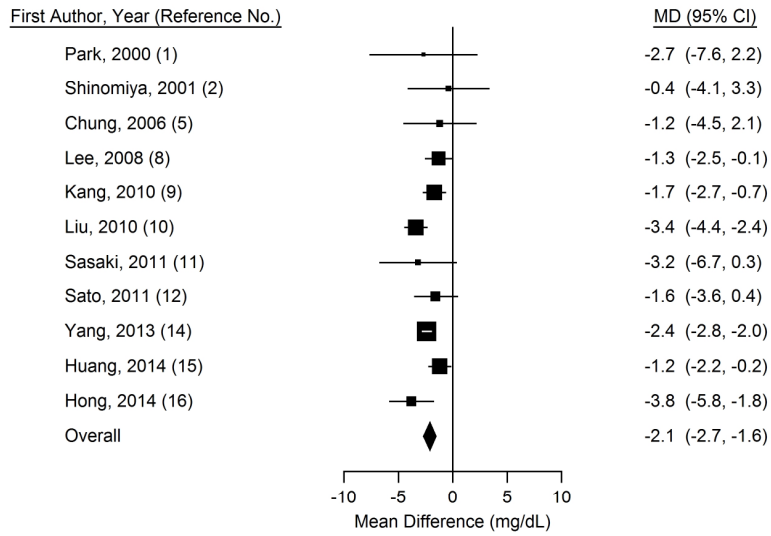
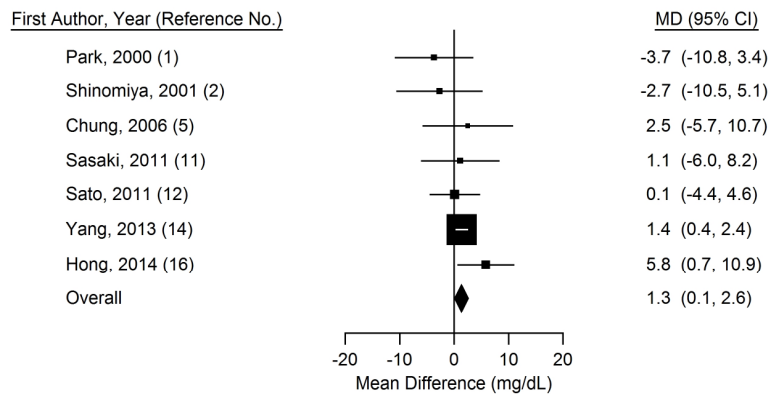


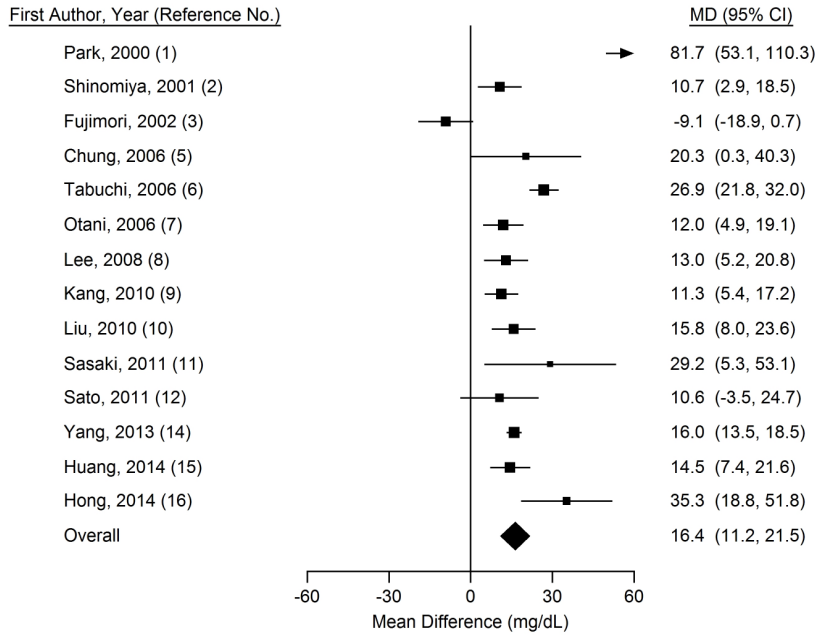
**Web Figure 1.** Forest plot of the mean difference in high-density lipoprotein cholesterol (mean in adenoma cases – mean in adenoma-free controls), Asia, 2000-2014. Squares represent study-specific estimates and are proportional in size to the weight from random-effects meta-analysis (larger squares indicate more weight). Horizontal lines represent 95% confidence intervals (CI).  $I^2$  (CI) = 46% (0%, 73%) and  $z = -7.40$  ( $P < 0.001$ ).



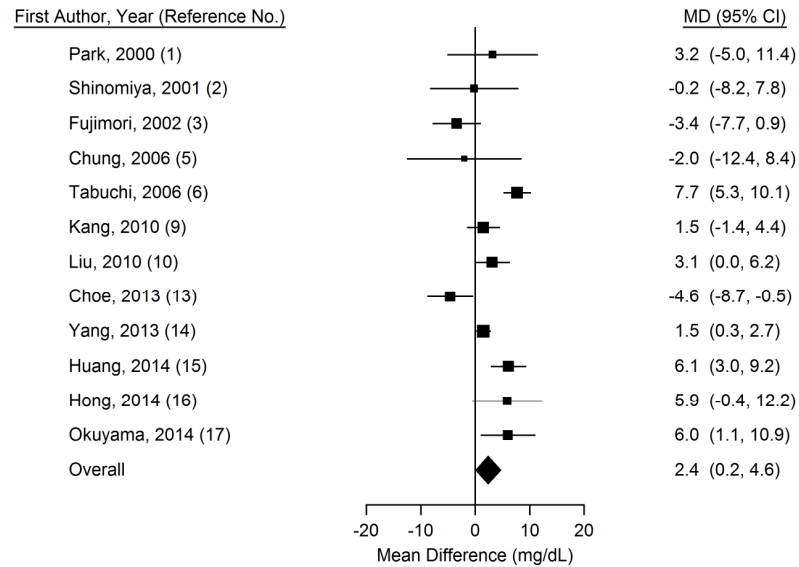
**Web Figure 2.** Forest plot of the mean difference in low-density lipoprotein cholesterol (mean in adenoma cases – mean in adenoma-free controls), Asia, 2000-2014. Squares represent study-specific estimates and are proportional in size to the weight from random-effects meta-analysis (larger squares indicate more weight). Horizontal lines represent 95% confidence intervals (CI).  $I^2$  (CI) = 5% (0%, 72%) and  $z = 2.08$  ( $P = 0.04$ ).



**Web Figure 3.** Forest plot of the mean difference in triglycerides (mean in adenoma cases – mean in adenoma-free controls), Asia, 2000-2014. Squares represent study-specific estimates and are proportional in size to the weight from random-effects meta-analysis (larger squares indicate more weight). Horizontal lines represent 95% confidence intervals (CI).  $I^2$  (CI) = 83% (73%, 89%) and  $z = 6.25$  ( $P < 0.001$ ).



**Web Figure 4.** Forest plot of the mean difference in total cholesterol (mean in adenoma cases – mean in adenoma-free controls), Asia, 2000-2014. Squares represent study-specific estimates and are proportional in size to the weight from random-effects meta-analysis (larger squares indicate more weight). Horizontal lines represent 95% confidence intervals (CI).  $I^2$  (CI) = 78% (62%, 87%) and  $z = 2.13$  ( $P = 0.04$ ).



**Web Table 1.** Study-specific means and standard deviations (SD) for cholesterol values at time of colonoscopy stratified by colorectal adenoma case-control status, Asia, 2000-2014

First Author, Year (Reference No.)	HDL (mg/dL)				LDL (mg/dL)				TG (mg/dL)				TC (mg/dL)			
	Controls		Cases		Controls		Cases		Controls		Cases		Controls		Cases	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Park, 2000 (1)	53	25	50	15	109	33	105	206	148	85	229	147	187	35	190	34
Shinomiya, 2001 (2)	59	15	58	21	117	32	114	46	113	42	124	38	200	33	200	46
Fujimori, 2002 (3)	--	--	--	--	--	--	--	--	152	80	142	73	200	35	197	33
Morita, 2005 (4)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chung, 2006 (5)	48	12	47	13	117	30	119	31	131	69	151	79	200	37	198	40
Tabuchi, 2006 (6)	--	--	--	--	--	--	--	--	109	71	136	82	200	34	207	29
Otani, 2006 (7)	--	--	--	--	--	--	--	--	101	71	113	71	--	--	--	--
Lee, 2008 (8)	52	12	50	12	--	--	--	--	132	78	145	87	--	--	--	--
Kang, 2010 (9)	53	13	51	13	--	--	--	--	113	68	125	74	195	35	197	34
Liu, 2010 (10)	45	13	42	12	--	--	--	--	115	89	131	97	199	38	202	40
Sasaki, 2011 (11)	63	16	60	16	131	33	132	30	136	112	165	105	--	--	--	--
Sato, 2011 (12)	59	15	57	14	130	32	130	32	163	106	174	97	--	--	--	--
Choe, 2013 (13)	--	--	--	--	--	--	--	--	--	--	--	--	198	36	193	35
Yang, 2013 (14)	55	12	52	15	124	35	126	30	128	81	144	89	196	35	198	37
Huang, 2014 (15)	48	13	46	13	--	--	--	--	129	81	143	89	197	37	203	38
Hong, 2014 (16)	52	14	48	12	113	32	119	34	117	85	153	118	187	38	193	43
Okuyama, 2014 (17)	--	--	--	--	--	--	--	--	--	--	--	--	220	34	226	38

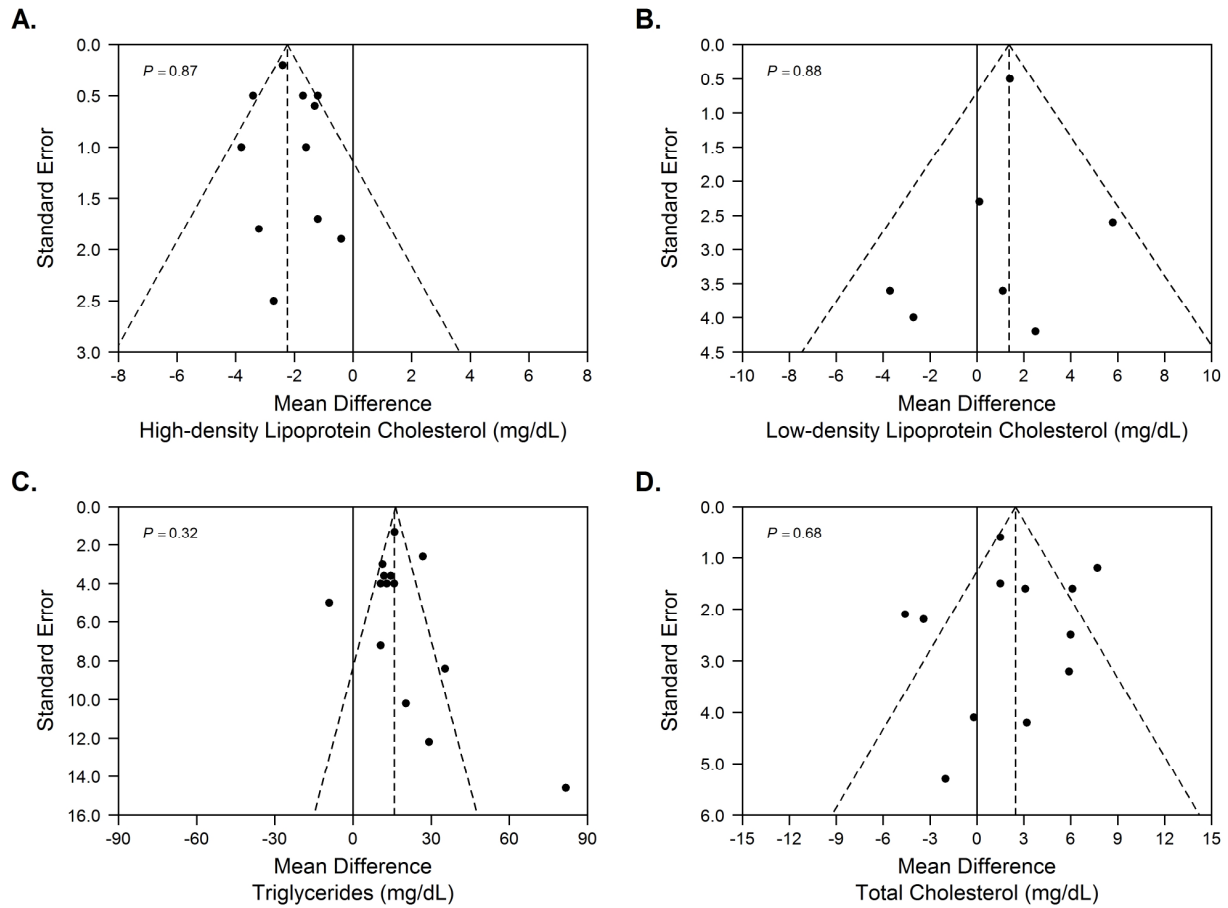
Abbreviations: HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; SD, standard deviation; TC, total cholesterol; TG, triglycerides.

**Web Table 2.** Stratified random-effects meta-analysis for mean difference (mean in cases – mean in controls) in blood lipid measurements between adenoma cases and adenoma-free controls, Asia, 2000-2014

Characteristic	HDL (mg/dL)				LDL (mg/dL)				TG (mg/dL)				TC (mg/dL)			
	N	MD	95% CI	P	N	MD	95% CI	P	N	MD	95% CI	P	N	MD	95% CI	P
<b>All studies</b>	11	-2.1	-2.7, -1.6	<0.001	7	1.3	0.8, 2.6	0.04	14	16.4	11.2, 21.5	<0.001	12	2.4	0.2, 4.6	0.04
<b>Country</b>																
China/Taiwan	2	-2.3	-4.5, -0.1	0.04	0	--		--	2	15.1	9.8, 20.3	<0.001	2	4.6	1.7, 7.5	0.002
Japan	3	-1.7	-3.3, -0.1	0.03	3	-0.2	-3.6, 3.2	0.91	6	12.6	1.3, 23.9	0.03	4	2.8	-3.1, 8.7	0.35
Korea	6	-2.1	-2.7, -1.5	<0.001	4	1.7	-1.1, 4.6	0.23	6	21.6	13.1, 30.0	<0.001	6	0.8	-1.6, 3.2	0.50
<b>Year of colonoscopy (mid-point)</b>																
Before 2005	3	-1.2	-3.4, 1.0	0.28	3	-1.6	-6.0, 2.8	0.48	6	19.5	5.7, 33.3	<0.001	6	2.4	-2.3, 7.1	0.32
2005 or after	8	-2.2	-2.8, -1.6	<0.001	8	1.5	0.3, 2.8	0.01	8	15.2	12.1, 18.3	<0.001	6	2.1	-0.3, 4.5	0.08
<b>Sample size</b>																
Less than 500 adenoma cases	6	-2.4	-3.5, -1.3	<0.001	6	1.0	-1.9, 3.8	0.51	6	28.3	12.4, 44.2	<0.001	5	4.0	0.9, 7.1	0.01
500 or more adenoma cases	5	-2.1	-2.8, -1.3	<0.001	1	1.4	0.4, 2.4	0.005	8	13.2	7.9, 18.6	<0.001	7	2.0	-0.8, 4.8	0.16
<b>Study design</b>																
Unadjusted mean and unmatched design	7	-2.3	-3.0, -1.6	<0.001	4	1.5	0.3, 2.8	0.01	8	18.5	13.7, 23.4	<0.001	6	4.8	2.1, 7.6	<0.001
Adjusted mean or matched design	4	-1.6	-2.5, -0.7	<0.001	3	-1.6	-6.0, 2.8	0.48	6	15.1	3.8, 26.4	0.009	6	-1.2	-3.9, 1.5	0.39
<b>Excluded personal history of colorectal polyps</b>																
Yes	8	-2.1	-2.9, -1.3	<0.001	4	1.6	-1.9, 5.0	0.38	10	12.4	7.3, 17.6	<0.001	7	1.3	-1.9, 4.4	0.43
No	3	-2.4	-2.8, -2.0	<0.001	3	1.3	0.0, 2.5	0.05	4	28.7	16.1, 41.2	<0.001	5	4.0	0.1, 7.9	0.05
<b>Excluded personal history of colorectal cancer</b>																
Yes	11	-2.1	-2.7, -1.6	<0.001	7	1.3	0.8, 2.6	0.04	13	18.0	13.4, 22.4	<0.001	10	2.7	0.3, 5.0	0.03
No	0	--	--	--	0	--	--	--	1	-9.1	-18.9, 0.7	0.07	2	1.2	-8.0, 10.4	0.79

Abbreviations: CI, confidence interval; HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; MD, mean difference; TC, total cholesterol; TG, triglycerides.

**Web Figure 5.** Funnel plots for the mean difference (mean in adenoma cases – mean in adenoma-free controls) for high-density lipoprotein cholesterol (A), low-density lipoprotein cholesterol (B), triglycerides (C), and total cholesterol (D), Asia, 2000-2014. *P*-value shown is for non-parametric test of asymmetry.



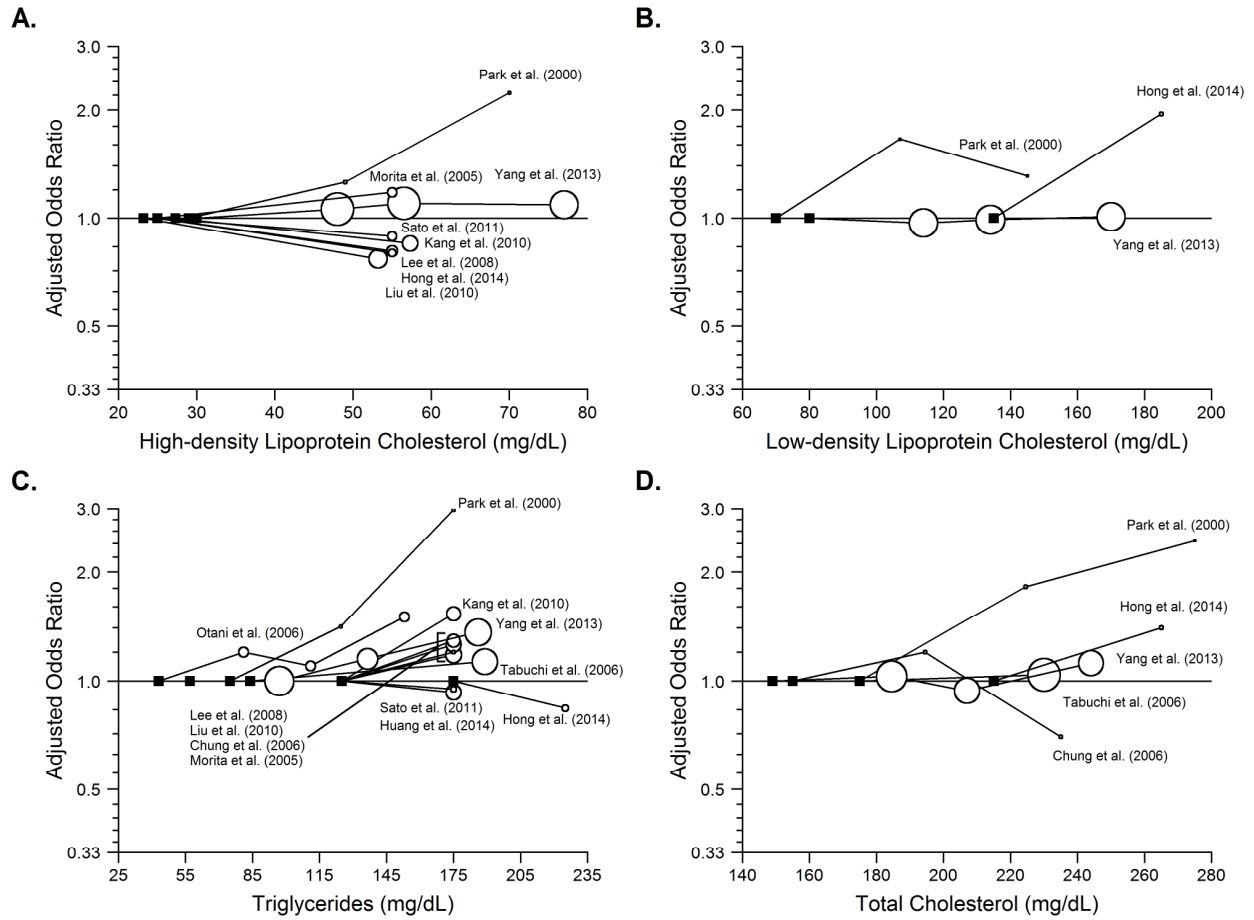
**Web Table 3.** Leave-one-out random-effects meta-analysis for mean differences (mean in cases – mean in controls) in blood lipid measurements between adenoma cases and adenoma-free controls, Asia, 2000-2014

First Author, Year (Reference No.)	HDL (mg/dL)			LDL (mg/dL)			TG (mg/dL)			TC (mg/dL)		
	MD	95% CI	P	MD	95% CI	P	MD	95% CI	P	MD	95% CI	P
None	-2.1	-2.7, -1.6	<0.001	1.3	0.8, 2.6	0.04	16.4	11.2, 21.5	<0.001	2.4	0.2, 4.6	0.04
Park, 2000 (1)	-2.1	-2.7, -1.5	<0.001	1.4	0.5, 2.4	0.002	14.6	10.0, 19.2	<0.001	2.3	0.0, 4.7	0.05
Shinomiya, 2001 (2)	-2.2	-2.7, -1.6	<0.001	1.4	0.2, 2.7	0.03	17.0	11.5, 22.5	<0.001	2.5	0.2, 4.8	0.03
Fujimori, 2002 (3)	--	--	--	--	--	--	17.9	13.4, 22.4	<0.001	3.0	0.7, 5.2	0.01
Morita, 2005 (4)	--	--	--	--	--	--	--	--	--	--	--	--
Chung, 2006 (5)	-2.1	-2.7, -1.6	<0.001	1.2	-0.6, 3.0	0.21	16.2	10.9, 21.5	<0.001	2.5	0.3, 4.8	0.03
Tabuchi, 2006 (6)	--	--	--	--	--	--	15.0	9.9, 20.1	<0.001	1.7	-0.3, 3.7	0.09
Otani, 2006 (7)	--	--	--	--	--	--	16.9	11.3, 22.5	<0.001	--	--	--
Lee, 2008 (8)	-2.2	-2.8, -1.6	<0.001	--	--	--	16.8	11.2, 22.4	<0.001	--	--	--
Kang, 2010 (9)	-2.2	-2.8, -1.6	<0.001	--	--	--	17.0	11.4, 22.7	<0.001	2.5	0.0, 5.0	0.05
Liu, 2010 (10)	-1.9	-2.4, -1.4	<0.001	--	--	--	16.6	11.0, 22.1	<0.001	2.3	-0.2, 4.8	0.07
Sasaki, 2011 (11)	-2.1	-2.7, -1.5	<0.001	1.2	-0.6, 3.1	0.20	16.0	10.7, 21.2	<0.001	--	--	--
Sato, 2011 (12)	-2.2	-2.8, -1.6	<0.001	1.4	-0.5, 3.3	0.16	16.8	11.4, 22.1	<0.001	--	--	--
Choe, 2013 (13)	--	--	--	--	--	--	--	--	--	3.1	1.0, 5.2	0.004
Yang, 2013 (14)	-2.0	-2.8, -1.3	<0.001	1.0	-1.9, 3.8	0.51	17.1	10.6, 23.6	<0.001	2.4	-0.3, 5.2	0.08
Huang, 2014 (15)	-2.3	-2.8, -1.7	<0.001	--	--	--	16.7	11.1, 22.3	<0.001	2.0	-0.4, 4.3	0.10
Hong, 2014 (16)	-2.0	-2.6, -1.5	<0.001	1.2	0.3, 2.1	0.01	15.3	10.2, 20.5	<0.001	2.1	-0.2, 4.5	0.07
Okuyama, 2014 (17)	--	--	--	--	--	--	--	--	--	2.1	-0.3, 4.4	0.08

Abbreviations: CI, confidence interval; HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; MD, mean difference; TC, total cholesterol; TG, triglycerides.



**Web Figure 6.** Adjusted odds ratios for adenomas according to high-density lipoprotein cholesterol (A), low-density lipoprotein cholesterol (B), triglycerides (C), and total cholesterol (D), Asia, 2000-2014. The size of the circle is proportional to the inverse variance of the estimate (larger is more precise).

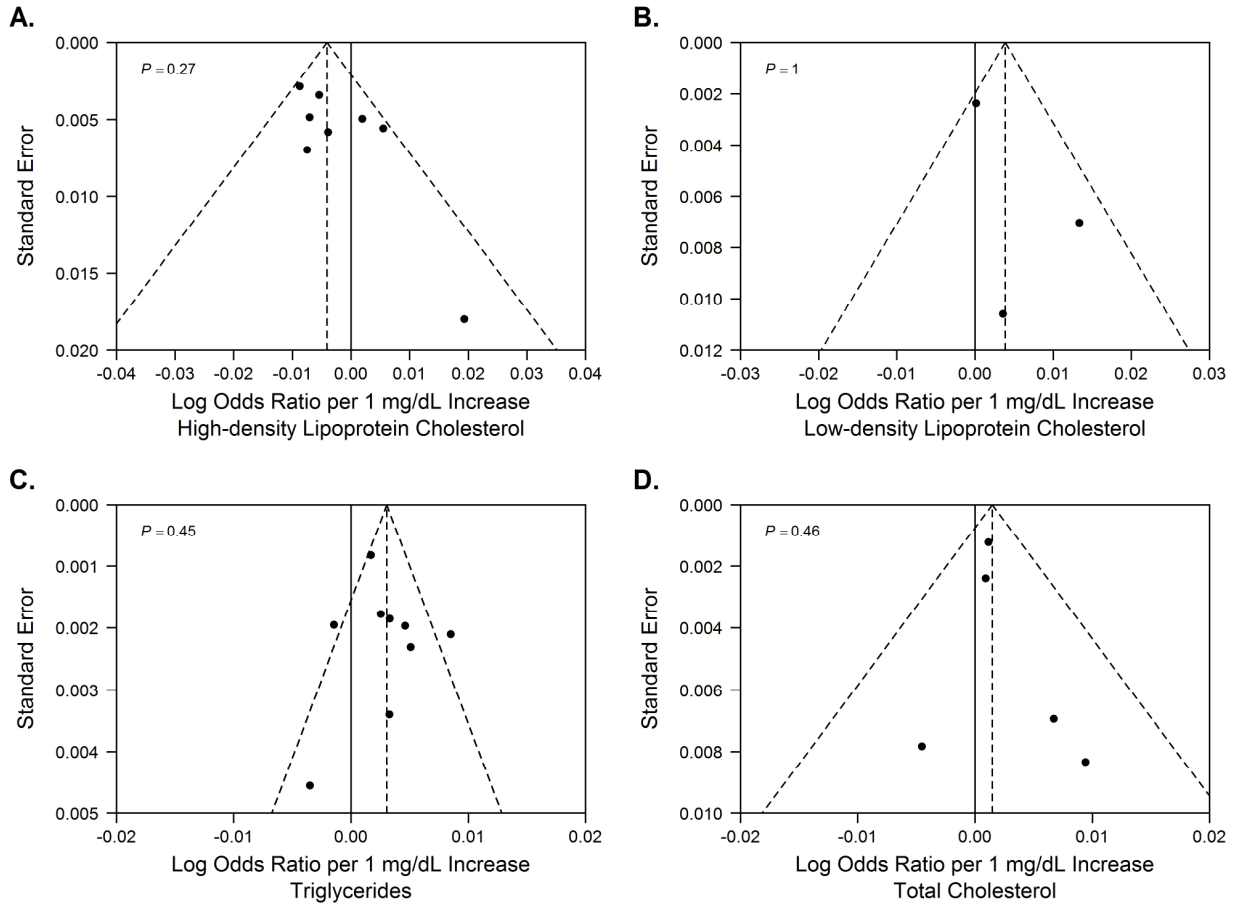


**Web Table 4.** Stratified random-effects meta-analysis for trend-estimated odds ratios of adenomas for blood lipid measurements, Asia, 2000-2014

Characteristic	HDL (+10 mg/dL)				LDL (+20 mg/dL)				TG (+40 mg/dL)				TC (+20 mg/dL)			
	N	OR	95% CI	P	N	OR	95% CI	P	N	OR	95% CI	P	N	OR	95% CI	P
<b>All studies</b>	8	0.96	0.92, 1.00	0.04	3	1.08	0.92, 1.28	0.36	12	1.13	1.05, 1.21	0.001	5	1.03	0.98, 1.07	0.23
<b>Country</b>																
China/Taiwan	1	0.92	0.87, 0.97	0.002	0	--	--	--	2	1.07	0.84, 1.35	0.60	0	--	--	--
Japan	2	1.01	0.92, 1.11	0.84	0	--	--	--	4	1.08	1.02, 1.15	0.006	1	1.02	0.98, 1.07	0.35
Korea	5	0.96	0.92, 1.00	0.08	3	1.08	0.92, 1.28	0.36	6	1.20	1.05, 1.37	0.008	4	1.03	0.95, 1.12	0.44
<b>Year of colonoscopy (mid-point)</b>																
Before 2005	2	1.07	0.96, 1.19	0.21	1	1.07	0.71, 1.63	0.36	5	1.09	1.03, 1.15	0.003	3	1.02	0.98, 1.07	0.32
2005 or after	6	0.94	0.91, 0.97	0.001	2	1.11	0.86, 1.42	0.43	7	1.12	1.00, 1.27	0.05	2	1.03	0.94, 1.13	0.49
<b>Sample size</b>																
Less than 500 adenoma cases	3	0.96	0.88, 1.05	0.39	2	1.23	0.98, 1.55	0.08	4	1.03	0.82, 1.29	0.81	3	1.17	0.83, 1.65	0.37
500 or more adenoma cases	5	0.96	0.92, 1.01	0.12	1	1.00	0.91, 1.10	0.95	8	1.14	1.05, 1.23	0.001	2	1.05	0.96, 1.14	0.31
<b>Study design</b>																
Crude OR only	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Covariate-adjusted OR	8	0.96	0.92, 1.00	0.04	3	1.08	0.92, 1.28	0.36	12	1.13	1.05, 1.21	0.001	5	1.03	0.98, 1.07	0.23
<b>Excluded personal history of colorectal polyps</b>																
Yes	6	0.95	0.91, 0.98	0.002	1	1.30	0.99, 1.72	0.06	8	1.13	1.02, 1.26	0.02	1	1.14	0.87, 1.50	0.33
No	2	1.03	0.94, 1.13	0.51	2	1.01	0.92, 1.10	0.89	4	1.08	1.02, 1.15	0.007	4	1.02	0.98, 1.07	0.29
<b>Excluded personal history of colorectal cancer</b>																
Yes	8	0.96	0.92, 1.00	0.04	3	1.08	0.92, 1.28	0.36	12	1.13	1.05, 1.21	0.001	5	1.03	0.98, 1.07	0.23
No	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--

Abbreviations: CI, confidence interval; HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; OR, odds ratio; TC, total cholesterol; TG, triglycerides.

**Web Figure 7.** Funnel plots for trend-estimated odds ratios of adenomas for high-density lipoprotein cholesterol (A), low-density lipoprotein cholesterol (B), triglycerides (C), and total cholesterol (D), Asia, 2000-2014. *P*-value shown is for non-parametric test of asymmetry.



**Web Table 5.** Leave-one-out random-effects meta-analysis for trend-estimated odds ratios of adenomas for blood lipid measurements, Asia, 2000-2014

First Author, Year (Reference No.)	HDL (+10 mg/dL)			LDL (+20 mg/dL)			TG (+40 mg/dL)			TC (+20 mg/dL)		
	OR	95% CI	P	OR	95% CI	P	OR	95% CI	P	OR	95% CI	P
None	0.96	0.92, 1.00	0.04	1.08	0.92, 1.28	0.36	1.13	1.05, 1.21	0.001	1.03	0.98, 1.07	0.23
Park, 2000 (1)	0.96	0.92, 0.99	0.02	1.05	0.93, 1.19	0.43	1.12	1.04, 1.20	0.002	1.05	0.96, 1.14	0.29
Shinomiya, 2001 (2)	--	--	--	--	--	--	--	--	--	--	--	--
Fujimori, 2002 (3)	--	--	--	--	--	--	--	--	--	--	--	--
Morita, 2005 (4)	0.94	0.91, 0.98	0.001	--	--	--	1.13	1.05, 1.21	0.004	--	--	--
Chung, 2006 (5)	--	--	--	--	--	--	1.13	1.05, 1.21	0.001	1.06	0.97, 1.15	0.20
Tabuchi, 2006 (6)	--	--	--	--	--	--	1.14	1.05, 1.24	0.003	1.07	0.90, 1.25	0.44
Otani, 2006 (7)	--	--	--	--	--	--	1.13	1.04, 1.21	0.002	--	--	--
Lee, 2008 (8)	0.97	0.92, 1.01	0.14	--	--	--	1.11	1.04, 1.20	0.004	--	--	--
Kang, 2010 (9)	0.97	0.92, 1.02	0.18	--	--	--	1.09	1.04, 1.15	0.001	--	--	--
Liu, 2010 (10)	0.97	0.93, 1.01	0.19	--	--	--	1.12	1.03, 1.21	0.005	--	--	--
Sasaki, 2011 (11)	--	--	--	--	--	--	--	--	--	--	--	--
Sato, 2011 (12)	0.96	0.92, 1.01	0.09	--	--	--	1.13	1.05, 1.22	0.001	--	--	--
Choe, 2013 (13)	--	--	--	--	--	--	--	--	--	--	--	--
Yang, 2013 (14)	0.95	0.92, 0.99	0.01	1.11	0.99, 1.24	0.08	1.13	1.04, 1.23	0.003	1.06	0.96, 1.16	0.25
Huang, 2014 (15)	--	--	--	--	--	--	1.15	1.07, 1.23	<0.001	--	--	--
Hong, 2014 (16)	0.96	0.92, 1.01	0.10	1.00	0.96, 1.05	0.89	1.14	1.06, 1.22	<0.001	1.05	0.96, 1.14	0.29
Okuyama, 2014 (17)	--	--	--	--	--	--	--	--	--	--	--	--

Abbreviations: CI, confidence interval; HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; OR, odds ratio; TC, total cholesterol; TG, triglycerides.

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