPUgml Abscent_circadian sex_n i.School AgeP3 nap_bi_n  
i.medical_history_n DineOut, robust  
regress IL6_Se_P3 Abscent_circadian sex_n i.School AgeP3 nap_bi_n  
i.medical_history_n DineOut, robust  
regress logIL6_P3 Abscent_circadian sex_n i.School AgeP3 nap_bi_n  
i.medical_history_n DineOut, robust
```

```
*Only Gene:  
sum UCN3_Se_P3, detail
```

```
drop crp_hb1c  
drop hba1c_bi  
drop hba1c_57  
drop ob_crp  
drop ob_crp_bi  
drop nap_hours  
drop nap_hours_  
drop RecordNo  
drop tea  
drop milk  
drop freq_milk  
drop flavored_milk  
drop Breakfat  
drop Family_meal  
drop eAG  
drop IFCCHBA1C  
drop RECALLforfullprofile  
drop HSCRPUgml  
drop fried_bi  
drop daysnack_bi  
drop friedfood  
drop Eat_TV  
drop Eat_Restaurant  
drop Fast_Foods  
drop Snacks  
drop Milk_All
```

```

drop EatHome
drop EatHomeper
drop health_prob
drop Medicine
drop HBA1C
drop SysBP1
drop DiaBP1
drop SysBP2
drop DiaBP2
drop HIBP1
drop HIBP2
drop frozen_yogurt
*****
*****
*** Biomarkers:
tab Adiponectin_P3
sum Adiponectin_P3,detail
gen Adiponectin_P3_bin = 0 if Adiponectin_P3 <= 4993.21
replace Adiponectin_P3_bin = 1 if Adiponectin_P3 > 4993.21 &
Adiponectin_P3 <= 154642.5
tab Adiponectin_P3_bin
gen Adiponectin_P3_n =.
replace Adiponectin_P3_n = 0 if Adiponectin_P3_bin == 0
replace Adiponectin_P3_n = 1 if Adiponectin_P3_bin == 1
label define Adiponectin_P3_bin 0 "<=50%" 1 ">50%"
label values Adiponectin_P3_n Adiponectin_P3_bin
tab Adiponectin_P3_n
sum Adiponectin_P3, detail
gen Adiponectin_P3_75 =.
replace Adiponectin_P3_75 = 0 if Adiponectin_P3 <= 9321.74
replace Adiponectin_P3_75 = 1 if Adiponectin_P3 > 9321.74 &
Adiponectin_P3 <= 154642.5
label define Adiponectin_P3 0 " equal or less than 75%" 1 " more than
75%"
label value Adiponectin_P3_75 Adiponectin_P3
tab Adiponectin_P3_75

tab Adiponectin_Se_P3
sum Adiponectin_Se_P3,detail
gen Adiponectin_Se_P3_bin = 0 if Adiponectin_Se_P3 <= 7708450
replace Adiponectin_Se_P3_bin = 1 if Adiponectin_Se_P3 > 7708450 &
Adiponectin_Se_P3 <= 9.03e+07
tab Adiponectin_Se_P3_bin
gen Adiponectin_Se_P3_n =.
replace Adiponectin_Se_P3_n = 0 if Adiponectin_Se_P3_bin == 0
replace Adiponectin_Se_P3_n = 1 if Adiponectin_Se_P3_bin == 1
label define Adiponectin_Se_P3_bin 0 "<=50%" 1 ">50%"
label values Adiponectin_Se_P3_n Adiponectin_P3_bin
tab Adiponectin_Se_P3_n

```

```

tab IL6_Se_P3
sum IL6_Se_P3, detail
gen IL6_Se_P3_bi = 0 if IL6_Se_P3 <= 1.202366
replace IL6_Se_P3_bi = 1 if IL6_Se_P3 > 1.202366 & IL6_Se_P3 <= 2.92
tab IL6_Se_P3_bi
label define IL6_Se_P3 0 "<=50%mean" 1 ">50%mean"
label values IL6_Se_P3_bi IL6_Se_P3
tab IL6_Se_P3_bi

```

* Generating the log10 for the continuous outcomes==> not normally distributed

```

gen logAdiponectin_P3 = log(Adiponectin_P3)
gen logAdiponectin_P3_n = log(Adiponectin_P3_n)
gen logAdiponectin_Se_P3 = log(Adiponectin_Se_P3)
gen logUCN3_Se_P3 = log(UCN3_Se_P3)
gen logIL8_P3 = log(IL8_P3)
gen logIL8_Se_P3 = log(IL8_Se_P3)
gen logLeptin_P3 = log(Leptin_P3)
gen logLeptin_Se_P3 = log(Leptin_Se_P3)
gen logVEGF_Se_P3 = log(VEGF_Se_P3)
gen logInsulin_P3 = log(Insulin_P3)
gen logInsulin_Se_P3 = log(Insulin_Se_P3)
gen logCRP_P3 = log(CRP_P3)
gen logMCP1_P3 = log(MCP1_P3)
gen logMCP1_Se_P3 = log(MCP1_Se_P3)

```

*By Adiponectin binary variable (by median)

*for 2 categorical variables:

```

tab Adiponectin_P3_n bed12bin_n, chi2 exact
tab Adiponectin_P3_n bed12bin_n, column nofreq chi2
tab Adiponectin_P3_n sex_n, chi2 exact
tab Adiponectin_P3_n sex_n, column nofreq chi2
tab Adiponectin_P3_n medical_history_n, chi2 exact
tab Adiponectin_P3_n medical_history_n, column nofreq chi2
tab Adiponectin_P3_n electronic_n, chi2 exact
tab Adiponectin_P3_n electronic_n, column nofreq chi2
tab Adiponectin_P3_n OBWH03_n, chi2 exact
tab Adiponectin_P3_n OBWH03_n, column nofreq chi2
tab Adiponectin_P3_n physical_act, chi2 exact
tab Adiponectin_P3_n physical_act, column nofreq chi2
tab Adiponectin_P3_n dinner, chi2 exact
tab Adiponectin_P3_n dinner, column nofreq chi2
tab Adiponectin_P3_n nap_n, chi2 exact
tab Adiponectin_P3_n nap_n, column nofreq chi2
tab Adiponectin_P3_n snore_n, chi2 exact
tab Adiponectin_P3_n snore_n, column nofreq chi2

```

*Bivariate for bedtime on Weekdays (BINARY)

```

tab bed12bin_n
tab sex_n bed12bin_n, chi2 exact
tab sex_n bed12bin_n, column nofreq chi2 exact
tab WHOcat3_n bed12bin_n, chi2 exact
tab WHOcat3_n bed12bin_n, column nofreq chi2 exact
tab OBWHO3_n bed12bin_n, chi2 exact
tab OBWHO3_n bed12bin_n, column nofreq chi2 exact
tab nap_bi_n bed12bin_n, chi2 exact
tab nap_bi_n bed12bin_n, column nofreq chi2 exact
tab snore_bi_n bed12bin_n, chi2 exact
tab snore_bi_n bed12bin_n, column nofreq chi2 exact
tab electronic_n bed12bin_n, chi2 exact
tab electronic_n bed12bin_n, column nofreq chi2 exact
tab medical_history_n bed12bin_n, chi2 exact
tab medical_history_n bed12bin_n, column nofreq chi2 exact
tab interrupted_sleep_bi_n bed12bin_n, chi2 exact
tab interrupted_sleep_bi_n bed12bin_n, column nofreq chi2 exact
tab wakeupnight_bin_n bed12bin_n, chi2 exact
tab wakeupnight_bin_n bed12bin_n, column nofreq chi2 exact
tab diff_fall_asleep_bi_n bed12bin_n, chi2 exact
tab diff_fall_asleep_bi_n bed12bin_n, column nofreq chi2 exact
tab sleepy_day_bi_n bed12bin_n, chi2 exact
tab sleepy_day_bi_n bed12bin_n, column nofreq chi2 exact
tab hard_wakeup_bi_n bed12bin_n, chi2 exact
tab hard_wakeup_bi_n bed12bin_n, column nofreq chi2 exact
tab Abscent_circadian bed12bin_n, chi2 exact
tab Abscent_circadian bed12bin_n, column nofreq chi2 exact
tab sleepdeptcat bed12bin_n, chi2 exact
tab sleepdept bed12bin_n, column nofreq chi2 exact
tab social_getlag bed12bin_n, chi2 exact
tab social_getlag bed12bin_n, column nofreq chi2 exact

```

*Bivariate for bedtime on Weekdays (CATEGORICAL)

```

tab bedtimeWDcat
tab sex_n bedtimeWDcat, column freq chi2 exact
tab WHOcat3_n bedtimeWDcat, column freq chi2 exact
tab OBWHO3_n bedtimeWDcat, column freq chi2 exact
tab nap_bi_n bedtimeWDcat, column freq chi2 exact
tab snore_bi_n bedtimeWDcat, column freq chi2 exact
tab interrupted_sleep_bi_n bedtimeWDcat, column freq chi2 exact
tab hard_wakeup_bi_n bedtimeWDcat, column freq chi2 exact
tab diff_fall_asleep_bi_n bedtimeWDcat, column freq chi2 exact
tab sleepy_day_bi_n bedtimeWDcat, column freq chi2 exact
tab wakeupnight_bin_n bedtimeWDcat, column freq chi2 exact
tab electronic_n bedtimeWDcat, column freq chi2 exact
tab medical_history_n bedtimeWDcat, column freq chi2 exact
tab sleepdeptcat bedtimeWDcat, column freq chi2 exact
tab sleepdeptsevere bedtimeWDcat, column freq chi2 exact
tab socialgetlag_bi bedtimeWDcat, column freq chi2 exact
tab Abscent_circadian bedtimeWDcat, column freq chi2 exact

```

```

tab physical_act bedtimeWDCat, column freq chi2 exact
tab coffee_n bedtimeWDCat, column freq chi2 exact
tab dinner bedtimeWDCat, column freq chi2 exact
tab lunch bedtimeWDCat, column freq chi2 exact
tab friedfood_restaurant bedtimeWDCat, column freq chi2 exact

```

```

*for continuous by categorical variable:(WEKDAY)
tabstat AgeP3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat BMI3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Waist_cm3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Adiponectin_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Adiponectin_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Leptin_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Leptin_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Insulin_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Insulin_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat IL6_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat IL6_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat IL8_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat IL8_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat IL10_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat IL10_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat VEGF_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat VEGF_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat MCP1_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat MCP1_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat CRP_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat CRP_Se_P3, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat HSCRPUgml, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat DineOut, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat EatHome, s(n mean SD) c(s) by(bedtimeWDCat)

```

```

tabstat AverageSleepDuration, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Sleep_time_weekday_n, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat Sleep_time_weekend_n, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat bedtime_both2, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat bed_hour, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat bed_weekend, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat sleepdept, s(n mean SD) c(s) by(bedtimeWDCat)
tabstat social_getlag, s(n mean SD) c(s) by(bedtimeWDCat)

```

```

*Bivariate for bedtime on Average weekdays and weekends (BINARY)
tab bed12
tab sex_n bed12, column freq chi2 exact
tab WHOcat3_n bed12, column freq chi2 exact
tab OBWHO3_n bed12, column freq chi2 exact
tab nap_bi_n bed12, column freq chi2 exact
tab snore_bi_n bed12, column freq chi2 exact

```

```

tab electronic_n bed12, column freq chi2 exact
tab medical_history_n bed12, column freq chi2 exact
tab interrupted_sleep_bi_n bed12, column freq chi2 exact
tab wakeupnight_bin_n bed12, column freq chi2 exact
tab diff_fall_asleep_bi_n bed12, column freq chi2 exact
tab sleepy_day_bi_n bed12, column freq chi2 exact
tab hard_wakeup_bi_n bed12, column freq chi2 exact
tab Abscent_circadian bed12, column freq chi2 exact
tab sleepdeptcat bed12, column freq chi2 exact
tab sleepdeptsevere bed12, column freq chi2 exact
tab socialgetlag_bi bed12, column freq chi2 exact
tab physical_act bed12, column freq chi2 exact
tab coffee_n bed12, column freq chi2 exact
tab dinner bed12, column freq chi2 exact
tab lunch bed12, column freq chi2 exact
tab friedfood_restaurant bed12, column freq chi2 exact

```

*for continuous by binary bedtime variable:(Average weekdays and
wekends)

```

tabstat AgeP3, s(n mean SD) c(s) by(bed12)

```

*Pearson correlation

```

pworth CRP_P3 HSCRPUgml, sig star(.05) obs
pworth IL6_P3 IL6_Se_P3, sig star(.05) obs
pworth IL8_P3 IL8_Se_P3, sig star(.05) obs
pworth IL10_P3 IL10_Se_P3, sig star(.05) obs
pworth VEGF_P3 VEGF_Se_P3, sig star(.05) obs
pworth MCP1_P3 MCP1_Se_P3, sig star(.05) obs
pworth Adiponectin_P3 Adiponectin_Se_P3, sig star(.05) obs
pworth Leptin_P3 Leptin_Se_P3, sig star(.05) obs
pworth Insulin_P3 Insulin_Se_P3, sig star(.05) obs

```

```

xtmixed HSCRPUgml AverageSleepDuration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml Sleep_time_weekday_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml Sleep_time_weekend_n sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

```

```

xtmixed HSCRPUgml bedtime_both2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed HSCRPUgml bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:

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xtmixed HSCRPUgml i.bedtimecat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig

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xtmixed HSCRPUgml i.bedtimeWDcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
*sig
xtmixed HSCRPUgml i.bedtimeWEcat2 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

xtmixed HSCRPUgml i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml i.sleepdeptcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames BMI3 DineOut, || School:

xtmixed HSCRPUgml i.sleepdeptsevere sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml i.socialgetlag_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:


xtmixed HSCRPUgml bed12new sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed HSCRPUgml bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*sig
xtmixed HSCRPUgml bed12 sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*Significant
xtmixed HSCRPUgml bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
*significant
xtmixed HSCRPUgml bed12_weekend_bi sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:


xtmixed HSCRPUgml i.bedtime123 sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml i.bedtimeWDcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml i.bedtimeWEcat sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:


xtmixed HSCRPUgml sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:
xtmixed HSCRPUgml sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n
vediogames DineOut, || School:


xtmixed HSCRPUgml social_getlag sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:
xtmixed HSCRPUgml i.timeandduration sex_n AgeP3 nap_bi_n
i.medical_history_n vediogames DineOut, || School:

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xtmixed IL10_P3 AverageSleepDuration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 Sleep_time_weekday_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 Sleep_time_weekend_n sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL10_P3 bedtime_both2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 bed_hour sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 bed_weekend sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

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xtmixed IL10_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 i.bedtimeWDCat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 i.bedtimeWECat2 sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL10_P3 i.bedtimecat2 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames BMI3 DineOut, || School:
```

```
xtmixed IL10_P3 i.sleepdeptcat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 i.sleepdeptsevere sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 i.socialgetlag_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL10_P3 bed12new sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 bedtimecat sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed IL10_P3 bed12 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 bed12bin_n sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 bed12_weekend_bi sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL10_P3 i.bedtime123 sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:  
xtmixed IL10_P3 i.bedtimeWDCat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 i.bedtimeWECat sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:
```

```
xtmixed IL10_P3 social_getlag sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```

```
xtmixed IL10_P3 i.timeandduration sex_n AgeP3 nap_bi_n  
i.medical_history_n vediogames DineOut, || School:  
xtmixed IL10_P3 sleepdept sex_n AgeP3 nap_bi_n i.medical_history_n  
vediogames DineOut, || School:
```