

Appendix

Table A1. Hazard ratios (95% CI) for first CVD event in South Asian groups compared to ethnic European groups in New Zealand and Norway- risk factors introduced in a different order than in the main analyses.

	Men		Women	
	Indian vs. European NZ	South Asians vs. Norwegians	Indian NZ vs. European NZ	South Asians vs. Norwegians
<i>N events/N</i>	1791/73308	436/7387	863/56126	264/8558
<i>Adjusted for</i>				
Age	1.75 (1.53-2.00)	1.92 (1.48-2.49)	1.42 (1.16-1.75)	1.87 (1.21-2.87)
Age, diabetes	1.48 (1.29-1.70)	1.64 (1.25-2.15)	1.15 (0.93-1.43)	1.52 (0.96-2.39)
Age, diabetes, SBP	1.56 (1.36-1.79)	1.76 (1.34-2.31)	1.19 (0.96-1.48)	1.49 (0.94-2.36)
Age, diabetes, SBP, smoking	1.63 (1.42-1.87)	1.78 (1.35-2.33)	1.39 (1.12-1.74)	2.00 (1.25-3.20)
Age, diabetes, SBP, smoking, TC/HDL ratio	1.64 (1.43-1.88)	1.57 (1.19-2.07)	1.39 (1.11-1.73)	1.76 (1.09-2.82)

Table A2. Hazard ratios (95% CI) for first CVD event in South Asian groups compared to ethnic European groups in New Zealand and Norway – adjusting for each risk factor in separate models with only age as covariate.

	Men		Women	
	Indian vs. European NZ	South Asians vs. Norwegians	Indian NZ vs. European NZ	South Asians vs. Norwegians
<i>N events/N</i>	1791/73308	436/7387	863/56126	264/8558
<i>Adjusted for</i>				
Age only	1.75 (1.53-2.00)	1.92 (1.48-2.49)	1.42 (1.16-1.75)	1.87 (1.21-2.87)
Age and diabetes only	1.48 (1.29-1.70)	1.64 (1.25-2.15)	1.15 (0.93-1.43)	1.52 (0.96-2.39)
Age and TC/HDL ratio only	1.77 (1.55-2.02)	1.66 (1.27-2.16)	1.41 (1.14-1.73)	1.52 (0.98-2.36)
Age and SBP only	1.84 (1.61-2.10)	2.04 (1.57-2.65)	1.47 (1.20-1.82)	1.84 (1.20-2.82)
Age and smoking only	1.84 (1.61-2.10)	2.46 (1.58-3.84)	1.67 (1.35-2.07)	1.94 (1.49-2.51)

Table A3. Age-adjusted hazard ratios for first CVD event after baseline for selected risk factors in men and women aged 30-74 years with no history of CVD, stratified by cohort, ethnicity and gender – with and without adjustment for medication at baseline.

MEN	N events/N*	SBP (10 mm/Hg)	SBP (10 mm/Hg) adjusted for BP medication	TC/HDL ratio (one unit)	TC/HDL ratio (one unit) adjusted for lipid lowering medication
<i>New Zealand cohort</i>		HR (95%CI)	HR (95%CI)	HR (95%CI)	HR (95%CI)
European men	1518/63316	1.15 (1.12-1.18)	1.14 (1.11-1.17)	1.20 (1.16-1.23)	1.20 (1.16-1.24)
Indian men	273/9997	1.05 (0.98-1.13)	1.03 (0.96-1.11)	1.08 (0.98-1.19)	1.10 (1.00-1.20)
<i>Norwegian cohort</i>					
Norwegian men	379/6385	1.15 (1.08-1.22)	1.13 (1.06-1.20)	1.22 (1.15-1.30)	1.23 (1.16-1.31)
South Asian men	79/1239	1.17 (1.01-1.35)	1.14 (0.98-1.32)	1.23 (1.05-1.42)	1.21 (1.04-1.42)
WOMEN	N events/N*	SBP(10 mm/Hg)	SBP (10 mm/Hg) adjusted for BP medication	TC/HDL ratio (one unit)	TC/HDL ratio (one unit) adjusted for lipid lowering medication
<i>New Zealand cohort</i>		HR (95%CI)		HR (95%CI)	
European women	757/49094	1.09 (1.05-1.13)	1.07 (1.03-1.12)	1.14 (1.09-1.21)	1.15 (1.09-1.21)
Indian women	106/7039	1.27 (1.16-1.39)	1.23 (1.12-1.36)	1.21 (1.03-1.41)	1.22 (1.04-1.42)
<i>Norwegian cohort</i>					
Norwegian women	259/8015	1.20 (1.12-1.28)	1.18 (1.11-1.26)	1.30 (1.19-1.43)	1.33 (1.21-1.46)
South Asian women	26/967	1.06 (0.86-1.30)	1.06 (0.85-1.31)	1.04 (0.77-1.39)	1.01 (0.75-1.37)

*The numbers of events and people included in the analyses may differ due to missing risk factor data. Few were missing in the NZ cohort. SBP, systolic blood pressure; TC, total cholesterol; HDL, high density lipoprotein.

Table A4. Hazard ratios (95% CI) for first CVD event in South Asian groups compared to ethnic European groups in New Zealand and Norway – with and without adjustment for medication at baseline.

	Men		Women	
	Indian vs. European NZ	South Asians vs. Norwegians	Indian NZ vs. European NZ	South Asians vs. Norwegians
N events/N	1791/73308	436/7387	863/56126	264/8558
Adjusted for				
Age, TC/HDL ratio, diabetes, SBP, smoking	1.64 (1.43-1.88)	1.57 (1.19-2.07)	1.39 (1.11-1.73)	1.76 (1.09-2.82)
Age, TC/HDL ratio, diabetes, SBP, smoking + medication use at baseline (antihypertensives and lipid lowering drugs)	1.62 (1.41-1.86)	1.53 (1.16-2.03)	1.37 (1.10-1.71)	1.71 (1.05-2.76)

HDL, high density lipoprotein; NZ, New Zealand; SBP, systolic blood pressure; TC, Total cholesterol. All had complete information on the risk factors

Table A5. Crude rates and age-adjusted HR of CVD by risk factors, Norwegian and South Asian men from the Norwegian cohort.

	Norwegian				South Asian			
	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR (95% CI)	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR (95% CI)
Total	6385	379	703 (636-778)		1239	79	833 (668-1039)	
Diabetes								
No	6167	339	649 (583-721)	1.00	1088	59	704 (545-908)	1.00
Yes	101	28	3936 (2718-5701)	3.15 (2.14-4.65)	103	16	2166 (1327-3536)	1.61 (0.90-2.86)
Missing	117	12	539 (298-973)		48	4	1110 (416-2956)	
SBP								
<140	4701	198	493 (429-566)	1.00	1068	56	682 (525-886)	1.00
140-159	1373	130	1150 (969-1366)	1.39 (1.10-1.74)	150	19	1681 (1072-2636)	1.44 (0.83-2.49)
>160	296	51	2228 (1693-2932)	1.76 (1.28-2.42)	21	4	2865 (1075-7634)	1.51 (0.53-4.28)
Missing	15	0			0	0		
TC/HDL ratio								
<5	4284	207	568 (495-650)	1.00	538	21	499 (325-765)	1.00
≥ 5	2090	170	980 (843-1139)	1.64 (1.34-2.00)	698	58	1105 (854-1430)	2.14 (1.30-3.52)
Missing	11	2	2328 (582-9307)		3	0		
TC								
< 5 mmol/L	1930	68	410 (324-520)	1.00	407	19	609 (389-955)	1.00
≥ 5 mmol/L	4444	309	830 (742-927)	1.17 (0.90-1.53)	830	60	945 (734-1217)	1.49 (0.89-2.49)
Missing	11	2	2328 (582-9307)		2	0		
HDL								
< 1.00 mmol/L	1032	78	915 (733-1142)	1.00	525	34	855 (611-1197)	1.00
≥1.00 mmol/L	5343	299	660 (589-739)	0.61 (0.47-0.78)	711	45	821 (613-1099)	0.99 (0.63-1.55)
Missing	10	2	2608 (652-10427)		3	0		
Current daily smokers								
No	4706	231	578 (508-657)	1.00	905	52	749 (571-983)	1.00
Yes	1660	146	1062 (903-1248)	1.86 (1.51-2.29)	302	25	1088 (735-1610)	1.43 (0.88-2.30)
Missing	19	2	1236 (309-4941)		32	2	831 (208-3323)	

CI, confidence interval; CVD, cardiovascular disease; HDL, high density lipoprotein; HR, hazard ratio; TC, total cholesterol; SBP, systolic blood pressure

Table A6. Crude rates and age-adjusted HR of CVD by risk factors, Norwegian and South Asian women from the Norwegian cohort.

	Norwegian				South Asian			
	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR (95% CI)	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR (95% CI)
Total	8015	259	378 (335-427)		967	26	341 (232-501)	
Diabetes								
No	7657	237	361 (318-410)	1.00	816	17	262 (163-422)	1.00
Yes	105	11	1305 (723-2356)	2.79 (1.52-5.11)	100	9	1212 (630-2329)	2.74 (1.21-6.22)
Missing	253	11	539 (298-973)		51	0		
SBP								
<140	6823	151	257 (219-302)	1.00	876	18	260 (164-412)	1.00
140-159	920	76	999 (798-1251)	1.82 (1.37-2.43)	67	4	774 (291-2062)	1.45 (0.48-4.34)
>160	266	31	1450 (1020-2062)	2.11 (1.42-3.15)	23	4	2378 (892-6335)	2.42 (0.76-7.71)
Missing	6	1	2128 (300-15106)		1	0		
TC/HDL ratio								
<5	7225	203	328 (286-376)	1.00	749	17	287 (178-462)	1.00
≥ 5	781	54	833 (638-1088)	1.79 (1.33-2.42)	215	9	537 (279-1032)	1.46 (0.65-3.30)
Missing	9	2	3122 (781-12483)			0		
TC								
< 5 mmol/L	3004	44	169 (125-227)	1.00	524	8	193 (97-386)	1.00
≥ 5 mmol/L	5002	213	503 (440-576)	1.40 (1.00-1.97)	440	18	521 (328-826)	1.54 (0.65-3.64)
Missing	9	2	3122 (781-12483)		3	0		
HDL								
< 1.2 mmol/L	1057	52	587 (447-770)	1.00	465	12	329 (187-578)	1.00
≥1.2 mmol/L	6949	205	344 (300-395)	0.55 (0.40-0.74)	499	14	354 (210-598)	0.77 (0.36-1.69)
Missing	9	2	3122 (781-12483)		3	0		
Current daily smokers								
No	5461	134	285 (241-338)	1.00	883	24	344 (231-514)	1.00
Yes	2510	119	564 (471-675)	2.22 (1.73-2.84)	13	0		
Missing	44	6	1759 (790-3916)		71	2	365 (91-1461)	

CI, confidence interval; CVD, cardiovascular disease; HDL, high density lipoprotein; HR, hazard ratio; TC, total cholesterol; SBP, systolic blood pressure

Table A7. Crude rates and age-adjusted HR of CVD by risk factors, European and Indian New Zealand men from the New Zealand cohort.

	European				Indian			
	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR (95% CI)	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR (95% CI)
Total	63 319	1 518	815 (775-857)		9 997	273	933 (828-1050)	
Type 2 diabetes								
No	57 760	1 241	728 (689-770)	1.00	7 641	158	712 (610-833)	1.00
Yes	5 559	277	1739 (1546-1957)	1.92 (1.68-2.19)	2 356	115	1622 (1351-1947)	1.72 (1.34-2.20)
Missing	0				0			
SBP								
<140	42 666	776	632 (589-678)	1.00	7 888	188	805 (698-929)	1.00
140-159	16 417	514	1030 (945-1123)	1.35 (1.20-1.51)	1 723	68	1431 (1128-1814)	1.37 (1.03-1.81)
>160	4 236	228	1675 (1471-1908)	2.03 (1.75-2.36)	386	17	1462 (909-2352)	1.22 (0.74-2.02)
Missing	0				0			
TC/HDL ratio								
<5	45 177	994	756 (711-805)	1.00	6 379	178	926 (799-1072)	1.00
≥ 5	18 139	524	955 (876-1040)	1.58 (1.42-1.76)	3 617	95	946 (774-1157)	1.28 (1.00-1.65)
Missing*	3	0			1	0		
TC								
< 5 mmol/L	20 226	395	879 (797-970)	1.00	4 450	103	841 (693-1020)	1.00
≥ 5 mmol/L	36 071	684	756 (702-815)	1.01 (0.89-1.14)	5 130	137	974 (824-1152)	1.36 (1.05-1.76)
Missing*	7 022	439	861 (785-946)		417	33	1114 (792-1567)	
HDL								
< 1.00 mmol/L	2 325	55	986 (757-1284)	1.00	561	15	1327 (800-2202)	1.00
≥1.00 mmol/L	10 920	323	891 (799-993)	0.87 (0.66-1.17)	1 231	39	1140 (833-1561)	0.62 (0.33-1.14)
Missing*	50 074	1 140	789 (744-836)		8 205	219	886 (776-1011)	
Current daily smokers								
No	55 587	1 197	733 (692-776)	1.00	9 105	242	913 (805-1035)	1.00
Yes	7 731	321	1396 (1252-1558)	2.29 (2.02-2.59)	892	31	1123 (790-1597)	1.45 (0.99-2.11)
Missing	1	0			0			

CI, confidence interval; CVD, cardiovascular disease; HDL, high density lipoprotein; HR, hazard ratio; TC, total cholesterol; SBP, systolic blood pressure. *The number of missing information is different for TC/HDL ratio than for TC and HDL separately. This is because the risk factors included in the PREDICT risk assessment (age, gender, smoking, diabetes, systolic BP and total cholesterol/HDL ratio) was compulsory for assessing risk. Risk factors not compulsory for risk assessment consequently have more missing information (e.g. the HDL and TC)

Table A8. Crude rates and age-adjusted HR of CVD by risk factors, European and Indian New Zealand women from the New Zealand cohort.

	European				Indian			
	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR	No. of persons	No. of CVD events	Crude rate/100 000 person-years (95% CI)	HR
Total	49 094	757	528 (492-567)		7 039	106	531 (439-643)	
Type 2 diabetes								
No	44 880	635	485 (448-524)	1.00	5 010	50	358 (271-472)	1.00
Yes	4 214	122	994 (832-1187)	1.93 (1.59-2.35)	2 029	56	936 (720-1216)	2.29 (1.55-3.37)
Missing	0				0			
SBP								
<140	32 178	395	436 (395-481)	1.00	5 370	56	371 (285-482)	1.00
140-159	13 019	258	646 (572-730)	1.22 (1.04-1.44)	1 281	34	919 (656-1286)	2.11 (1.37-3.26)
>160	3 896	104	813 (671-985)	1.42 (1.14-1.77)	388	16	1388 (851-2266)	2.99 (1.70-5.27)
Missing	1	0			0			
TC/HDL ratio								
<5	42 800	626	507 (469-549)	1.00	5 895	89	527 (428-648)	1.00
≥ 5	6 289	131	658 (555-781)	1.42 (1.17-1.71)	1 143	17	559 (347-898)	1.11 (0.66-1.86)
Missing*	5	0			1	0		
TC								
< 5 mmol/L	10 940	127	515 (433-613)	1.00	3 277	57	639 (493-828)	1.00
≥ 5 mmol/L	32 974	415	516 (469-569)	0.96 (0.79-1.17)	3 515	37	398 (289-550)	0.62 (0.41-0.94)
Missing*	5 180	215	561 (491-641)		247	12	689 (391-1212)	
HDL								
< 1.2 mmol/L	1 852	26	529 (360-776)	1.00	568	9	781 (406-1501)	1.00
≥1.2 mmol/L	7 985	149	578 (492-678)	0.97 (0.64-1.47)	866	14	600 (355-1013)	0.75 (0.32-1.77)
Missing*	39 257	582	517 (477-561)		5 605	83	504 (406-625)	
Current daily smokers								
No	43 994	595	466 (430-505)	1.00	6 973	104	526 (434-638)	1.00
Yes	5 100	162	1038 (890-1211)	2.74 (2.30-3.27)	66	2	1090 (272-4357)	2.60 (0.64-10.59)
Missing	0				0			

CI, confidence interval; CVD, cardiovascular disease; HDL, high density lipoprotein; HR, hazard ratio; TC, total cholesterol; SBP, systolic blood pressure. *The number of missing information is different for TC/HDL ratio than for TC and HDL separately. This is because the risk factors included in the PREDICT risk assessment (age, gender, smoking, diabetes, systolic BP and total cholesterol/HDL ratio) was compulsory for assessing risk. Risk factors not compulsory for risk assessment consequently have more missing information (e.g. the HDL and TC).

Table A9. Hazard ratios for first **CHD** event in South Asian groups compared to ethnic European groups in New Zealand and Norway.

	Men		Women	
	Indian NZ vs. European NZ	South Asians vs. Norwegians	Indian NZ vs. European NZ	South Asians vs. Norwegians
<i>Adjusted for</i>				
Age	2.10 (1.79-2.46)	2.45 (1.82-3.30)	1.60 (1.22-2.10)	3.23 (1.95-5.34)
Age, TC/HDL ratio	2.13 (1.81-2.50)	2.04 (1.51-2.76)	1.58 (1.20-2.07)	2.71 (1.61-4.54)
Age, TC/HDL ratio, diabetes	1.92 (1.63-2.26)	1.68 (1.23-2.30)	1.31 (0.99-1.74)	2.24 (1.30-3.86)
Age, TC/HDL ratio, diabetes, systolic BP	2.00 (1.70-2.36)	1.81 (1.32-2.48)	1.36 (1.02-1.80)	2.26 (1.31-3.90)
Age, TC/HDL ratio, diabetes, systolic BP, smoking	2.07 (1.76-2.44)	1.86 (1.36-2.55)	1.60 (1.20-2.13)	2.84 (1.61-5.03)

HDL, high density lipoprotein; NZ, New Zealand; SBP, systolic blood pressure; TC, Total cholesterol.

All had complete information on the risk factors