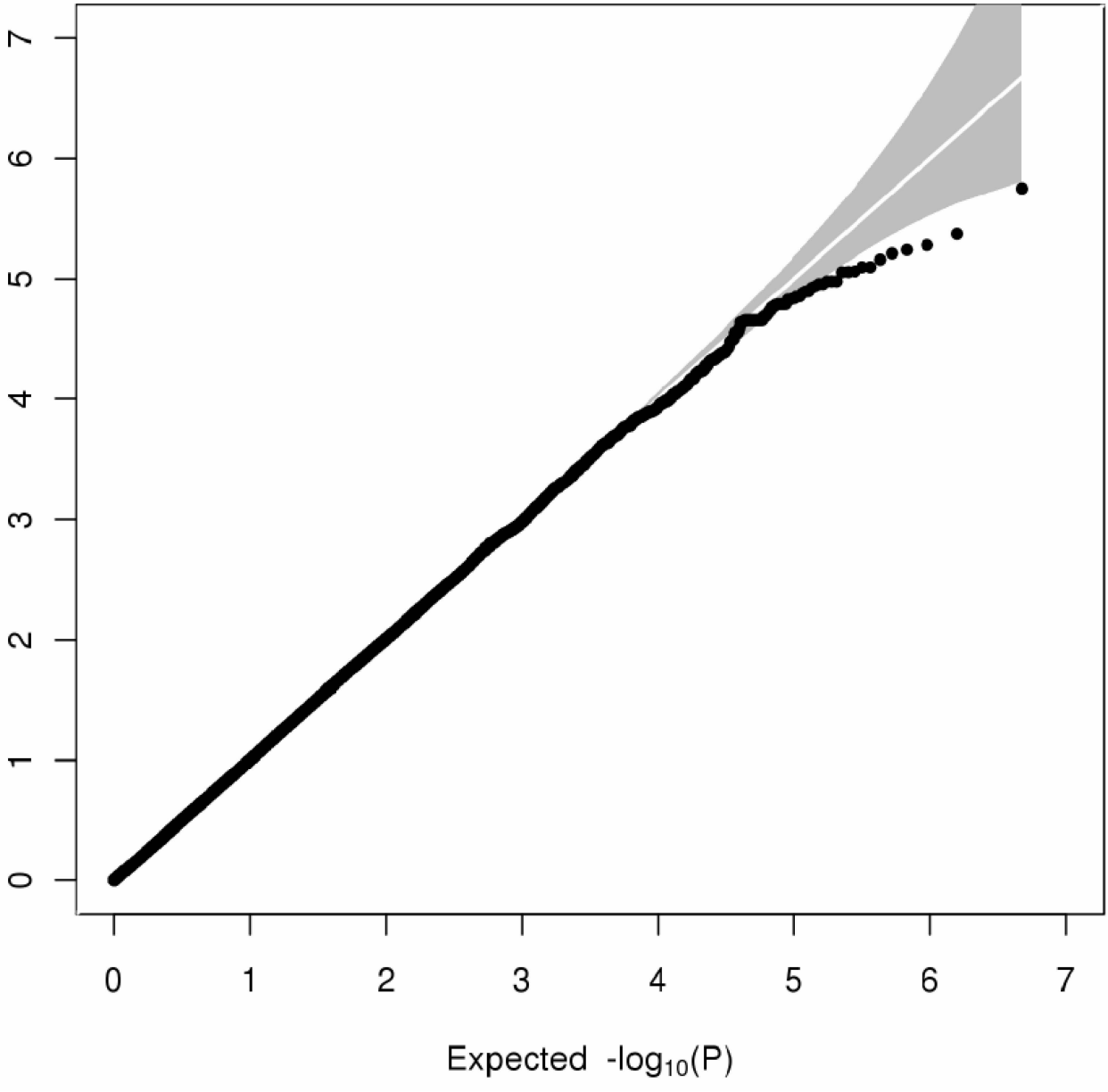
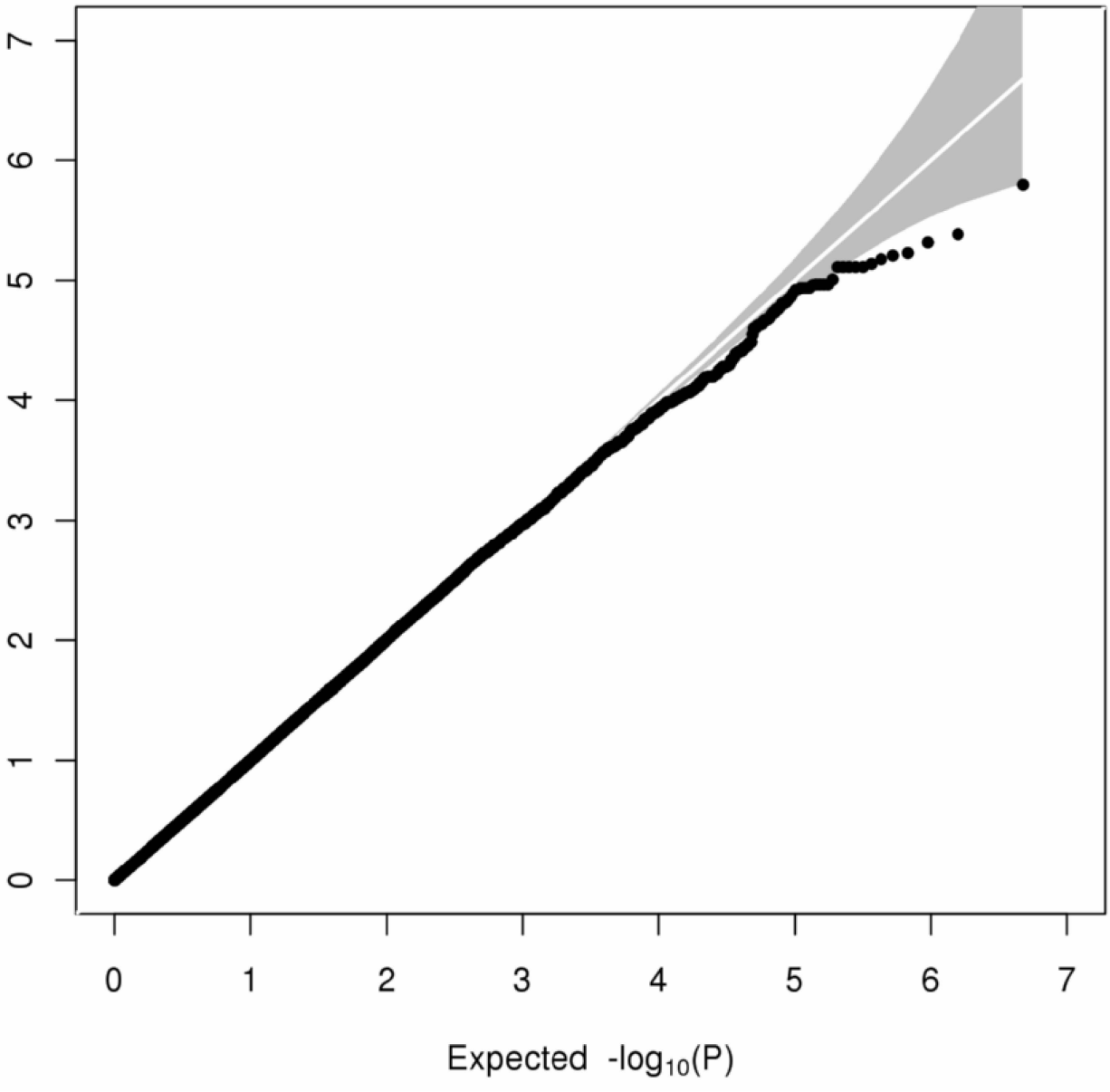

0
1
2
3
4
5
6
7
Expected -log10(P)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1
2
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4
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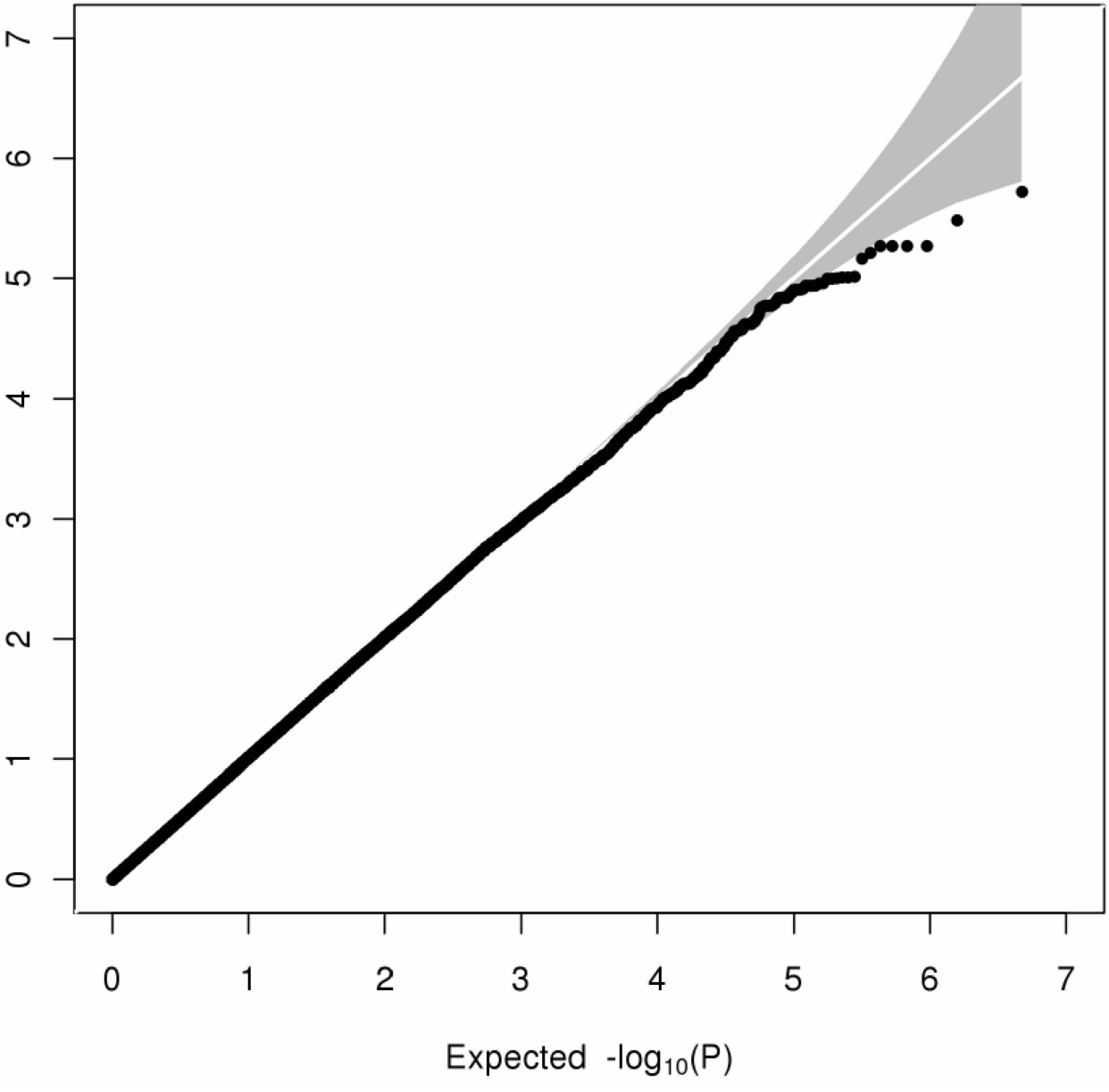
7
Expected -log10(P)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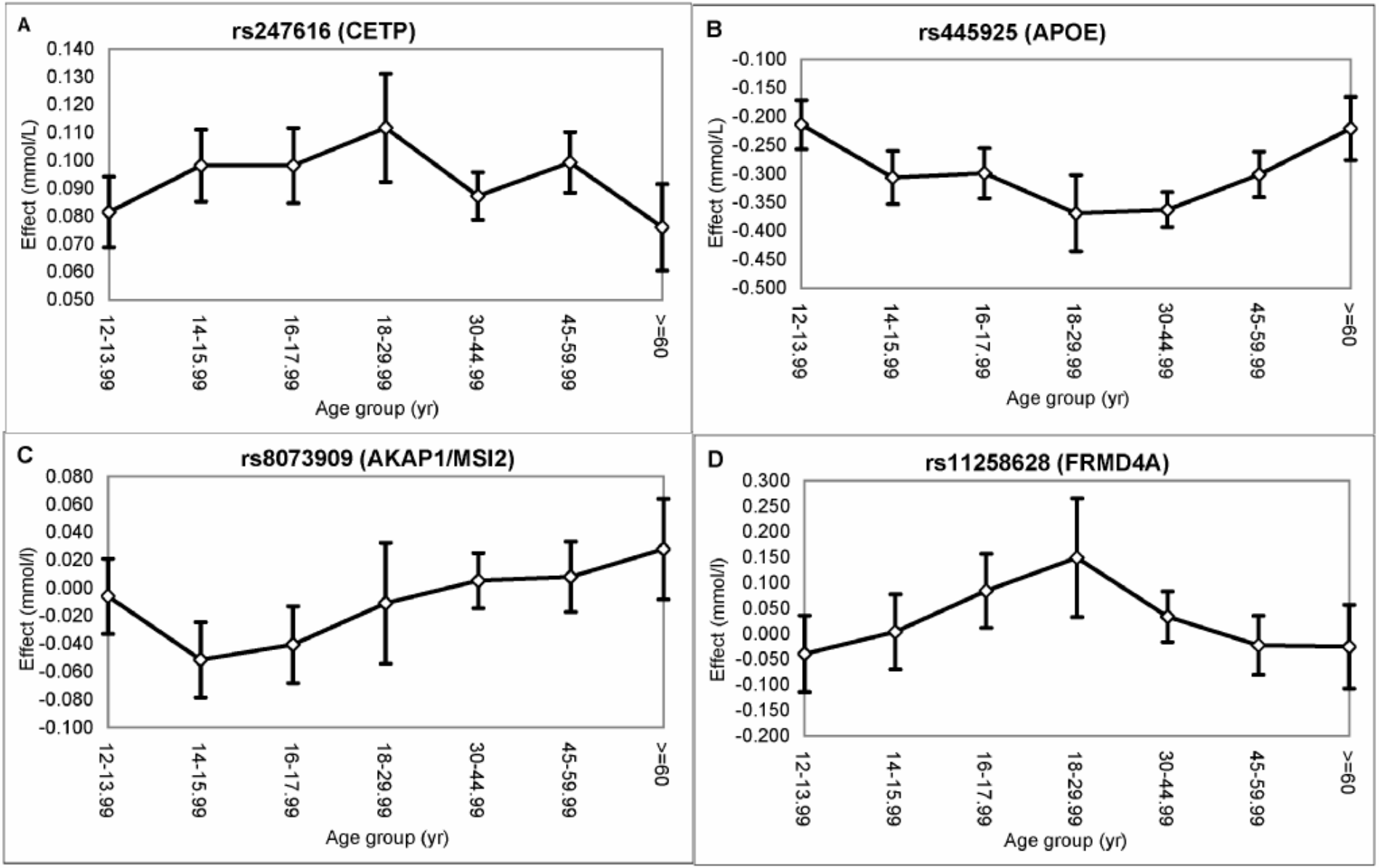
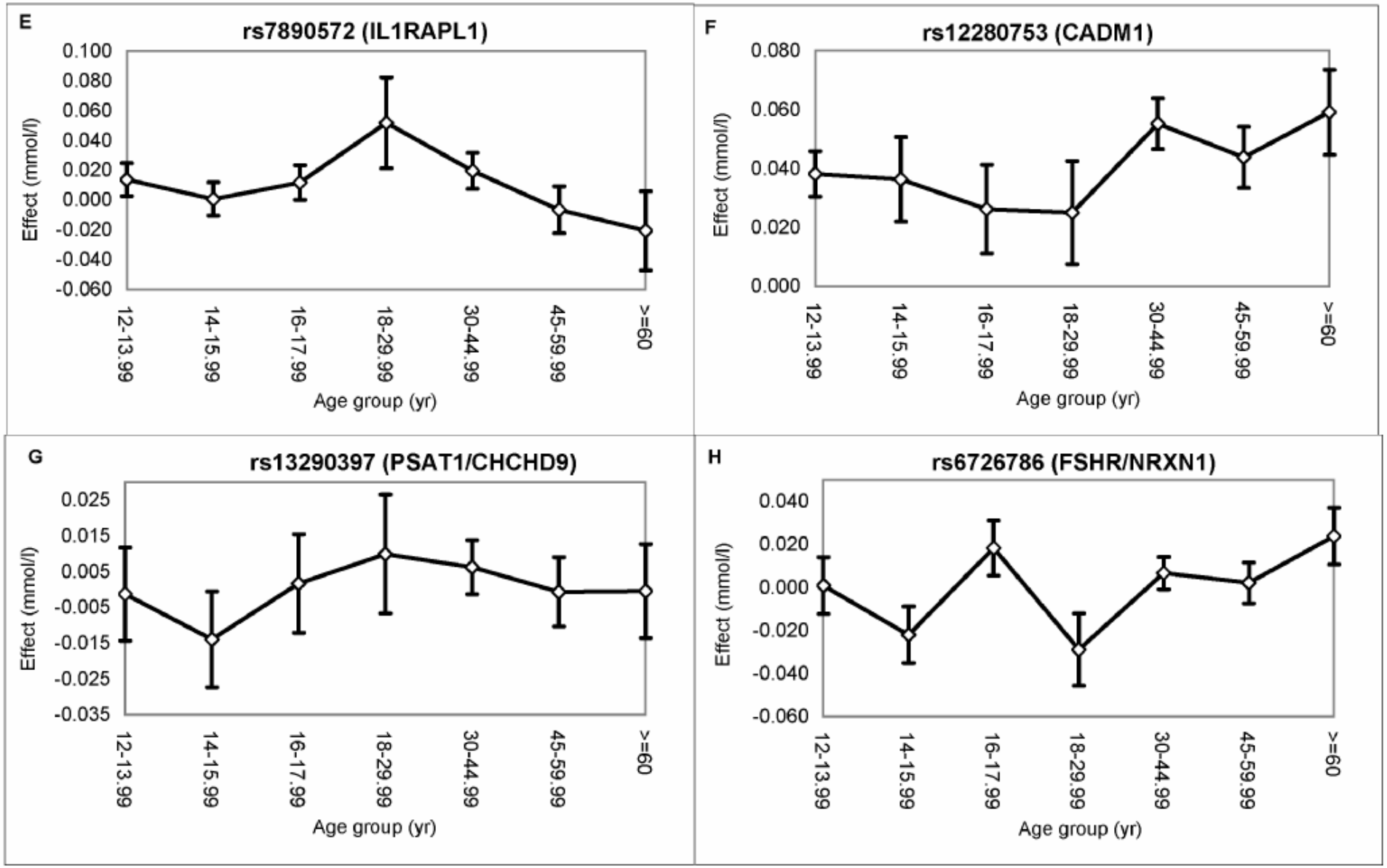
1
2
3
4
5
6
7
Expected -log10(P)


A
rs247616 (CETP)
Effect (mmol/L)
0.140
0.130
0.120
0.110
0.100
0.090
0.080
0.070
0.060
0.050
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)
B
rs445925 (APOE)
Effect (mmol/L)
-0.100
-0.150
-0.200
-0.250
-0.300
-0.350
-0.400
-0.450
-0.500
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)
C
rs8073909 (AKAP1/MSI2)
Effect (mmol/l)
0.080
0.060
0.040
0.020
0.000
-0.020
-0.040
-0.060
-0.080
-0.100
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)
D
rs11258628 (FRMD4A)
Effect (mmol/l)
0.300
0.250
0.200
0.150
0.100
0.050
0.000
-0.050
-0.100
-0.150
-0.200
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)


E
rs7890572 (IL1RAPL1)
Effect (mmol/l)
0.100
0.080
0.060
0.040
0.020
0.000
-0.020
-0.040
-0.060
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)
F
rs12280753 (CADM1)
Effect (mmol/l)
0.080
0.060
0.040
0.020
0.000
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)
G
rs13290397 (PSAT1/CHCHD9)
Effect (mmol/l)
0.025
0.015
0.005
-0.005
-0.015
-0.025
-0.035
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)
H
rs6726786 (FSHR/NRXN1)
Effect (mmol/l)
0.040
0.020
0.000
-0.020
-0.040
-0.060
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)

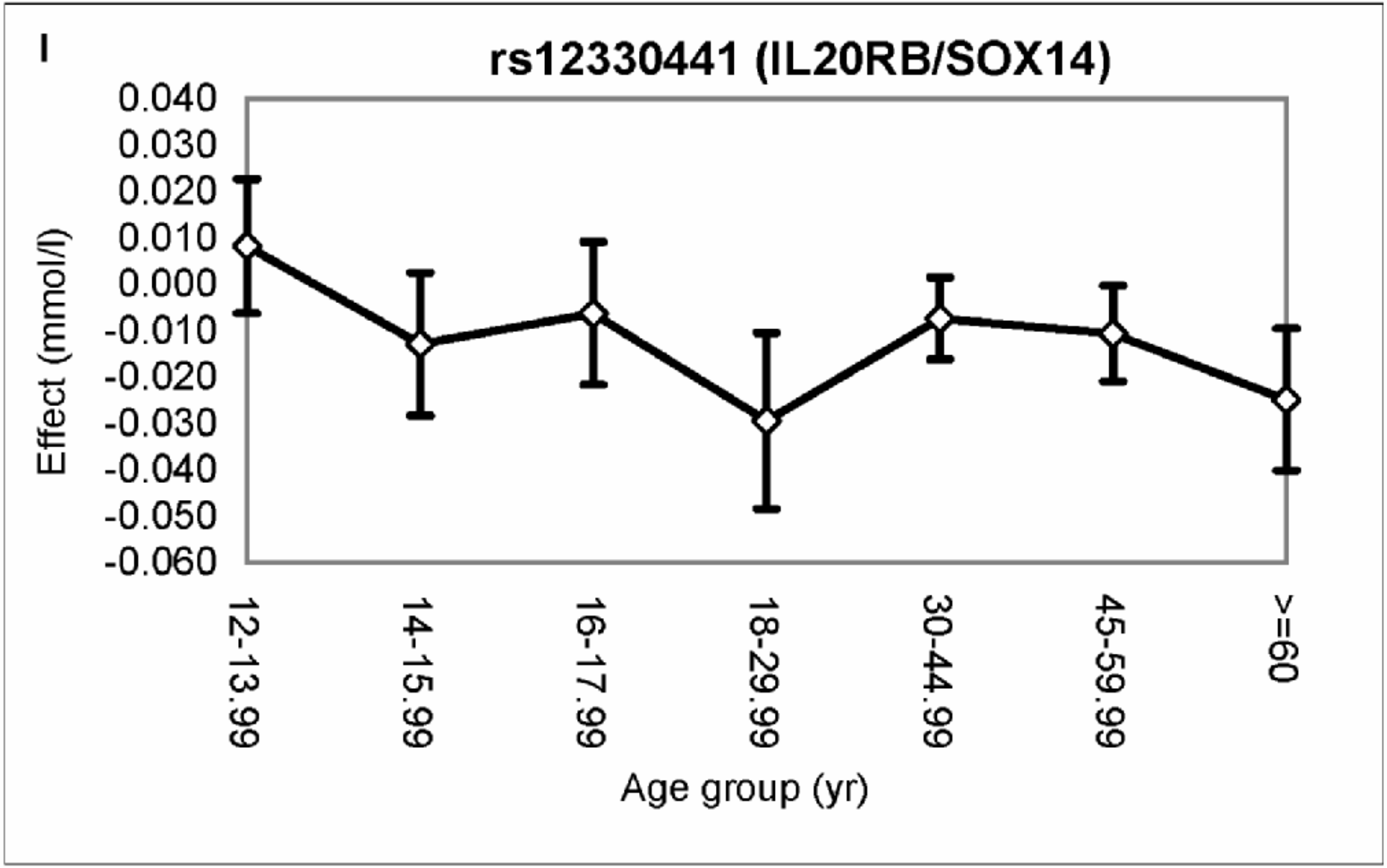

I
rs12330441 (IL20RB/SOX14)
Effect (mmol/l)
0.040
0.030
0.020
0.010
0.000
-0.010
-0.020
-0.030
-0.040
-0.050
-0.060
12-13.99
14-15.99
16-17.99
18-29.99
30-44.99
45-59.99
>=60
Age group (yr)

Table S1. Association of loci significant with at least one lipid traits in adolescents (n=2,336), comparing results from the Global lipids Consortium (Teslovich et al) for adults.

Global Lipids Consortium Results								**Our results (adolescents)**								
								HDL-C			**LDL-C**			**Triglycerides**		
Locus	**Chr**	**SNP**	**Ref Allele**	**Lead trait**	**Betaξ**	**P-Value**	**Other traits**	**Beta**	**SE**	**P-value**	**Beta**	**SE**	**P-value**	**Beta**	**SE**	**P-value**
ANGPTL3	1	rs2131925	T	TG	0.056	$9x10^{-43}$	LDL	0.012	0.010	0.220	0.042	0.022	0.060	0.013	0.006	**0.033**
LDLRAP1	1	rs12027135	T	TC	0.031	$4x10^{-11}$	LDL	0.007	0.009	0.490	0.064	0.021	**0.002**	0.004	0.006	0.470
SORT1	1	rs629301	T	LDL	0.141	$1x10^{-170}$	TC	-0.032	0.011	**0.004**	0.131	0.024	**$1.10x\ 10^{-07}$**	0.007	0.007	0.350
ABCG5/8	2	rs4299376	T	LDL	−0.069	$2x10^{-47}$	TC	0.025	0.010	**0.015**	-0.046	0.023	**0.045**	-0.006	0.006	0.370
APOB	2	rs1042034	T	TG	0.068	$1x10^{-45}$	HDL	-0.018	0.012	0.137	0.056	0.026	**0.033**	0.011	0.008	0.130
APOB	2	rs1367117	G	LDL	−0.101	$4x10^{-114}$	TC	-0.006	0.010	0.540	-0.067	0.023	**0.003**	0.005	0.006	0.430
GCKR	2	rs1260326	C	TG	-0.099	$6x10^{-133}$	TC	-0.004	0.009	0.700	-0.032	0.021	0.140	-0.020	0.006	**0.0009**
KLHL8	4	rs442177	T	TG	0.025	$9x10^{-12}$		-0.004	0.009	0.670	-0.017	0.021	0.420	0.012	0.006	**0.042**
SLC39A8	4	rs13107325	C	HDL	0.021	$7x10^{-11}$		0.038	0.017	**0.024**	-0.057	0.037	0.130	-0.011	0.011	0.310
ARL15	5	rs6450176	G	HDL	0.012	$5x10^{-08}$		0.016	0.011	0.134	-0.056	0.024	**0.022**	-0.016	0.007	0.018
MAP3K1	5	rs9686661	C	TG	-0.029	$1x10-^{10}$		-0.001	0.011	0.920	-0.063	0.026	**0.015**	-0.012	0.007	0.094
TIMD4	5	rs6882076	C	TC	0.050	$7x10^{-28}$	LDL, TG	-0.005	0.010	0.580	0.050	0.022	**0.025**	0.016	0.006	**0.009**
C6orf106	6	rs2814982	C	TC	0.047	$5x10^{-11}$		0.017	0.016	0.290	0.012	0.036	0.740	-0.027	0.010	**0.008**
LPA	6	rs1084651	G	HDL	-0.049	$3x10^{-08}$		0.027	0.013	**0.034**	0.051	0.028	0.071	0.001	0.008	0.920
MYLIP	6	rs3757354	C	LDL	0.036	$1x10^{-11}$	TC	-0.005	0.012	0.690	0.053	0.026	**0.041**	0.015	0.007	**0.036**
MLXIPL	7	rs17145738	C	TG	0.105	$6x10^{-58}$	HDL	-0.028	0.015	0.058	0.029	0.033	0.390	0.027	0.009	**0.004**
TYW1B	7	rs13238203	C	TG	0.089	$1x10^{-09}$		-0.020	0.029	0.490	0.084	0.064	0.190	0.040	0.018	**0.027**
CYP7A1	8	rs2081687	C	TC	-0.031	$2x10^{-12}$	LDL	0.012	0.010	0.220	-0.055	0.023	**0.012**	-0.011	0.006	0.074
LPL	8	rs12678919	A	TG	0.154	$2x10^{-115}$	HDL	-0.045	0.015	**0.003**	0.006	0.034	0.860	0.025	0.010	**0.009**
NAT2	8	rs1495741	A	TG	-0.032	$5x10^{-14}$	TC	0.015	0.011	0.200	-0.034	0.025	0.180	-0.008	0.007	0.290
TRIB1	8	rs2954029	A	TG	0.064	$3x10^{-55}$	LDL,HDL	-0.013	0.009	0.170	-0.015	0.021	0.460	0.014	0.006	**0.017**

Global Lipids Consortium Results								Our results (adolescents)								
								HDL-C			LDL-C			Triglycerides		
Locus	**Chr**	**SNP**	**Ref Allele**	**Lead trait**	**Beta**ξ	**P-Value**	**Other traits**	**Beta**	**SE**	**P-value**	**Beta**	**SE**	**P-value**	**Beta**	**SE**	**P-value**
GPAM	10	rs2255141	G	TC	-0.029	$2x10^{-10}$	LDL	-0.025	0.010	**0.017**	0.029	0.023	0.210	-0.003	0.007	0.710
APOA1	11	rs964184	C	TG	-0.192	$7x10^{-240}$	HDL, LDL	0.023	0.014	0.112	-0.023	0.032	0.490	-0.044	0.009	**1.20×10^{-06}**
FADS1-2-3	11	rs174546	C	TG	-0.043	$5x10^{-24}$	HDL, LDL	0.006	0.010	0.540	0.080	0.023	**0.00045**	-0.005	0.006	0.460
HNF1A	12	rs1169288	A	TC	-0.036	$1x10^{-14}$	LDL	0.020	0.010	0.046	-0.028	0.022	0.210	-0.016	0.006	0.012
LRP1	12	rs11613352	C	TG	0.031	$4x10^{-10}$	HDL	-0.014	0.011	0.190	0.034	0.024	0.160	0.014	0.007	**0.039**
MVK	12	rs7134594	T	HDL	0.011	$7x10^{-15}$		0.024	0.009	**0.008**	0.017	0.021	0.400	0.003	0.006	0.660
SBNO1	12	rs4759375	C	HDL	-0.022	$7x10^{-09}$		-0.013	0.020	0.500	-0.025	0.044	0.570	-0.025	0.012	**0.046**
FRMD5	15	rs2929282	A	TG	-0.058	$2x10^{-11}$		0.067	0.023	**0.004**	0.009	0.052	0.870	-0.032	0.015	**0.033**
LIPC	15	rs1532085	G	HDL	-0.036	$3x10^{-96}$	TC, TG	-0.032	0.009	**0.001**	-0.048	0.021	**0.027**	-0.008	0.006	0.210
CETP	16	rs3764261	C	HDL	-0.085	$7x10^{-380}$	LDL, TG	-0.095	0.010	**9.80×10^{-22}**	0.006	0.022	0.800	0.008	0.006	0.170
CMIP	16	rs2925979	C	HDL	0.011	$2x10^{-11}$		-0.007	0.011	0.530	0.051	0.024	**0.032**	0.004	0.007	0.530
LIPG	18	rs7241918	T	HDL	0.033	$3x10^{-49}$	TC	0.043	0.012	**0.00029**	0.015	0.027	0.590	0.005	0.008	0.510
MC4R	18	rs12967135	G	HDL	0.011	$7x10^{-09}$		0.039	0.011	**0.001**	-0.001	0.025	0.960	-0.003	0.007	0.660
ANGPTL4	19	rs7255436	A	HDL	0.011	$3x10^{-08}$		0.024	0.009	**0.013**	0.024	0.021	0.240	0.005	0.006	0.400
APOE	19	rs4420638	A	LDL	-0.179	$9x10^{-147}$	TC, HDL	0.027	0.014	**0.048**	-0.141	0.031	**4.30×10^{-06}**	-0.017	0.009	**0.045**
APOE	19	rs439401	C	TG	0.062	$1x10^{-30}$		-0.009	0.010	0.370	0.026	0.022	0.240	0.021	0.006	**0.0008**
CILP2	19	rs10401969	T	TC	0.119	$3x10^{-38}$	TG, LDL	-0.033	0.018	0.057	0.124	0.039	**0.001**	0.028	0.011	**0.011**
LDLR	19	rs6511720	G	LDL	0.175	$4x10^{-117}$	TC	0.029	0.015	**0.043**	0.021	0.033	0.520	-0.011	0.009	0.230
PLTP	20	rs6065906	T	HDL	0.023	$2x10^{-22}$	TG	0.034	0.012	**0.005**	0.025	0.028	0.360	-0.004	0.008	0.600

ξ Beta for triglycerdes in Teslovich were estimated as percent changes due to a single copy of the minor allele (see Supplementary Table 2 in Teslovich paper) and effect in mg/dL was convert to mmol/L.

Table S2. Heterogeneity P-values within adolescents and adults in HDL-C in 98 SNPs examined.

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
ANGPTL3	1	rs2131925	T	0.037	0.025	++-	0.415	0.023	0.015	++--	0.271
EVI5	1	rs7515577	A	0.072	0.032	+++	0.684	0.029	0.018	++--	0.246
GALNT2	1	rs4846914	A	0.071	0.025	+++	0.948	0.065	0.015	++++	0.144
IRF2BP2	1	rs514230	A	0.029	0.024	+-+	0.342	-0.010	0.014	+--+	0.821
LDLRAP1	1	rs12027135	A	-0.011	0.024	-++	0.422	-0.035	0.014	----	0.288
MOSC1	1	rs2642442	T	-0.013	0.027	-+-	0.296	0.025	0.016	++-+	0.063
PABPC4	1	rs4660293	A	-0.016	0.029	-+-	0.421	0.061	0.018	++++	0.563
PCSK9	1	rs2479409	A	-0.031	0.029	---	0.667	-0.006	0.017	-+-+	0.560
SORT1	1	rs629301	T	-0.079	0.029	---	0.921	-0.046	0.017	----	0.524
ZNF648	1	rs1689800	A	0.003	0.026	++-	0.650	0.010	0.015	+-++	0.630
ABCG5/8	2	rs4299376	T	0.090	0.026	+++	0.633	0.001	0.015	+0--	0.875
APOB	2	rs1042034	T	-0.065	0.031	---	0.422	-0.051	0.017	----	0.864
APOB	2	rs1367117	A	0.012	0.026	-+-	0.623	-0.021	0.015	+--+	0.751
COBLL1	2	rs10195252	T	-0.034	0.024	+--	0.232	-0.018	0.015	---+	0.676
COBLL1	2	rs12328675	T	-0.092	0.035	---	0.549	-0.049	0.022	---+	0.477
GCKR	2	rs1260326	T	-0.005	0.025	--+	0.892	-0.023	0.014	----	0.187
IRS1	2	rs2972146	T	-0.026	0.025	---	0.780	-0.040	0.015	----	0.759
MSL2L1	3	rs645040	T	-0.080	0.029	---	0.928	-0.051	0.017	----	0.950
RAF1	3	rs2290159	C	-0.019	0.028	+--	0.167	-0.005	0.017	++--	0.630
KLHL8	4	rs442177	T	-0.014	0.025	---	0.999	0.013	0.015	+++-	0.466
SLC39A8	4	rs13107325	T	-0.102	0.044	---	0.600	-0.077	0.025	+---	0.120
ARL15	5	rs6450176	A	-0.053	0.029	---	0.593	-0.027	0.017	--++	0.247
HMGCR	5	rs12916	T	-0.007	0.025	--+	0.394	0.004	0.015	+-+-	0.343
MAP3K1	5	rs9686661	T	0.011	0.030	++-	0.895	-0.033	0.018	--+-	0.388
TIMD4	5	rs6882076	T	0.014	0.026	+-+	0.650	-0.020	0.015	----	0.543
C6orf106	6	rs2814944	A	-0.027	0.033	+--	0.352	-0.037	0.020	---+	0.590
C6orf106	6	rs2814982	T	-0.023	0.042	+--	0.474	-0.032	0.025	----	0.934
CITED2	6	rs605066	T	0.019	0.025	+--	0.124	0.041	0.015	+++-	0.342
FRK	6	rs9488822	A	-0.017	0.025	--+	0.345	0.039	0.015	++++	0.503
HFE	6	rs1800562	A	0.064	0.048	+-+	0.024	0.049	0.027	++++	0.674
HLA	6	rs2247056	T	-0.047	0.026	---	0.837	0.007	0.016	--++	0.634
HLA	6	rs3177928	A	0.085	0.034	+++	0.492	0.000	0.020	-+--	0.636

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
LPA	6	rs1084651	A	-0.072	0.033	---	0.891	-0.012	0.019	-0--	0.832
LPA	6	rs1564348	T	0.015	0.031	+++	0.977	-0.010	0.019	-++-	0.695
MYLIP	6	rs3757354	T	0.015	0.031	-++	0.297	-0.022	0.018	----	0.949
DNAH11	7	rs12670798	T	-0.018	0.028	+--	0.541	-0.012	0.017	----	0.879
KLF14	7	rs4731702	T	0.019	0.024	+-+	0.703	0.043	0.014	++++	0.076
MLXIPL	7	rs17145738	T	0.084	0.039	+++	0.992	0.090	0.022	++++	0.737
TYW1B	7	rs13238203	T	0.058	0.075	++-	0.776	-0.005	0.040	+--+	0.342
CYP7A1	8	rs2081687	T	-0.039	0.026	---	0.874	0.002	0.015	++--	0.345
LPL	8	rs12678919	A	-0.167	0.039	---	0.202	-0.161	0.024	----	0.086
NAT2	8	rs1495741	A	0.038	0.030	++-	0.280	-0.003	0.017	-+-+	0.553
PINX1	8	rs11776767	C	0.011	0.025	++-	0.762	-0.008	0.015	+++-	0.031
PLEC1	8	rs11136341	A	0.039	0.026	+++	0.969	-0.004	0.015	-+0-	0.558
PPP1R3B	8	rs9987289	A	-0.104	0.044	---	0.393	-0.139	0.025	----	0.431
TRIB1	8	rs2954029	A	-0.041	0.024	---	0.595	-0.033	0.014	----	0.408
TRPS1	8	rs2293889	T	0.025	0.025	-++	0.505	-0.038	0.015	----	0.885
TRPS1	8	rs2737229	A	0.002	0.026	0+-	0.706	-0.006	0.016	+-++	0.229
ABCA1	9	rs1883025	T	-0.017	0.028	-+-	0.448	-0.086	0.016	----	0.962
TTC39B	9	rs581080	C	0.096	0.032	+++	0.476	0.024	0.019	+-++	0.519
CYP26A1	10	rs2068888	A	-0.013	0.024	---	0.998	0.022	0.014	++++	0.966
GPAM	10	rs2255141	A	0.063	0.028	+++	0.443	0.021	0.016	-+++	0.505
JMJD1C	10	rs10761731	A	-0.067	0.024	---	0.757	0.022	0.015	++++	0.511
AMPD3	11	rs2923084	A	-0.064	0.032	---	0.921	0.037	0.019	++++	0.728
APOA1	11	rs964184	C	0.065	0.038	+++	0.538	0.134	0.021	++++	0.113
FADS1-2-3	11	rs174546	T	-0.020	0.026	++-	0.334	-0.062	0.015	----	0.744
LRP4	11	rs3136441	T	0.003	0.037	++-	0.546	-0.016	0.021	-+--	0.379
SPTY2D1	11	rs10128711	T	-0.053	0.028	---	0.968	0.029	0.016	-+++	0.824
ST3GAL4	11	rs11220462	A	0.000	0.036	+-+	0.685	-0.015	0.021	-+--	0.685
UBASH3B	11	rs7941030	T	-0.062	0.025	---	0.457	-0.020	0.015	+-0-	0.524
BRAP	12	rs11065987	A	0.036	0.025	+++	0.938	0.042	0.015	++++	0.593
HNF1A	12	rs1169288	A	0.038	0.026	++-	0.167	-0.018	0.016	--+-	0.535
LRP1	12	rs11613352	T	0.055	0.029	+++	0.439	0.036	0.017	-+++	0.722
MVK	12	rs7134594	T	0.074	0.024	+++	0.793	0.002	0.014	++--	0.561
PDE3A	12	rs7134375	A	0.016	0.024	-++	0.624	0.045	0.014	-+++	0.093
SBNO1	12	rs4759375	T	0.021	0.049	++-	0.945	0.042	0.030	++++	0.908

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
SCARB1	12	rs838880	T	-0.037	0.027	---	0.872	-0.034	0.016	---+	0.654
ZNF664	12	rs4765127	T	0.010	0.026	++-	0.073	0.084	0.015	++++	0.434
NYNRIN	14	rs8017377	A	-0.012	0.024	--+	0.315	0.008	0.014	+-+-	0.819
CAPN3	15	rs2412710	A	-0.095	0.089	--+	0.140	-0.049	0.054	--+-	0.215
FRMD5	15	rs2929282	A	0.176	0.061	+++	0.338	0.002	0.036	-+-+	0.348
LACTB	15	rs2652834	A	0.033	0.031	++-	0.636	-0.016	0.018	-+--	0.622
LIPC	15	rs1532085	A	0.108	0.025	+++	0.543	0.093	0.015	++++	0.184
CETP	16	rs3764261	A	0.316	0.026	+++	0.640	0.236	0.015	++++	0.417
CMIP	16	rs2925979	T	0.011	0.027	+++	0.952	-0.035	0.016	----	0.591
CTF1	16	rs11649653	C	-0.045	0.026	---	0.619	-0.009	0.015	--+-	0.802
HPR	16	rs2000999	A	0.000	0.032	-++	0.691	-0.005	0.019	-0-+	0.706
LCAT	16	rs16942887	A	0.022	0.039	+-+	0.903	0.077	0.023	++++	0.966
ABCA8	17	rs4148008	C	0.031	0.026	+++	0.857	0.006	0.016	-++-	0.375
OSBPL7	17	rs7206971	A	0.045	0.024	+++	0.659	0.033	0.014	++++	0.625
PGS1	17	rs4129767	A	0.084	0.024	+++	0.333	-0.008	0.014	+-++	0.637
STARD3	17	rs11869286	C	0.028	0.025	-++	0.616	0.059	0.015	++++	0.064
LIPG	18	rs7241918	T	0.118	0.031	+++	0.789	0.094	0.019	++++	0.794
MC4R	18	rs12967135	A	-0.122	0.029	---	0.822	-0.037	0.017	--+-	0.149
ANGPTL4	19	rs7255436	A	0.055	0.024	+++	0.927	0.034	0.014	-+++	0.177
APOE	19	rs439401	T	0.039	0.025	++-	0.216	0.037	0.015	++++	0.315
APOE	19	rs4420638	A	0.083	0.036	++-	0.058	0.118	0.020	++++	0.914
CILP2	19	rs10401969	T	-0.104	0.046	---	0.862	-0.010	0.027	---+	0.570
FLJ36070	19	rs492602	A	-0.013	0.024	+--	0.838	0.026	0.014	-++0	0.330
LDLR	19	rs6511720	T	-0.116	0.038	---	0.049	0.027	0.023	-+++	0.092
LILRA3	19	rs386000	C	-0.001	0.030	+-+	0.420	0.055	0.017	++++	0.726
LOC55908	19	rs737337	T	0.066	0.046	+++	0.766	0.070	0.027	++++	0.557
ERGIC3	20	rs2277862	T	-0.065	0.034	---	0.438	-0.043	0.021	---+	0.174
MAFB	20	rs2902940	A	-0.013	0.026	+--	0.205	-0.036	0.015	----	0.688
PLTP	20	rs6065906	T	0.119	0.032	+++	0.684	0.060	0.018	+++-	0.422
TOP1	20	rs6029526	A	0.041	0.024	+-+	0.151	0.002	0.014	+--+	0.663
PLA2G6	22	rs5756931	T	0.003	0.025	++-	0.838	-0.024	0.015	----	0.816
UBE2L3	22	rs181362	T	-0.081	0.031	--+	0.093	-0.029	0.019	+-+-	0.020

Numbers in ‘Beta’ and ‘SE’ columns are in standard deviation (SD) unit. The SD unit for adolescents and adults are 0.292 and 0.397.
Adolescents: Age group 1-3 (n=1593, n=1356, n=1350 respectively); Adults: Age group 4-7 (n=1055, n=5198, n=3305, n=1580 respectively)

Table S3. Heterogeneity P-values within adolescents and adults in LDL-C in 98 SNPs examined.

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
ANGPTL3	1	rs2131925	T	0.049	0.026	+++	0.722	0.012	0.015	+++-	0.032
EVI5	1	rs7515577	A	-0.003	0.032	--+	0.609	-0.007	0.018	--+-	0.844
GALNT2	1	rs4846914	A	-0.027	0.025	--+	0.499	-0.024	0.015	-+--	0.058
IRF2BP2	1	rs514230	A	0.006	0.024	++-	0.233	-0.052	0.014	----	0.505
LDLRAP1	1	rs12027135	A	-0.069	0.024	---	0.386	0.003	0.015	-+-+	0.656
MOSC1	1	rs2642442	T	0.039	0.027	++-	0.352	0.011	0.016	--++	0.177
PABPC4	1	rs4660293	A	-0.043	0.029	---	0.612	0.013	0.018	-+++	0.932
PCSK9	1	rs2479409	A	-0.075	0.029	---	0.668	-0.044	0.017	+---	0.393
SORT1	1	rs629301	T	0.178	0.029	+++	0.593	0.150	0.018	++++	0.127
ZNF648	1	rs1689800	A	0.001	0.026	+--	0.144	-0.028	0.015	---+	0.588
ABCG5/8	2	rs4299376	T	-0.032	0.026	---	0.985	-0.050	0.016	----	0.794
APOB	2	rs1367117	A	0.121	0.027	+++	0.532	0.128	0.016	++++	0.421
APOB	2	rs1042034	T	0.083	0.031	+++	0.527	0.039	0.018	+++-	0.185
COBLL1	2	rs10195252	T	-0.059	0.024	---	0.404	0.025	0.015	+++-	0.045
COBLL1	2	rs12328675	T	-0.060	0.035	-+-	0.202	0.004	0.022	++--	0.648
GCKR	2	rs1260326	T	0.044	0.025	+++	0.970	0.010	0.015	+-+-	0.381
IRS1	2	rs2972146	T	-0.002	0.025	--+	0.641	0.015	0.015	-+++	0.771
MSL2L1	3	rs645040	T	0.031	0.029	--+	0.192	0.036	0.017	++++	0.988
RAF1	3	rs2290159	C	-0.019	0.028	-+-	0.446	-0.003	0.017	--++	0.723
KLHL8	4	rs442177	T	-0.025	0.025	---	0.829	-0.010	0.015	---+	0.092
SLC39A8	4	rs13107325	T	0.122	0.045	+++	0.474	-0.020	0.025	---+	0.065
ARL15	5	rs6450176	A	0.080	0.029	+++	0.970	0.024	0.017	+++-	0.486
HMGCR	5	rs12916	T	-0.010	0.025	-+-	0.861	-0.067	0.015	+---	0.012
MAP3K1	5	rs9686661	T	0.085	0.030	+++	0.711	0.038	0.022	++?+	0.877
TIMD4	5	rs6882076	T	-0.060	0.026	---	0.619	-0.045	0.015	+---	0.551
C6orf106	6	rs2814944	A	-0.018	0.033	-+-	0.824	-0.013	0.020	+---	0.857
C6orf106	6	rs2814982	T	0.012	0.042	++-	0.319	-0.052	0.025	----	0.957
CITED2	6	rs605066	T	-0.051	0.025	-+-	0.282	-0.014	0.015	--+-	0.912
FRK	6	rs9488822	A	0.029	0.025	-++	0.606	-0.005	0.018	++?-	0.317
HFE	6	rs1800562	A	-0.036	0.049	---	0.990	-0.068	0.027	---+	0.028
HLA	6	rs3177928	A	0.057	0.035	+++	0.980	0.074	0.020	-+++	0.096
HLA	6	rs2247056	T	-0.015	0.026	-0-	0.883	-0.049	0.016	----	0.519

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
LPA	6	rs1084651	A	-0.076	0.033	---	0.930	-0.009	0.020	++-+	0.109
LPA	6	rs1564348	T	-0.012	0.031	--+	0.710	-0.029	0.020	--+-	0.589
MYLIP	6	rs3757354	T	-0.124	0.031	---	0.137	-0.024	0.018	---+	0.770
DNAH11	7	rs12670798	T	0.002	0.028	0-+	0.221	-0.005	0.017	0+--	0.664
KLF14	7	rs4731702	T	-0.023	0.025	---	0.759	-0.036	0.015	----	0.796
MLXIPL	7	rs17145738	T	-0.056	0.039	---	0.505	0.018	0.023	++++	0.994
TYW1B	7	rs13238203	T	-0.123	0.076	---	0.684	0.083	0.041	++++	0.273
CYP7A1	8	rs2081687	T	0.067	0.026	+++	0.409	0.003	0.015	+++-	0.065
LPL	8	rs12678919	A	0.017	0.039	+++	0.992	-0.034	0.024	----	0.823
NAT2	8	rs1495741	A	-0.027	0.030	--+	0.660	0.009	0.018	-+-+	0.378
PINX1	8	rs11776767	C	0.020	0.025	+++	0.907	-0.008	0.015	++--	0.579
PLEC1	8	rs11136341	A	0.001	0.026	-+0	0.968	-0.001	0.015	+-+-	0.673
PPP1R3B	8	rs9987289	A	-0.041	0.044	---	0.973	-0.058	0.030	--?+	0.210
TRIB1	8	rs2954029	A	-0.027	0.025	---	0.858	0.029	0.015	++--	0.115
TRPS1	8	rs2737229	A	0.060	0.026	+++	0.928	0.040	0.016	+++-	0.183
TRPS1	8	rs2293889	T	-0.005	0.025	+--	0.341	0.026	0.015	++++	0.422
ABCA1	9	rs1883025	T	-0.042	0.028	---	0.879	-0.010	0.017	+---	0.728
TTC39B	9	rs581080	C	0.009	0.032	+-+	0.496	0.010	0.019	-++-	0.606
CYP26A1	10	rs2068888	A	0.031	0.024	+++	0.662	-0.001	0.015	-+-+	0.309
GPAM	10	rs2255141	A	-0.053	0.028	---	0.779	0.014	0.016	++++	0.876
JMJD1C	10	rs10761731	A	-0.034	0.024	-+-	0.377	-0.026	0.015	---+	0.295
AMPD3	11	rs2923084	A	0.018	0.032	+-+	0.723	0.019	0.019	--++	0.076
APOA1	11	rs964184	C	-0.022	0.038	--+	0.506	-0.060	0.026	+-?-	0.089
FADS1-2-3	11	rs174546	T	-0.146	0.027	---	0.572	-0.061	0.015	----	0.915
LRP4	11	rs3136441	T	-0.035	0.037	---	0.816	0.052	0.021	++++	0.693
SPTY2D1	11	rs10128711	T	-0.043	0.028	+--	0.213	-0.013	0.017	+---	0.704
ST3GAL4	11	rs11220462	A	0.015	0.036	+-+	0.718	0.030	0.021	++++	0.587
UBASH3B	11	rs7941030	T	0.030	0.025	+-+	0.364	-0.002	0.018	+-?-	0.464
BRAP	12	rs11065987	A	0.037	0.025	-++	0.117	0.028	0.015	++-+	0.192
HNF1A	12	rs1169288	A	-0.065	0.026	---	0.875	-0.072	0.016	----	0.715
LRP1	12	rs11613352	T	-0.052	0.029	---	0.502	-0.015	0.017	+---	0.932
MVK	12	rs7134594	T	0.015	0.024	++-	0.890	0.028	0.014	++++	0.900
PDE3A	12	rs7134375	A	-0.017	0.024	--+	0.285	0.000	0.015	-+-+	0.862
SBNO1	12	rs4759375	T	0.067	0.050	-++	0.286	0.055	0.031	+++-	0.109

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
SCARB1	12	rs838880	T	-0.011	0.027	+--	0.837	-0.028	0.019	--?-	0.382
ZNF664	12	rs4765127	T	-0.001	0.026	+--	0.992	-0.013	0.015	---+	0.046
NYNRIN	14	rs8017377	A	-0.021	0.024	---	0.973	0.036	0.017	-+?+	0.220
CAPN3	15	rs2412710	A	-0.014	0.089	+--	0.204	0.051	0.054	+++-	0.712
FRMD5	15	rs2929282	A	0.051	0.061	-++	0.240	-0.021	0.036	---+	0.399
LACTB	15	rs2652834	A	-0.031	0.031	--+	0.302	0.004	0.019	++-+	0.828
LIPC	15	rs1532085	A	0.043	0.025	+++	0.914	0.012	0.015	+++-	0.856
CETP	16	rs3764261	A	-0.009	0.026	+--	0.505	-0.039	0.016	----	0.930
CMIP	16	rs2925979	T	-0.072	0.027	---	0.474	0.007	0.016	-+--	0.600
CTF1	16	rs11649653	C	0.008	0.026	++-	0.960	0.021	0.015	+++-	0.164
HPR	16	rs2000999	A	0.009	0.032	+-+	0.741	0.045	0.019	+++-	0.482
LCAT	16	rs16942887	A	-0.005	0.039	-++	0.369	-0.013	0.023	-+--	0.889
ABCA8	17	rs4148008	C	-0.016	0.027	---	0.767	-0.020	0.016	+---	0.461
OSBPL7	17	rs7206971	A	0.013	0.024	++-	0.863	0.024	0.015	-++-	0.568
PGS1	17	rs4129767	A	0.034	0.024	-++	0.306	0.049	0.015	++++	0.783
STARD3	17	rs11869286	C	0.004	0.025	-+-	0.494	-0.007	0.015	---+	0.899
LIPG	18	rs7241918	T	-0.005	0.031	-+-	0.850	-0.017	0.019	+---	0.935
MC4R	18	rs12967135	A	0.015	0.030	-++	0.782	0.030	0.017	-+++	0.595
ANGPTL4	19	rs7255436	A	0.028	0.025	+++	0.856	0.004	0.015	+--+	0.329
APOE	19	rs4420638	A	-0.231	0.036	---	0.588	-0.154	0.021	---0	0.017
APOE	19	rs439401	T	-0.044	0.025	---	0.583	-0.018	0.015	---+	0.304
CILP2	19	rs10401969	T	0.233	0.046	+++	0.130	0.119	0.028	-+++	0.120
FLJ36070	19	rs492602	A	-0.070	0.024	---	0.676	-0.051	0.014	+---	0.111
LDLR	19	rs6511720	T	-0.062	0.038	---	0.597	-0.176	0.023	----	0.224
LILRA3	19	rs386000	C	-0.010	0.030	-++	0.176	-0.001	0.018	--++	0.573
LOC55908	19	rs737337	T	0.013	0.047	+-+	0.410	0.017	0.028	+-++	0.502
ERGIC3	20	rs2277862	T	0.004	0.034	-++	0.014	-0.038	0.021	----	0.498
MAFB	20	rs2902940	A	0.050	0.027	+++	0.894	0.005	0.016	--++	0.040
PLTP	20	rs6065906	T	0.027	0.032	+++	0.953	0.002	0.019	---+	0.246
TOP1	20	rs6029526	A	0.035	0.024	+-+	0.268	0.017	0.015	++-+	0.175
PLA2G6	22	rs5756931	T	-0.028	0.025	---	0.707	-0.010	0.015	--++	0.560
UBE2L3	22	rs181362	T	0.034	0.031	+++	0.904	-0.024	0.019	+---	0.878

Numbers in ‘Beta’ and ‘SE’ columns are in standard deviation (SD) unit. The SD unit for adolescents and adults are 0.658 and 0.912 respectively.
Adolescents: Age group 1-3 (n=1366, n=1353, n=1349 respectively); Adults: Age group 4-7 (n=1045, n=5050, n=3160, n=1521 respectively)

Table S4. Heterogeneity P-values within adolescents and adults in triglycerides in 98 SNPs examined

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
ANGPTL3	1	rs2131925	T	0.079	0.025	+++	0.891	0.055	0.015	++++	0.849
EVI5	1	rs7515577	A	0.002	0.032	-++	0.943	-0.023	0.017	---+	0.498
GALNT2	1	rs4846914	A	-0.014	0.025	+--	0.670	-0.071	0.014	----	0.021
IRF2BP2	1	rs514230	A	-0.012	0.024	+--	0.496	0.020	0.014	-++-	0.531
LDLRAP1	1	rs12027135	A	-0.011	0.024	-+-	0.336	0.006	0.014	-+-+	0.188
MOSC1	1	rs2642442	T	-0.012	0.027	-+-	0.106	-0.025	0.016	----	0.706
PABPC4	1	rs4660293	A	-0.012	0.029	+--	0.296	-0.027	0.017	----	0.694
PCSK9	1	rs2479409	A	0.032	0.029	-++	0.236	0.007	0.017	+++-	0.916
SORT1	1	rs629301	T	0.080	0.029	+++	0.619	0.018	0.017	+++-	0.555
ZNF648	1	rs1689800	A	0.010	0.026	+--	0.460	-0.012	0.015	+---	0.232
ABCG5/8	2	rs4299376	T	-0.029	0.026	---	0.606	-0.006	0.015	+--+	0.800
APOB	2	rs1367117	A	-0.009	0.026	+--	0.334	0.026	0.015	++++	0.990
APOB	2	rs1042034	T	0.067	0.031	+++	0.340	0.065	0.017	++++	0.747
COBLL1	2	rs12328675	T	0.069	0.035	+++	0.575	0.050	0.022	-++0	0.249
COBLL1	2	rs10195252	T	0.028	0.024	+-+	0.333	0.033	0.015	-+++	0.538
GCKR	2	rs1260326	T	0.079	0.025	+++	0.897	0.083	0.014	++++	0.829
IRS1	2	rs2972146	T	-0.010	0.025	+--	0.602	0.055	0.015	++++	0.313
MSL2L1	3	rs645040	T	0.054	0.029	+++	0.510	0.058	0.017	++++	0.468
RAF1	3	rs2290159	C	0.012	0.028	-++	0.206	-0.007	0.017	--++	0.065
KLHL8	4	rs442177	T	0.063	0.025	+++	0.108	-0.009	0.014	+--+	0.459
SLC39A8	4	rs13107325	T	0.088	0.045	+++	0.704	0.118	0.025	-+++	0.009
ARL15	5	rs6450176	A	0.095	0.029	+++	0.532	-0.001	0.017	+--+	0.410
HMGCR	5	rs12916	T	0.005	0.025	-++	0.840	0.001	0.015	+--+	0.629
MAP3K1	5	rs9686661	T	0.032	0.030	+++	0.888	0.078	0.018	++++	0.356
TIMD4	5	rs6882076	T	-0.047	0.026	---	0.570	-0.037	0.015	---+	0.127
C6orf106	6	rs2814944	A	0.066	0.033	+++	0.610	0.003	0.020	++0-	0.614
C6orf106	6	rs2814982	T	0.135	0.042	+++	0.612	0.006	0.025	-++-	0.677
CITED2	6	rs605066	T	-0.035	0.025	--+	0.518	-0.037	0.015	----	0.913
FRK	6	rs9488822	A	0.012	0.025	++-	0.823	-0.017	0.015	----	0.909
HFE	6	rs1800562	A	0.037	0.048	+++	0.828	-0.030	0.026	+---	0.680

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
HLA	6	rs3177928	A	-0.043	0.035	+--	0.435	-0.001	0.020	--++	0.942
HLA	6	rs2247056	T	-0.013	0.026	+--	0.758	-0.051	0.015	+---	0.338
LPA	6	rs1084651	A	-0.015	0.033	--+	0.325	-0.022	0.019	--+-	0.332
LPA	6	rs1564348	T	0.001	0.031	--+	0.093	0.026	0.019	++++	0.781
MYLIP	6	rs3757354	T	-0.104	0.031	---	0.877	0.025	0.018	++-+	0.251
DNAH11	7	rs12670798	T	0.000	0.028	-++	0.368	0.008	0.017	+++-	0.438
KLF14	7	rs4731702	T	-0.013	0.024	-++	0.566	-0.042	0.014	----	0.173
MLXIPL	7	rs17145738	T	-0.164	0.039	---	0.367	-0.118	0.022	----	0.579
TYW1B	7	rs13238203	T	-0.158	0.076	---	0.772	-0.018	0.040	+-+-	0.180
CYP7A1	8	rs2081687	T	0.049	0.026	+++	0.335	0.035	0.015	++++	0.890
LPL	8	rs12678919	A	0.151	0.039	+++	0.557	0.190	0.023	++++	0.096
NAT2	8	rs1495741	A	-0.040	0.030	---	0.880	-0.016	0.017	--+-	0.627
PINX1	8	rs11776767	C	0.014	0.025	+-+	0.639	0.024	0.015	++-+	0.013
PLEC1	8	rs11136341	A	-0.003	0.026	-+-	0.848	0.002	0.015	--++	0.582
PPP1R3B	8	rs9987289	A	0.040	0.044	-++	0.337	0.039	0.025	-+++	0.134
TRIB1	8	rs2954029	A	0.065	0.024	+++	0.500	0.088	0.014	++++	0.425
TRPS1	8	rs2737229	A	0.033	0.026	+-+	0.559	0.029	0.016	++-+	0.333
TRPS1	8	rs2293889	T	-0.044	0.025	-+-	0.337	-0.016	0.014	--++	0.175
ABCA1	9	rs1883025	T	-0.059	0.028	---	0.453	-0.039	0.016	----	0.249
TTC39B	9	rs581080	C	-0.044	0.032	--+	0.361	0.003	0.019	-++-	0.303
CYP26A1	10	rs2068888	A	0.031	0.024	+++	0.750	-0.040	0.014	+---	0.342
GPAM	10	rs2255141	A	0.021	0.028	-++	0.323	-0.024	0.016	+---	0.713
JMJD1C	10	rs10761731	A	0.013	0.024	++-	0.413	0.017	0.015	++-+	0.226
AMPD3	11	rs2923084	A	-0.024	0.032	-+-	0.734	-0.031	0.019	+---	0.795
APOA1	11	rs964184	C	-0.245	0.038	---	0.423	-0.285	0.021	----	0.410
FADS1-2-3	11	rs174546	T	0.034	0.026	-++	0.585	0.068	0.015	++++	0.964
LRP4	11	rs3136441	T	-0.012	0.037	--+	0.633	0.063	0.021	++++	0.370
SPTY2D1	11	rs10128711	T	-0.005	0.028	-+-	0.665	-0.035	0.016	----	0.984
ST3GAL4	11	rs11220462	A	-0.002	0.036	-+-	0.265	0.010	0.021	-+-+	0.552
UBASH3B	11	rs7941030	T	0.052	0.025	+++	0.540	-0.010	0.015	+-+-	0.402
BRAP	12	rs11065987	A	0.010	0.025	++-	0.285	-0.030	0.014	---+	0.465
HNF1A	12	rs1169288	A	-0.066	0.026	---	0.299	-0.006	0.016	+--+	0.802

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
LRP1	12	rs11613352	T	-0.085	0.029	---	0.387	-0.056	0.017	----	0.752
MVK	12	rs7134594	T	0.010	0.024	0+-	0.713	0.001	0.014	-+-+	0.452
PDE3A	12	rs7134375	A	0.026	0.024	++-	0.712	-0.024	0.014	++--	0.024
SBNO1	12	rs4759375	T	0.092	0.049	+++	0.904	-0.013	0.030	++--	0.725
SCARB1	12	rs838880	T	-0.019	0.027	+--	0.031	0.016	0.016	+++-	0.207
ZNF664	12	rs4765127	T	-0.045	0.026	---	0.799	-0.066	0.015	----	0.279
NYNRIN	14	rs8017377	A	0.027	0.024	+++	0.717	-0.007	0.014	+---	0.471
CAPN3	15	rs2412710	A	-0.067	0.090	---	0.890	0.047	0.054	++-+	0.385
FRMD5	15	rs2929282	A	-0.053	0.061	---	0.816	-0.032	0.036	--+-	0.165
LACTB	15	rs2652834	A	0.072	0.031	+++	0.746	-0.004	0.018	+--+	0.873
LIPC	15	rs1532085	A	0.060	0.025	+++	0.915	0.062	0.015	++++	0.154
CETP	16	rs3764261	A	-0.030	0.026	--+	0.624	-0.035	0.015	----	0.723
CMIP	16	rs2925979	T	-0.017	0.027	+--	0.884	0.030	0.016	+++-	0.530
CTF1	16	rs11649653	C	0.024	0.026	+-+	0.401	0.018	0.015	++--	0.118
HPR	16	rs2000999	A	-0.029	0.032	-+-	0.738	0.005	0.018	+++-	0.476
LCAT	16	rs16942887	A	0.044	0.039	+-+	0.217	-0.035	0.023	----	0.945
ABCA8	17	rs4148008	C	-0.003	0.027	--+	0.115	0.008	0.016	++-+	0.771
OSBPL7	17	rs7206971	A	-0.038	0.024	-+-	0.384	-0.033	0.014	----	0.979
PGS1	17	rs4129767	A	0.004	0.024	-+-	0.090	0.006	0.014	-+++	0.702
STARD3	17	rs11869286	C	-0.030	0.025	---	0.813	-0.012	0.015	+---	0.527
LIPG	18	rs7241918	T	0.016	0.031	-++	0.835	-0.028	0.018	----	0.951
MC4R	18	rs12967135	A	0.008	0.029	-++	0.546	0.042	0.017	-++-	0.462
ANGPTL4	19	rs7255436	A	0.005	0.024	+-+	0.812	-0.048	0.014	+---	0.152
APOE	19	rs4420638	A	-0.068	0.036	---	0.451	-0.098	0.020	----	0.578
APOE	19	rs439401	T	-0.095	0.025	---	0.943	-0.073	0.015	----	0.651
CILP2	19	rs10401969	T	0.156	0.046	+++	0.853	0.051	0.027	++++	0.856
FLJ36070	19	rs492602	A	-0.010	0.024	--+	0.695	-0.029	0.014	+---	0.015
LDLR	19	rs6511720	T	0.071	0.038	+++	0.343	0.014	0.023	++-+	0.559
LILRA3	19	rs386000	C	0.019	0.030	+++	0.981	-0.030	0.017	--+-	0.304
LOC55908	19	rs737337	T	0.003	0.046	-++	0.733	-0.012	0.027	+-+-	0.518
ERGIC3	20	rs2277862	T	0.046	0.034	++-	0.253	0.008	0.021	++-+	0.728
MAFB	20	rs2902940	A	-0.011	0.026	---	0.983	0.021	0.015	-+++	0.175

				Within Adolescent				Within Adult			
Locus	Chr	SNP	Ref Allele	Beta	SE	Direction	Heterogeneity p-value	Beta	SE	Direction	Heterogeneity p-value
PLTP	20	rs6065906	T	-0.071	0.032	---	0.968	-0.060	0.018	----	0.762
TOP1	20	rs6029526	A	-0.006	0.024	-+-	0.693	0.012	0.014	-+++	0.887
PLA2G6	22	rs5756931	T	0.039	0.025	+++	0.682	0.000	0.015	+-++	0.620
UBE2L3	22	rs181362	T	0.070	0.031	++-	0.105	-0.023	0.018	-+--	0.168

Numbers in 'Beta' and 'SE' columns are in standard deviation (SD) unit. To convert to mmol/L, The SD unit for adolescents and adults are 0.183 and 0.216 respectively.
Adolescents: Age group 1-3 (n=1372, n=1359, n=1351 respectively); Adults: Age group 4-7 (n=1060, n=5230, n=3315, n=1586 respectively)

Table S5. Heterogeneity test between adolescents and adults in HDL-C in 98 SNPs examined.

				Within Adolescent			**Within Adult**			**Adolescent + Adult**				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
ANGPTL3	1	rs2131925	T	0.042	0.034	0.220	0.024	0.016	0.142	0.027	0.015	0.05967	++	0.632
EVI5	1	rs7515577	A	0.070	0.042	0.098	0.026	0.019	0.170	0.034	0.017	0.053	++	0.340
GALNT2	1	rs4846914	A	0.040	0.033	0.240	0.065	0.016	3.30×10^{-05}	0.060	0.014	2.86×10^{-05}	++	0.495
IRF2BP2	1	rs514230	T	-0.056	0.033	0.088	0.014	0.015	0.370	0.002	0.014	0.883	-+	0.053
LDLRAP1	1	rs12027135	T	0.023	0.033	0.490	0.037	0.016	0.016	0.034	0.014	0.01708	++	0.703
MOSC1	1	rs2642442	T	-0.015	0.036	0.680	0.026	0.017	0.119	0.019	0.015	0.228	-+	0.303
PABPC4	1	rs4660293	A	-0.029	0.038	0.450	0.061	0.019	0.001	0.043	0.017	0.011	-+	0.034
PCSK9	1	rs2479409	A	-0.057	0.038	0.137	0.001	0.018	0.960	-0.010	0.016	0.554	-+	0.168
SORT1	1	rs629301	T	-0.111	0.038	0.004	-0.046	0.019	0.014	-0.059	0.017	0.001	--	0.126
ZNF648	1	rs1689800	A	-0.006	0.034	0.860	0.008	0.016	0.630	0.006	0.015	0.706	-+	0.710
ABCG5/8	2	rs4299376	T	0.086	0.035	0.015	-0.002	0.016	0.920	0.013	0.015	0.364	+-	0.022
APOB	2	rs1042034	T	-0.061	0.041	0.137	-0.054	0.019	0.005	-0.055	0.017	0.001354	--	0.877
APOB	2	rs1367117	G	-0.021	0.035	0.540	0.021	0.017	0.210	0.013	0.015	0.396	-+	0.280
COBLL1	2	rs10195252	T	-0.021	0.032	0.510	-0.014	0.016	0.360	-0.015	0.014	0.2819	--	0.845
COBLL1	2	rs12328675	T	-0.076	0.047	0.105	-0.053	0.024	0.025	-0.058	0.021	0.00689	--	0.663
GCKR	2	rs1260326	C	-0.013	0.033	0.700	0.020	0.016	0.210	0.014	0.014	0.341	-+	0.368
IRS1	2	rs2972146	T	-0.046	0.034	0.180	-0.028	0.016	0.080	-0.031	0.015	0.03081	--	0.632
MSL2L1	3	rs645040	T	-0.073	0.039	0.059	-0.046	0.018	0.011	-0.051	0.016	0.002	--	0.530
RAF1	3	rs2290159	G	0.016	0.038	0.670	0.000	0.018	0.990	0.003	0.016	0.857	0	0.704
KLHL8	4	rs442177	T	-0.014	0.033	0.670	0.009	0.016	0.560	0.005	0.014	0.748	-+	0.531
SLC39A8	4	rs13107325	C	0.132	0.058	0.024	0.063	0.026	0.017	0.075	0.024	0.002	++	0.278
ARL15	5	rs6450176	G	0.057	0.038	0.134	0.035	0.018	0.050	0.039	0.016	0.016	++	0.601
HMGCR	5	rs12916	T	0.025	0.033	0.450	0.005	0.016	0.760	0.009	0.014	0.541	++	0.586
MAP3K1	5	rs9686661	C	-0.004	0.040	0.920	0.022	0.019	0.240	0.017	0.017	0.316	-+	0.557
TIMD4	5	rs6882076	C	-0.019	0.034	0.580	0.019	0.016	0.230	0.012	0.015	0.403	-+	0.312
C6orf106	6	rs2814944	G	0.045	0.044	0.310	0.036	0.021	0.093	0.038	0.019	0.04685	++	0.854
C6orf106	6	rs2814982	C	0.059	0.056	0.290	0.021	0.026	0.420	0.028	0.024	0.240	++	0.538
CITED2	6	rs605066	T	0.031	0.033	0.350	0.033	0.016	0.033	0.033	0.014	0.02347	++	0.957
FRK	6	rs9488822	A	-0.029	0.034	0.390	0.034	0.016	0.031	0.023	0.015	0.119	-+	0.094
HFE	6	rs1800562	G	-0.058	0.063	0.360	-0.028	0.029	0.330	-0.033	0.026	0.2069	--	0.665
HLA	6	rs2247056	C	0.038	0.034	0.270	0.000	0.017	0.990	0.008	0.015	0.617	0	0.318
HLA	6	rs3177928	G	-0.080	0.046	0.083	-0.017	0.021	0.420	-0.028	0.019	0.145	--	0.213
LPA	6	rs1084651	G	0.093	0.044	0.034	0.011	0.021	0.600	0.026	0.019	0.167	++	0.093

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
LPA	6	rs1564348	T	0.005	0.042	0.900	-0.002	0.021	0.930	-0.001	0.019	0.9745	+-	0.882
MYLIP	6	rs3757354	C	-0.016	0.041	0.690	0.021	0.019	0.270	0.015	0.017	0.402	-+	0.413
DNAH11	7	rs12670798	T	-0.030	0.038	0.430	-0.010	0.018	0.570	-0.014	0.016	0.4009	--	0.634
KLF14	7	rs4731702	C	-0.032	0.033	0.320	-0.046	0.015	0.003	-0.044	0.014	0.001408	--	0.699
MLXIPL	7	rs17145738	C	-0.097	0.051	0.058	-0.102	0.024	2.00×10^{-05}	-0.101	0.022	3.24×10^{-06}	--	0.929
TYW1B	7	rs13238203	C	-0.069	0.100	0.490	-0.012	0.043	0.780	-0.021	0.040	0.597	--	0.601
CYP7A1	8	rs2081687	C	0.042	0.035	0.220	-0.002	0.016	0.890	0.006	0.015	0.700	+-	0.253
LPL	8	rs12678919	A	-0.158	0.053	0.003	-0.162	0.025	1.60×10^{-10}	-0.161	0.023	9.86×10^{-13}	--	0.946
NAT2	8	rs1495741	A	0.051	0.039	0.200	0.008	0.019	0.680	0.016	0.017	0.342	++	0.322
PINX1	8	rs11776767	G	-0.013	0.033	0.700	0.002	0.016	0.900	-0.001	0.014	0.9526	-+	0.683
PLEC1	8	rs11136341	A	0.042	0.034	0.220	0.006	0.016	0.710	0.013	0.015	0.387	++	0.338
PPP1R3B	8	rs9987289	G	0.097	0.059	0.101	0.139	0.027	2.10×10^{-07}	0.132	0.025	8.08×10^{-08}	++	0.517
TRIB1	8	rs2954029	A	-0.045	0.033	0.170	-0.033	0.015	0.033	-0.035	0.014	0.01026	--	0.741
TRPS1	8	rs2293889	G	-0.015	0.033	0.660	0.049	0.015	0.002	0.038	0.014	0.005	-+	0.077
TRPS1	8	rs2737229	A	-0.019	0.035	0.590	-0.007	0.017	0.660	-0.009	0.015	0.5435	--	0.758
ABCA1	9	rs1883025	C	0.052	0.037	0.160	0.087	0.018	7.40×10^{-07}	0.080	0.016	7.01×10^{-07}	++	0.395
TTC39B	9	rs581080	C	0.069	0.043	0.109	0.023	0.020	0.260	0.031	0.018	0.086	++	0.332
CYP26A1	10	rs2068888	G	0.016	0.032	0.630	-0.019	0.015	0.210	-0.013	0.014	0.350	+-	0.322
GPAM	10	rs2255141	G	-0.087	0.036	0.017	-0.028	0.017	0.102	-0.039	0.015	0.012	--	0.138
JMJD1C	10	rs10761731	A	-0.056	0.033	0.085	0.019	0.016	0.220	0.005	0.014	0.743	-+	0.041
AMPD3	11	rs2923084	A	-0.050	0.043	0.250	0.033	0.020	0.104	0.018	0.018	0.315	-+	0.080
APOA1	11	rs964184	C	0.080	0.050	0.112	0.119	0.023	2.30×10^{-07}	0.112	0.021	7.91×10^{-08}	++	0.479
FADS1-2-3	11	rs174546	C	0.022	0.036	0.540	0.062	0.016	1.30×10^{-04}	0.055	0.015	0.000	++	0.310
LRP4	11	rs3136441	T	0.000	0.049	0.990	-0.027	0.022	0.220	-0.023	0.020	0.263	0	0.615
SPTY2D1	11	rs10128711	C	0.040	0.037	0.280	-0.028	0.017	0.115	-0.016	0.015	0.296	+-	0.095
ST3GAL4	11	rs11220462	G	-0.044	0.048	0.360	0.001	0.023	0.970	-0.007	0.021	0.721	-+	0.398
UBASH3B	11	rs7941030	T	-0.058	0.033	0.080	-0.026	0.016	0.098	-0.032	0.014	0.026	--	0.383
BRAP	12	rs11065987	A	0.033	0.033	0.320	0.042	0.016	0.007	0.040	0.014	0.005137	++	0.806
HNF1A	12	rs1169288	A	0.069	0.034	0.046	-0.018	0.017	0.290	-0.001	0.015	0.969	+-	0.022
LRP1	12	rs11613352	C	-0.050	0.038	0.190	-0.025	0.018	0.160	-0.030	0.016	0.069	--	0.552
MVK	12	rs7134594	T	0.085	0.032	0.008	0.010	0.015	0.510	0.024	0.014	0.083	++	0.034
PDE3A	12	rs7134375	C	-0.018	0.033	0.590	-0.041	0.016	0.008	-0.037	0.014	0.011	--	0.531
SBNO1	12	rs4759375	C	-0.047	0.069	0.500	-0.051	0.032	0.113	-0.050	0.029	0.0832	--	0.958
SCARB1	12	rs838880	T	-0.064	0.036	0.074	-0.035	0.017	0.041	-0.040	0.015	0.009	--	0.466

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
ZNF664	12	rs4765127	G	0.009	0.034	0.800	-0.080	0.016	8.00×10^{-07}	-0.064	0.015	1.03×10^{-05}	+-	0.018
NYNRIN	14	rs8017377	G	-0.001	0.033	0.980	-0.013	0.015	0.410	-0.011	0.014	0.4228	--	0.741
CAPN3	15	rs2412710	G	0.149	0.121	0.220	0.063	0.058	0.280	0.079	0.052	0.131	++	0.522
FRMD5	15	rs2929282	A	0.233	0.081	0.004	0.020	0.039	0.610	0.060	0.035	0.087	++	0.018
LACTB	15	rs2652834	G	-0.032	0.042	0.450	0.008	0.020	0.680	0.001	0.018	0.973	-+	0.390
LIPC	15	rs1532085	G	-0.111	0.033	0.001	-0.093	0.016	3.10×10^{-09}	-0.096	0.014	2.12×10^{-11}	--	0.624
CETP	16	rs3764261	C	-0.330	0.035	9.80×10^{-22}	-0.245	0.016	1.20×10^{-50}	-0.260	0.015	3.09×10^{-71}	--	0.027
CMIP	16	rs2925979	C	-0.023	0.037	0.530	0.035	0.017	0.037	0.025	0.015	0.107	-+	0.154
CTF1	16	rs11649653	C	-0.059	0.034	0.084	-0.011	0.016	0.500	-0.020	0.015	0.174	--	0.202
HPR	16	rs2000999	G	-0.001	0.042	0.980	-0.003	0.020	0.880	-0.003	0.018	0.8842	--	0.966
LCAT	16	rs16942887	G	-0.031	0.052	0.550	-0.085	0.024	0.00042	-0.076	0.022	0.001	--	0.346
ABCA8	17	rs4148008	C	0.023	0.036	0.520	0.008	0.017	0.630	0.011	0.015	0.485	++	0.706
OSBPL7	17	rs7206971	G	-0.041	0.032	0.200	-0.025	0.015	0.102	-0.028	0.014	0.04008	--	0.651
PGS1	17	rs4129767	G	-0.045	0.032	0.160	0.010	0.015	0.500	0.000	0.014	0.995	-+	0.120
STARD3	17	rs11869286	C	0.025	0.034	0.460	0.063	0.016	9.70×10^{-05}	0.056	0.015	0.000	++	0.312
LIPG	18	rs7241918	T	0.150	0.041	0.000	0.082	0.020	4.00×10^{-05}	0.095	0.018	1.23×10^{-07}	++	0.136
MC4R	18	rs12967135	G	0.136	0.039	0.001	0.032	0.018	0.077	0.050	0.016	0.002	++	0.015
ANGPTL4	19	rs7255436	A	0.082	0.033	0.013	0.039	0.015	0.012	0.046	0.014	0.001	++	0.236
APOE	19	rs439401	C	-0.030	0.034	0.370	-0.035	0.016	0.029	-0.034	0.015	0.01852	--	0.894
APOE	19	rs4420638	A	0.094	0.048	0.048	0.117	0.022	5.60×10^{-08}	0.113	0.020	1.60×10^{-08}	++	0.663
CILP2	19	rs10401969	T	-0.116	0.061	0.057	-0.006	0.029	0.820	-0.026	0.026	0.316	--	0.103
FLJ36070	19	rs492602	G	-0.003	0.033	0.930	-0.023	0.015	0.137	-0.020	0.014	0.152	--	0.581
LDLR	19	rs6511720	G	0.102	0.051	0.043	-0.019	0.024	0.440	0.003	0.022	0.892	+-	0.032
LILRA3	19	rs386000	G	-0.017	0.039	0.670	-0.063	0.019	0.001	-0.054	0.017	0.002	--	0.289
LOC55908	19	rs737337	T	0.086	0.062	0.170	0.060	0.029	0.041	0.065	0.026	0.01382	++	0.704
ERGIC3	20	rs2277862	C	0.039	0.045	0.380	0.039	0.022	0.079	0.039	0.020	0.04847	++	1.000
MAFB	20	rs2902940	A	0.013	0.035	0.710	-0.042	0.016	0.010	-0.033	0.015	0.026	+-	0.153
PLTP	20	rs6065906	T	0.120	0.043	0.005	0.067	0.020	0.001	0.076	0.018	2.50×10^{-05}	++	0.264
TOP1	20	rs6029526	T	-0.048	0.032	0.137	-0.005	0.015	0.740	-0.013	0.014	0.348	--	0.224
PLA2G6	22	rs5756931	T	0.006	0.033	0.850	-0.022	0.016	0.170	-0.017	0.014	0.247	+-	0.445
UBE2L3	22	rs181362	C	0.079	0.042	0.061	0.020	0.020	0.320	0.031	0.018	0.087	++	0.205

Numbers in ‘Beta’ and ‘SE’ columns are in standard deviation (SD) unit. The SD unit for adolescents and adults are 0.292 and 0.397 respectively

Table S6. Heterogeneity test between adolescents and adults in LDL-C in 98 SNPs examined

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
ANGPTL3	1	rs2131925	T	0.065	0.034	0.060	0.005	0.016	0.760	0.016	0.015	0.273	++	0.110
EVI5	1	rs7515577	A	0.035	0.042	0.410	-0.008	0.019	0.680	-0.001	0.017	0.968	+-	0.351
GALNT2	1	rs4846914	A	-0.034	0.033	0.310	-0.011	0.016	0.480	-0.015	0.014	0.286	--	0.531
IRF2BP2	1	rs514230	T	-0.002	0.033	0.950	0.044	0.015	0.004	0.036	0.014	0.008	-+	0.204
LDLRAP1	1	rs12027135	T	0.099	0.033	0.002	-0.005	0.016	0.760	0.015	0.014	0.304	-+	0.005
MOSC1	1	rs2642442	T	0.040	0.036	0.260	0.005	0.017	0.780	0.011	0.015	0.459	++	0.379
PABPC4	1	rs4660293	A	-0.027	0.038	0.490	0.016	0.019	0.410	0.007	0.017	0.663	-+	0.312
PCSK9	1	rs2479409	A	-0.069	0.038	0.071	-0.045	0.018	0.012	-0.049	0.016	0.002	--	0.568
SORT1	1	rs629301	T	0.203	0.038	0.000	0.151	0.019	1.90×10^{-15}	0.161	0.017	2.15×10^{-21}	++	0.221
ZNF648	1	rs1689800	A	0.018	0.034	0.590	-0.025	0.016	0.124	-0.017	0.015	0.235	+-	0.253
ABCG5/8	2	rs4299376	T	-0.071	0.035	0.045	-0.051	0.017	0.002	-0.055	0.015	0.000	--	0.607
APOB	2	rs1042034	T	0.087	0.041	0.033	0.027	0.019	0.160	0.038	0.017	0.029	++	0.184
APOB	2	rs1367117	G	-0.104	0.035	0.003	-0.124	0.017	1.90×10^{-13}	-0.120	0.015	3.86×10^{-15}	--	0.607
COBLL1	2	rs10195252	T	-0.055	0.032	0.090	0.026	0.016	0.106	0.010	0.014	0.494	-+	0.024
COBLL1	2	rs12328675	T	-0.030	0.047	0.530	-0.005	0.024	0.820	-0.010	0.021	0.634	--	0.636
GCKR	2	rs1260326	C	-0.049	0.033	0.140	-0.010	0.016	0.520	-0.017	0.014	0.226	--	0.288
IRS1	2	rs2972146	T	0.000	0.034	1.000	0.012	0.016	0.450	0.010	0.015	0.497	0+	0.750
MSL2L1	3	rs645040	T	0.047	0.039	0.220	0.036	0.018	0.050	0.038	0.016	0.020	++	0.798
RAF1	3	rs2290159	G	0.050	0.038	0.190	0.008	0.018	0.670	0.016	0.016	0.335	++	0.318
KLHL8	4	rs442177	T	-0.027	0.033	0.420	-0.004	0.016	0.820	-0.008	0.014	0.561	--	0.531
SLC39A8	4	rs13107325	C	-0.088	0.058	0.130	0.022	0.027	0.420	0.002	0.025	0.922	-+	0.086
ARL15	5	rs6450176	G	-0.087	0.038	0.022	-0.019	0.018	0.300	-0.032	0.016	0.053	--	0.106
HMGCR	5	rs12916	T	-0.030	0.033	0.360	-0.066	0.016	4.70×10^{-05}	-0.059	0.014	3.99×10^{-05}	--	0.326
MAP3K1	5	rs9686661	C	-0.098	0.040	0.015	-0.022	0.019	0.260	-0.036	0.017	0.036	--	0.086
TIMD4	5	rs6882076	C	0.077	0.034	0.025	0.049	0.016	0.003	0.054	0.015	0.000	++	0.456
C6orf106	6	rs2814944	G	0.058	0.044	0.190	0.015	0.022	0.480	0.024	0.020	0.230	++	0.382
C6orf106	6	rs2814982	C	0.018	0.056	0.740	0.058	0.027	0.029	0.051	0.024	0.038	++	0.520
CITED2	6	rs605066	T	-0.039	0.033	0.240	-0.008	0.016	0.600	-0.014	0.014	0.334	--	0.398
FRK	6	rs9488822	A	0.006	0.034	0.860	-0.012	0.016	0.450	-0.009	0.015	0.546	+-	0.632
HFE	6	rs1800562	G	-0.014	0.063	0.830	0.068	0.029	0.019	0.054	0.026	0.042	-+	0.237
HLA	6	rs2247056	C	0.009	0.034	0.790	0.044	0.017	0.010	0.037	0.015	0.015	++	0.357
HLA	6	rs3177928	G	-0.054	0.046	0.240	-0.078	0.021	0.000	-0.074	0.019	0.000	--	0.635
LPA	6	rs1084651	G	0.079	0.044	0.071	0.006	0.021	0.770	0.020	0.019	0.302	++	0.134

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
LPA	6	rs1564348	T	-0.021	0.042	0.630	-0.032	0.021	0.130	-0.030	0.019	0.113	--	0.815
MYLIP	6	rs3757354	C	0.083	0.041	0.041	0.028	0.020	0.160	0.039	0.018	0.032	++	0.228
DNAH11	7	rs12670798	T	-0.040	0.038	0.300	0.000	0.018	0.990	-0.007	0.016	0.652	0	0.342
KLF14	7	rs4731702	C	0.032	0.033	0.320	0.039	0.016	0.013	0.038	0.014	0.009	++	0.849
MLXIPL	7	rs17145738	C	0.045	0.051	0.390	-0.018	0.024	0.460	-0.007	0.022	0.762	-+	0.264
TYW1B	7	rs13238203	C	0.131	0.100	0.190	-0.072	0.044	0.098	-0.039	0.040	0.332	-+	0.063
CYP7A1	8	rs2081687	C	-0.086	0.035	0.012	0.002	0.016	0.900	-0.013	0.015	0.364	-+	0.022
LPL	8	rs12678919	A	0.009	0.053	0.860	-0.028	0.025	0.270	-0.021	0.023	0.347	+-	0.528
NAT2	8	rs1495741	A	-0.053	0.039	0.180	0.015	0.019	0.420	0.002	0.017	0.909	-+	0.117
PINX1	8	rs11776767	G	-0.006	0.033	0.860	0.013	0.016	0.420	0.009	0.014	0.515	-+	0.604
PLEC1	8	rs11136341	A	0.000	0.034	1.000	-0.010	0.016	0.520	-0.008	0.015	0.572	0	0.790
PPP1R3B	8	rs9987289	G	0.065	0.059	0.270	0.041	0.027	0.132	0.045	0.025	0.066	++	0.712
TRIB1	8	rs2954029	A	-0.024	0.033	0.460	0.031	0.016	0.045	0.021	0.014	0.154	-+	0.134
TRPS1	8	rs2293889	G	-0.002	0.033	0.960	-0.028	0.016	0.076	-0.023	0.014	0.109	--	0.478
TRPS1	8	rs2737229	A	0.043	0.035	0.220	0.043	0.017	0.013	0.043	0.015	0.005	++	1.000
ABCA1	9	rs1883025	C	0.049	0.037	0.180	0.002	0.018	0.890	0.011	0.016	0.497	++	0.253
TTC39B	9	rs581080	C	-0.017	0.043	0.690	0.015	0.020	0.450	0.009	0.018	0.608	-+	0.500
CYP26A1	10	rs2068888	G	-0.029	0.032	0.370	-0.005	0.016	0.760	-0.010	0.014	0.494	--	0.502
GPAM	10	rs2255141	G	0.045	0.036	0.210	-0.015	0.018	0.410	-0.003	0.016	0.852	-+	0.136
JMJD1C	10	rs10761731	A	-0.032	0.033	0.320	-0.025	0.016	0.110	-0.026	0.014	0.067	--	0.849
AMPD3	11	rs2923084	A	0.039	0.043	0.370	0.018	0.020	0.380	0.022	0.018	0.231	++	0.658
APOA1	11	rs964184	C	-0.035	0.050	0.490	-0.073	0.023	0.002	-0.066	0.021	0.001	--	0.490
FADS1-2-3	11	rs174546	C	0.125	0.036	0.000	0.060	0.016	0.000	0.071	0.015	1.32×10^{-06}	++	0.099
LRP4	11	rs3136441	T	0.015	0.049	0.760	0.058	0.023	0.010	0.050	0.021	0.016	++	0.427
SPTY2D1	11	rs10128711	C	0.056	0.037	0.130	0.018	0.018	0.320	0.025	0.016	0.118	++	0.356
ST3GAL4	11	rs11220462	G	-0.018	0.048	0.700	-0.037	0.023	0.110	-0.034	0.021	0.107	--	0.721
UBASH3B	11	rs7941030	T	0.041	0.033	0.220	-0.004	0.016	0.820	0.005	0.014	0.751	+-	0.220
BRAP	12	rs11065987	A	0.032	0.033	0.340	0.026	0.016	0.098	0.027	0.014	0.059	++	0.870
HNF1A	12	rs1169288	A	-0.044	0.034	0.210	-0.078	0.017	3.90×10^{-06}	-0.071	0.015	2.83×10^{-06}	--	0.371
LRP1	12	rs11613352	C	0.053	0.038	0.160	0.012	0.018	0.520	0.020	0.016	0.230	++	0.330
MVK	12	rs7134594	T	0.027	0.032	0.400	0.032	0.016	0.038	0.031	0.014	0.030	++	0.889
PDE3A	12	rs7134375	C	0.000	0.033	0.990	0.002	0.016	0.890	0.002	0.014	0.910	0	0.957
SBNO1	12	rs4759375	C	-0.039	0.069	0.570	-0.035	0.033	0.280	-0.036	0.030	0.230	--	0.958
SCARB1	12	rs838880	T	-0.008	0.036	0.830	-0.021	0.017	0.220	-0.019	0.015	0.226	--	0.744

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
ZNF664	12	rs4765127	G	0.003	0.034	0.940	0.010	0.016	0.530	0.009	0.015	0.547	++	0.852
NYNRIN	14	rs8017377	G	0.006	0.033	0.860	-0.043	0.016	0.006	-0.034	0.014	0.019	-+	0.182
CAPN3	15	rs2412710	G	-0.093	0.121	0.450	-0.053	0.059	0.370	-0.061	0.053	0.253	--	0.766
FRMD5	15	rs2929282	A	0.014	0.081	0.870	-0.034	0.039	0.390	-0.025	0.035	0.477	+-	0.593
LACTB	15	rs2652834	G	0.014	0.042	0.740	-0.011	0.020	0.590	-0.006	0.018	0.724	-+	0.591
LIPC	15	rs1532085	G	-0.074	0.033	0.027	-0.008	0.016	0.590	-0.021	0.014	0.153	--	0.072
CETP	16	rs3764261	C	0.009	0.034	0.800	0.053	0.017	0.002	0.044	0.015	0.004	++	0.247
CMIP	16	rs2925979	C	0.079	0.037	0.032	-0.016	0.017	0.360	0.001	0.015	0.971	-+	0.020
CTF1	16	rs11649653	C	0.015	0.034	0.670	0.032	0.016	0.052	0.029	0.015	0.046	++	0.651
HPR	16	rs2000999	G	0.000	0.042	1.000	-0.046	0.020	0.021	-0.038	0.018	0.038	0	0.323
LCAT	16	rs16942887	G	0.006	0.052	0.910	0.003	0.024	0.910	0.004	0.022	0.871	++	0.958
ABCA8	17	rs4148008	C	0.016	0.036	0.650	-0.022	0.017	0.200	-0.015	0.015	0.327	+-	0.340
OSBPL7	17	rs7206971	G	-0.019	0.032	0.550	-0.030	0.015	0.056	-0.028	0.014	0.039	--	0.756
PGS1	17	rs4129767	G	-0.024	0.032	0.460	-0.044	0.016	0.005	-0.040	0.014	0.005	--	0.576
STARD3	17	rs11869286	C	-0.010	0.034	0.760	-0.019	0.016	0.260	-0.017	0.015	0.230	--	0.811
LIPG	18	rs7241918	T	0.023	0.042	0.590	-0.027	0.020	0.190	-0.018	0.018	0.325	+-	0.282
MC4R	18	rs12967135	G	-0.002	0.039	0.960	-0.032	0.018	0.080	-0.027	0.016	0.102	--	0.485
ANGPTL4	19	rs7255436	A	0.038	0.033	0.240	0.007	0.016	0.650	0.013	0.014	0.370	++	0.398
APOE	19	rs439401	C	0.040	0.034	0.240	0.023	0.016	0.160	0.026	0.015	0.072	++	0.651
APOE	19	rs4420638	A	-0.219	0.048	0.000	-0.144	0.022	5.70×10^{-11}	-0.157	0.020	4.12×10^{-15}	--	0.156
CILP2	19	rs10401969	T	0.193	0.061	0.001	0.121	0.030	4.30×10^{-05}	0.135	0.027	5.29×10^{-07}	++	0.290
FLJ36070	19	rs492602	G	0.057	0.033	0.081	0.054	0.016	0.001	0.055	0.014	0.000	++	0.935
LDLR	19	rs6511720	G	0.033	0.051	0.520	0.174	0.025	2.70×10^{-12}	0.147	0.022	6.39×10^{-11}	++	0.013
LILRA3	19	rs386000	G	-0.001	0.039	0.990	0.004	0.019	0.810	0.003	0.017	0.859	-+	0.908
LOC55908	19	rs737337	T	0.043	0.063	0.490	0.022	0.030	0.460	0.026	0.027	0.339	++	0.763
ERGIC3	20	rs2277862	C	-0.047	0.045	0.300	0.033	0.023	0.137	0.016	0.021	0.422	-+	0.113
MAFB	20	rs2902940	A	0.060	0.035	0.084	0.010	0.017	0.570	0.020	0.015	0.201	++	0.199
PLTP	20	rs6065906	T	0.039	0.043	0.360	-0.005	0.020	0.810	0.003	0.018	0.876	+-	0.354
TOP1	20	rs6029526	T	-0.059	0.032	0.067	-0.014	0.016	0.360	-0.023	0.014	0.108	--	0.209
PLA2G6	22	rs5756931	T	-0.035	0.033	0.290	-0.006	0.016	0.720	-0.012	0.014	0.424	--	0.429
UBE2L3	22	rs181362	C	-0.061	0.042	0.145	0.024	0.020	0.230	0.008	0.018	0.646	-+	0.068

Numbers in ‘Beta’ and ‘SE’ columns are in standard deviation (SD) unit. The SD unit for adolescents and adults are 0.658 and 0.912 respectively.

Table S7. Heterogeneity test between adolescents and adults in triglycerides in 98 SNPs examined.

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
ANGPTL3	1	rs2131925	T	0.072	0.034	0.033	0.056	0.016	0.001	0.059	0.015	4.73×10^{-05}	++	0.670
EVI5	1	rs7515577	A	0.003	0.042	0.940	-0.026	0.019	0.170	-0.021	0.017	0.224	+-	0.529
GALNT2	1	rs4846914	A	-0.031	0.033	0.350	-0.070	0.016	7.20×10^{-06}	-0.063	0.014	1.38×10^{-05}	--	0.288
IRF2BP2	1	rs514230	T	0.034	0.032	0.290	-0.023	0.015	0.128	-0.013	0.014	0.349	+-	0.107
LDLRAP1	1	rs12027135	T	0.023	0.032	0.470	-0.008	0.015	0.600	-0.002	0.014	0.859	+-	0.380
MOSC1	1	rs2642442	T	-0.017	0.035	0.630	-0.025	0.017	0.134	-0.024	0.015	0.125	--	0.837
PABPC4	1	rs4660293	A	-0.035	0.038	0.360	-0.026	0.019	0.160	-0.028	0.017	0.102	--	0.832
PCSK9	1	rs2479409	A	0.069	0.038	0.068	-0.003	0.018	0.860	0.010	0.016	0.531	+-	0.087
SORT1	1	rs629301	T	0.036	0.038	0.350	0.019	0.019	0.310	0.022	0.017	0.188	++	0.689
ZNF648	1	rs1689800	A	0.029	0.034	0.390	-0.008	0.016	0.610	-0.001	0.015	0.929	+-	0.325
ABCG5/8	2	rs4299376	T	-0.031	0.035	0.370	-0.005	0.016	0.760	-0.010	0.015	0.514	--	0.499
APOB	2	rs1042034	T	0.061	0.041	0.130	0.064	0.019	0.001	0.064	0.017	0.000	++	0.947
APOB	2	rs1367117	G	0.027	0.035	0.430	-0.020	0.017	0.230	-0.011	0.015	0.471	+-	0.227
COBLL1	2	rs10195252	T	0.010	0.032	0.750	0.032	0.016	0.040	0.028	0.014	0.054	++	0.539
COBLL1	2	rs12328675	T	0.085	0.046	0.064	0.052	0.023	0.025	0.059	0.021	0.004	++	0.521
GCKR	2	rs1260326	C	-0.108	0.033	0.0009	-0.079	0.016	3.70×10^{-07}	-0.085	0.014	4.34×10^{-09}	--	0.429
IRS1	2	rs2972146	T	-0.003	0.034	0.930	0.043	0.016	0.007	0.035	0.015	0.017	-+	0.221
MSL2L1	3	rs645040	T	0.033	0.038	0.390	0.053	0.018	0.004	0.049	0.016	0.002	++	0.634
RAF1	3	rs2290159	G	-0.014	0.038	0.710	0.005	0.018	0.770	0.002	0.016	0.926	-+	0.651
KLHL8	4	rs442177	T	0.066	0.033	0.042	-0.006	0.016	0.700	0.008	0.014	0.593	+-	0.050
SLC39A8	4	rs13107325	C	-0.059	0.058	0.310	-0.111	0.026	2.60×10^{-05}	-0.102	0.024	1.62×10^{-05}	--	0.413
ARL15	5	rs6450176	G	-0.089	0.038	0.018	-0.004	0.018	0.810	-0.020	0.016	0.229	--	0.043
HMGCR	5	rs12916	T	-0.001	0.033	0.990	-0.004	0.016	0.790	-0.003	0.014	0.812	--	0.935
MAP3K1	5	rs9686661	C	-0.067	0.040	0.094	-0.075	0.019	9.30×10^{-05}	-0.074	0.017	1.83×10^{-05}	--	0.857
TIMD4	5	rs6882076	C	0.089	0.034	0.009	0.036	0.016	0.024	0.046	0.015	0.002	++	0.158
C6orf106	6	rs2814944	G	-0.054	0.044	0.220	0.005	0.021	0.820	-0.006	0.019	0.754	-+	0.226
C6orf106	6	rs2814982	C	-0.147	0.055	0.008	-0.001	0.026	0.980	-0.028	0.024	0.239	--	0.016
CITED2	6	rs605066	T	-0.030	0.033	0.370	-0.036	0.016	0.022	-0.035	0.014	0.015	--	0.870
FRK	6	rs9488822	A	-0.023	0.033	0.500	-0.014	0.016	0.390	-0.016	0.014	0.275	--	0.806
HFE	6	rs1800562	G	-0.018	0.062	0.770	0.015	0.029	0.610	0.009	0.026	0.730	-+	0.630
HLA	6	rs2247056	C	0.005	0.034	0.890	0.044	0.017	0.009	0.036	0.015	0.017	++	0.305
HLA	6	rs3177928	G	0.029	0.045	0.520	0.020	0.021	0.340	0.022	0.019	0.256	++	0.856
LPA	6	rs1084651	G	0.005	0.043	0.920	0.029	0.021	0.160	0.024	0.019	0.196	++	0.616

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
LPA	6	rs1564348	T	-0.018	0.042	0.660	0.013	0.021	0.540	0.007	0.019	0.717	-+	0.509
MYLIP	6	rs3757354	C	0.084	0.040	0.036	-0.029	0.019	0.131	-0.008	0.017	0.633	+-	0.011
DNAH11	7	rs12670798	T	0.005	0.038	0.890	0.003	0.018	0.860	0.003	0.016	0.836	++	0.962
KLF14	7	rs4731702	C	0.005	0.032	0.870	0.043	0.015	0.005	0.036	0.014	0.008	++	0.282
MLXIPL	7	rs17145738	C	0.145	0.051	0.004	0.121	0.024	4.00×10^{-07}	0.125	0.022	7.82×10^{-09}	++	0.670
TYW1B	7	rs13238203	C	0.219	0.099	0.027	0.029	0.043	0.490	0.059	0.039	0.134	++	0.078
CYP7A1	8	rs2081687	C	-0.061	0.034	0.074	-0.029	0.016	0.072	-0.035	0.015	0.016	--	0.394
LPL	8	rs12678919	A	0.137	0.052	0.009	0.190	0.025	3.70×10^{-14}	0.180	0.023	1.34×10^{-15}	++	0.358
NAT2	8	rs1495741	A	-0.042	0.039	0.290	-0.029	0.018	0.115	-0.031	0.016	0.056	--	0.762
PINX1	8	rs11776767	G	-0.001	0.033	0.970	-0.023	0.016	0.150	-0.019	0.014	0.191	--	0.549
PLEC1	8	rs11136341	A	-0.007	0.034	0.840	-0.001	0.016	0.930	-0.002	0.015	0.885	--	0.873
PPP1R3B	8	rs9987289	G	-0.090	0.058	0.123	-0.043	0.027	0.106	-0.051	0.025	0.036	--	0.463
TRIB1	8	rs2954029	A	0.077	0.032	0.017	0.085	0.015	2.50×10^{-08}	0.084	0.014	7.64×10^{-10}	++	0.821
TRPS1	8	rs2293889	G	0.036	0.033	0.260	0.009	0.015	0.570	0.014	0.014	0.319	++	0.456
TRPS1	8	rs2737229	A	0.013	0.034	0.700	0.038	0.017	0.026	0.033	0.015	0.030	++	0.511
ABCA1	9	rs1883025	C	0.055	0.036	0.130	0.030	0.018	0.088	0.035	0.016	0.030	++	0.535
TTC39B	9	rs581080	C	-0.035	0.043	0.410	0.013	0.020	0.530	0.005	0.018	0.806	-+	0.312
CYP26A1	10	rs2068888	G	-0.014	0.031	0.660	0.034	0.015	0.029	0.025	0.014	0.065	-+	0.163
GPAM	10	rs2255141	G	-0.014	0.036	0.710	0.027	0.017	0.121	0.020	0.015	0.204	-+	0.303
JMJD1C	10	rs10761731	A	0.012	0.032	0.700	0.018	0.016	0.240	0.017	0.014	0.240	++	0.867
AMPD3	11	rs2923084	A	-0.007	0.043	0.870	-0.037	0.020	0.061	-0.032	0.018	0.081	--	0.527
APOA1	11	rs964184	C	-0.240	0.049	1.20×10^{-06}	-0.291	0.023	2.10×10^{-37}	-0.282	0.021	9.80×10^{-42}	--	0.346
FADS1-2-3	11	rs174546	C	-0.026	0.035	0.460	-0.064	0.016	6.30×10^{-05}	-0.057	0.015	7.92×10^{-05}	--	0.323
LRP4	11	rs3136441	T	0.019	0.049	0.700	0.072	0.022	0.001	0.063	0.020	0.002	++	0.324
SPTY2D1	11	rs10128711	C	-0.022	0.036	0.540	0.035	0.017	0.042	0.025	0.015	0.109	-+	0.152
ST3GAL4	11	rs11220462	G	0.041	0.048	0.390	-0.010	0.022	0.670	-0.001	0.020	0.954	+-	0.334
UBASH3B	11	rs7941030	T	0.025	0.033	0.450	-0.008	0.016	0.610	-0.002	0.014	0.905	+-	0.368
BRAP	12	rs11065987	A	-0.020	0.032	0.540	-0.029	0.016	0.059	-0.027	0.014	0.057	--	0.801
HNF1A	12	rs1169288	A	-0.085	0.034	0.012	-0.009	0.017	0.600	-0.024	0.015	0.112	--	0.046
LRP1	12	rs11613352	C	0.078	0.038	0.039	0.041	0.018	0.021	0.048	0.016	0.003	++	0.379
MVK	12	rs7134594	T	0.014	0.032	0.660	-0.002	0.015	0.880	0.001	0.014	0.948	+-	0.651
PDE3A	12	rs7134375	C	-0.015	0.032	0.650	0.022	0.015	0.147	0.015	0.014	0.259	-+	0.295
SBNO1	12	rs4759375	C	-0.136	0.068	0.046	0.011	0.032	0.740	-0.016	0.029	0.589	-+	0.050
SCARB1	12	rs838880	T	-0.026	0.035	0.470	0.013	0.017	0.460	0.006	0.015	0.716	-+	0.316

				Within Adolescent			Within Adult			Adolescent + Adult				
Locus	Chr	SNP	Ref Allele	Beta	SE	P-value	Beta	SE	P-value	Beta	SE	P-value	Direction	Heterogeneity p-value
ZNF664	12	rs4765127	G	0.024	0.034	0.480	0.067	0.016	3.10×10^{-05}	0.059	0.015	4.32×10^{-05}	++	0.253
NYNRIN	14	rs8017377	G	-0.028	0.032	0.390	0.008	0.015	0.600	0.002	0.014	0.911	-+	0.308
CAPN3	15	rs2412710	G	-0.053	0.120	0.660	-0.071	0.058	0.210	-0.068	0.052	0.196	--	0.893
FRMD5	15	rs2929282	A	-0.172	0.080	0.033	-0.044	0.039	0.260	-0.069	0.035	0.050	--	0.150
LACTB	15	rs2652834	G	-0.062	0.041	0.134	0.004	0.020	0.830	-0.009	0.018	0.629	-+	0.148
LIPC	15	rs1532085	G	-0.041	0.033	0.210	-0.062	0.016	6.30×10^{-05}	-0.058	0.014	5.61×10^{-05}	--	0.567
CETP	16	rs3764261	C	0.046	0.034	0.170	0.037	0.016	0.024	0.039	0.015	0.008	++	0.811
CMIP	16	rs2925979	C	0.023	0.036	0.530	-0.022	0.017	0.190	-0.014	0.015	0.370	+-	0.258
CTF1	16	rs11649653	C	0.028	0.034	0.420	0.027	0.016	0.090	0.027	0.015	0.060	++	0.979
HPR	16	rs2000999	G	0.061	0.041	0.139	-0.009	0.020	0.640	0.005	0.018	0.804	+-	0.125
LCAT	16	rs16942887	G	-0.082	0.052	0.112	0.039	0.024	0.101	0.018	0.022	0.415	-+	0.035
ABCA8	17	rs4148008	C	0.031	0.035	0.370	0.008	0.017	0.640	0.012	0.015	0.418	++	0.554
OSBPL7	17	rs7206971	G	0.017	0.032	0.590	0.022	0.015	0.145	0.021	0.014	0.120	++	0.888
PGS1	17	rs4129767	G	-0.008	0.032	0.790	-0.006	0.015	0.700	-0.006	0.014	0.640	--	0.955
STARD3	17	rs11869286	C	-0.021	0.033	0.530	-0.014	0.016	0.380	-0.015	0.014	0.287	--	0.849
LIPG	18	rs7241918	T	0.027	0.041	0.510	-0.021	0.020	0.280	-0.012	0.018	0.513	+-	0.293
MC4R	18	rs12967135	G	-0.017	0.039	0.660	-0.047	0.018	0.008	-0.042	0.016	0.011	--	0.485
ANGPTL4	19	rs7255436	A	0.027	0.032	0.400	-0.046	0.015	0.003	-0.033	0.014	0.016	+-	0.039
APOE	19	rs439401	C	0.112	0.034	0.0008	0.076	0.016	1.90×10^{-06}	0.083	0.015	1.19×10^{-08}	++	0.338
APOE	19	rs4420638	A	-0.094	0.047	0.045	-0.093	0.022	1.50×10^{-05}	-0.093	0.020	2.92×10^{-06}	--	0.985
CILP2	19	rs10401969	T	0.153	0.060	0.011	0.055	0.029	0.056	0.074	0.026	0.005	++	0.141
FLJ36070	19	rs492602	G	-0.002	0.032	0.950	0.026	0.015	0.087	0.021	0.014	0.123	-+	0.428
LDLR	19	rs6511720	G	-0.060	0.050	0.230	-0.013	0.024	0.590	-0.022	0.022	0.314	--	0.397
LILRA3	19	rs386000	G	0.011	0.039	0.770	0.035	0.019	0.062	0.030	0.017	0.075	++	0.580
LOC55908	19	rs737337	T	0.016	0.062	0.800	-0.010	0.029	0.720	-0.005	0.026	0.839	+-	0.704
ERGIC3	20	rs2277862	C	-0.052	0.044	0.240	0.002	0.022	0.920	-0.009	0.020	0.655	-+	0.272
MAFB	20	rs2902940	A	-0.018	0.034	0.590	0.033	0.016	0.042	0.024	0.015	0.101	-+	0.175
PLTP	20	rs6065906	T	-0.022	0.043	0.600	-0.055	0.019	0.005	-0.050	0.017	0.004	--	0.483
TOP1	20	rs6029526	T	-0.015	0.032	0.640	-0.012	0.015	0.420	-0.013	0.014	0.356	--	0.932
PLA2G6	22	rs5756931	T	0.037	0.033	0.260	0.000	0.016	0.990	0.007	0.014	0.625	0	0.313
UBE2L3	22	rs181362	C	-0.041	0.041	0.320	0.024	0.020	0.220	0.012	0.018	0.522	-+	0.154

Numbers in ‘Beta’ and ‘SE’ columns are in standard deviation (SD) unit. The SD unit for adolescents and adults are 0.183 and 0.216 respectively.

Table S8. The locus/phenotype combinations of EN-others heterogeneity test reported Table2.

						EN			Others			EN+Others				
Trait	**Locus**	**Chr**	**SNP**	**Allele/ MAF**	**Ref Allele**	**Beta**	**SE**	**P-value**	**Beta**	**SE**	**P-value**	**Beta**	**SE**	**P-value**	**Dire ction**	**Het p-value**
HDL	PABPC4	1	rs4660293	A/G/0.25	A	0.053	0.059	0.370	0.064	0.020	0.0011	0.063	0.019	0.0009	++	0.860
	ZNF664	12	rs4765127	G/T/0.34	G	–0.133	0.052	0.010	–0.079	0.017	3.80×10^{-06}	–0.084	0.016	1.87×10^{-07}	--	0.324
	MVK	12	rs7134594	T/C/0.47	T	0.081	0.048	0.091	0.000	0.016	1.00	0.008	0.015	0.059	0	0.109
	CETP	16	rs3764261	C/A/0.32	C	–0.307	0.052	3.90×10^{-09}	–0.236	0.017	8.00×10^{-43}	–0.243	0.016	4.69×10^{-51}	--	0.194
	MC4R	18	rs12967135	G/A/0.24	G	–0.045	0.059	0.450	0.040	0.019	0.034	0.032	0.018	0.077	+-	0.170
LDL	LDLR	19	rs6511720	G/T/0.11	G	0.212	0.084	0.0121	0.173	0.026	2.40×10^{-11}	0.176	0.025	1.23×10^{-12}	++	0.657

“Allele/MAF” listed are: major allele, minor allele frequency (MAF). Numbers in “Beta” columns are in SD units, modelled as additive effect of the reference allele.