Fig. 1

Analyses for 3 traits (HDL, LDL, Triglycerides) × 2 exposures (current/non-smoker, ever-/never-smoker)
Stage 1
Models
Main Effect Model (ME): $Y = \beta_0 + \beta_C C + \beta_G SNP$ (In all and stratified by smoking status)
Adjusted Model (ADJ): $Y = \beta_0 + \beta_C C + \beta_E E + \beta_G SNP$
Interaction Model (1df, Joint 2df): $Y = \beta_0 + \beta_C C + \beta_E E + \beta_G SNP + \beta_{GE} E \times SNP$
Samples
EUR n=90,266
AFR n=23,748
ASN n=13,171
HISP n=6,620
TRANS n=133,805
17,921[1] variants $p \leq 10^{-6}$
Stage 2
Model
Interaction Model (1df, Joint 2df): $Y = \beta_0 + \beta_C C + \beta_E E + \beta_G SNP + \beta_{GE} E \times SNP$
Samples
EUR n=147,211
AFR n=7,217
ASN n=81,517
HISP n=13,870
BR n=3,652
TRANS n=253,467
Stage 1 + 2
Model
Interaction Model (1df, Joint 2df): $Y = \beta_0 + \beta_C C + \beta_E E + \beta_G SNP + \beta_{GE} E \times SNP$
Samples
EUR n=237,477
AFR n=30,965
ASN n=94,688
HISP n=20,490
TRANS[2] N=387,272
13 novel loci $p < 5 \times 10^{-8}$

Fig. 2

Interaction of rs12740061 and Current Smoking (1df)

Among AFR	N	MAF	P-value
ARIC	2,726	0.04	0.00017
CARDIA	906	0.05	0.21
GeneSTAR	1,107	0.05	0.028
HANDLS	902	0.04	0.0064
IPM	1,558	0.05	0.13
MESA	1,651	0.05	0.12
WHI	7,756	0.06	0.0095
AFR St 1 & 2	**16,606**	**0.05**	**7.4E-9**
Other Ancestries			
EUR St 1 & 2	**210,312**	**0.24**	**0.71**
ASN St 1 & 2	**15,504**	**0.11**	**0.84**
HISP St 1 & 2	**20,310**	**0.17**	**0.58**

Fig. 3

a
b
c
d
$-\log_{10}P-$value
0
2
4
6
8
10
Main Effect
Smk-Adjusted
Never-Smokers
Ever-Smokers
Interaction (1df)
Joint (2df)
Main Effect
Smk-Adjusted
Non-Smokers
Current Smokers
Interaction (1df)
Joint (2df)
Main Effect
Smk-Adjusted
Never-Smokers
Ever-Smokers
Interaction (1df)
Joint (2df)
Main Effect
Smk-Adjusted
Never-Smokers
Ever-Smokers
Interaction (1df)
Joint (2df)

Fig. 4

a

Meta-Analysis
N
MAF
P-value
β SNP
Non-Smokers 17,799 0.095 0.01
Smokers 4,855 0.093 2.2E-7
All 22,645 0.095 0.75
All (Smk-Adj) 22,645 0.095 0.75
-10 -8 -6 -4 -2 0 2 4
LDL, mg/dl

b

Meta-Analysis
N
MAF
P-value
β SNP
β Interaction
AFR St 1 & 2 24,901 0.05 0.14
ASN St 1 & 2 112,768 0.12 0.06
EUR St 1 & 2 161,262 0.07 4.9E-07
HISP St 1 & 2 18,878 0.05 0.26
TRANS St 1 & 2 317,809 0.08 4.1E-08
-0.1 -0.05 0 0.025 0.075
lnTriglycerides