## PURPOSE: Diagnosis dyslipidemia (TC, LDL-C, HDL-C, and TG) for Chinese children aged 6-17 years

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test<-read.csv('/Volumes/xiaopei/temp/test.csv')

# Here input the location of your csv database which you want to be diagnosed in the yellow area

# Make sure your csv file contains the following variables:

# id, sex, age, tc, ldl, hdl, tg

# And among them :

# sex with numeric values: 1 for boy; 2 for girl;

# age with numeric values between 6 and 17, and decimal is OK;

# tc, ldl, hdl, and tg are numeric variables, the Unit is mmol/L.

agei<- c(6, 7, 8, 9, 10 ,11, 12, 13, 14, 15, 16, 17, 18);

tc\_m\_b <- c(5.85, 5.78, 5.72, 5.7, 5.66 ,5.57, 5.44, 5.32, 5.24, 5.22, 5.23, 5.23, 5.2);

tc\_f\_b <- c(5.59, 5.55, 5.49, 5.42, 5.34 ,5.26, 5.19, 5.15, 5.17, 5.22, 5.26, 5.25, 5.2);

tc\_m\_h <- c(6.98, 6.89, 6.82, 6.79, 6.75 ,6.64, 6.49, 6.34, 6.25, 6.23, 6.24, 6.24, 6.2);

tc\_f\_h <- c(6.67, 6.62, 6.56, 6.47, 6.37 ,6.27, 6.19, 6.15, 6.17, 6.23, 6.28, 6.26, 6.2);

ldl\_m\_b <- c(3.62, 3.56, 3.53, 3.52, 3.5 ,3.46, 3.39, 3.34, 3.32, 3.33, 3.37, 3.4, 3.4);

ldl\_f\_b <- c(3.71, 3.67, 3.61, 3.53, 3.46 ,3.4, 3.35, 3.35, 3.39, 3.45, 3.49, 3.47, 3.4);

ldl\_m\_h <- c(4.37, 4.3, 4.25, 4.24, 4.22 ,4.17, 4.09, 4.03, 4, 4.02, 4.07, 4.11, 4.1);

ldl\_f\_h <- c(4.47, 4.41, 4.34, 4.25, 4.17 ,4.09, 4.03, 4.03, 4.08, 4.16, 4.2, 4.17, 4.1);

hdl\_m\_l <- c(1.15, 1.15, 1.15, 1.15, 1.13 ,1.11, 1.09, 1.07, 1.06, 1.05, 1.04, 1.02, 1);

hdl\_f\_l <- c(1.02, 1.01, 1.01, 1, 0.99 ,0.98, 0.97, 0.98, 0.99, 1, 1.01, 1.01, 1);

tg\_m\_b <- c(1.44, 1.4, 1.4, 1.44, 1.5 ,1.54, 1.56, 1.57, 1.59, 1.61, 1.63, 1.67, 1.7);

tg\_f\_b <- c(1.97, 1.92, 1.9, 1.91, 1.95 ,1.98, 1.97, 1.94, 1.88, 1.81, 1.75, 1.72, 1.7);

tg\_m\_h <- c(1.96, 1.9, 1.89, 1.95, 2.02 ,2.08, 2.11, 2.13, 2.15, 2.18, 2.21, 2.26, 2.3);

tg\_f\_h <- c(2.94, 2.83, 2.78, 2.77, 2.8 ,2.82, 2.79, 2.72, 2.62, 2.51, 2.41, 2.34, 2.3);

test$dys\_tc<-NA

test$dys\_tc[!is.na(test$tc) & test$age <18]<-'Normal'

test$dys\_tg<-NA

test$dys\_tg[!is.na(test$tg) & test$age <18]<-'Normal'

test$dys\_ldl<-NA

test$dys\_ldl[!is.na(test$ldl) & test$age <18]<-'Normal'

test$dys\_hdl<-NA

test$dys\_hdl[!is.na(test$hdl) & test$age <18]<-'Normal'

for (i in 1:12) {

 test$dys\_tc[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$tc >= tc\_m\_b[i])

 | (test$sex==2 & test$tc >= tc\_f\_b[i]))]<-'Borderline-high'

 test$dys\_tc[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$tc >= tc\_m\_h[i])

 | (test$sex==2 & test$tc >= tc\_f\_h[i]))]<-'High'

 test$dys\_tg[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$tg >= tg\_m\_b[i])

 | (test$sex==2 & test$tg >= tg\_f\_b[i]))]<-'Borderline-high'

 test$dys\_tg[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$tg >= tg\_m\_h[i])

 | (test$sex==2 & test$tg >= tg\_f\_h[i]))]<-'High'

 test$dys\_ldl[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$ldl >= ldl\_m\_b[i])

 | (test$sex==2 & test$ldl >= ldl\_f\_b[i]))]<-'Borderline-high'

 test$dys\_ldl[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$ldl >= ldl\_m\_h[i])

 | (test$sex==2 & test$ldl >= ldl\_f\_h[i]))]<-'High'

 test$dys\_hdl[test$age >= agei[i] & test$age < agei[i+1] & ((test$sex==1 & test$hdl <= hdl\_m\_l[i])

 | (test$sex==2 & test$hdl <= hdl\_f\_l[i]))]<-'Low'

 }

write.csv(test,file = '/Volumes/xiaopei/temp/out.csv')

#Here input the location of the result csv database in the yellow area