

SUPPLEMENTAL MATERIAL

Supplemental Tables

Table S1: Surveys included in the analysis and their characteristics

Region	Country (Survey)	Year	Data above 65 years	Survey population (national / sub-national)*	SBP		TC		FPG	
					Sample size		Sample size		Sample size	
					Female	Male	Female	Male	Female	Male
High income										
East Asia	South Korea (K-NHANES)	1998	Y	National with sample weights	5257	4514	5257	4514	5257	4514
East Asia	South Korea (K-NHANES)	2001	Y	National with sample weights	4051	3269	4313	3552	4295	3487
East Asia	South Korea (K-NHANES)	2005	Y	National with sample weights	3630	2863	3585	2827	3559	2804
Australasia	Australia (AUSDIAB)	2001	Y	National with sample weights	4530	3645	3480	2759	4575	3687
Australasia	Australia (RFPS)	1989	N	sub-national	3483	3360	2662	2577	--	--
Western Europe	Germany (BGS)	1998	Y	National with sample weights	2318	2145	1679	1625	--	--
Western Europe	Ireland (SLAN)	1998	Y	National without sample weights	225	79	170	58	--	--
Western Europe	Ireland (SLAN)	2002	Y	National without sample weights	142	107	117	76	--	--
Western Europe	Scotland (Scottish Health Survey)	1995	N	sub-national†	2850	2318	--	--	--	--
Western Europe	Scotland (Scottish Health Survey)	1998	N	sub-national†	2669	2201	1676	1385	--	--
Western Europe	Scotland (Scottish Health Survey)	2003	Y	sub-national†	1908	1465	1041	841	--	--
Western Europe	England (HSE)	1991-1992	Y	sub-national†	1629	1672	1180	1122	--	--
Western Europe	England (HSE)	1993	Y	sub-national†	3846	4031	2864	2723	--	--
Western Europe	England (HSE)	1994	Y	sub-national†	3644	3684	2657	2509	--	--
Western Europe	England (HSE)	1995	Y	sub-national†	4243	3780	--	--	--	--
Western Europe	England (HSE)	1996	Y	sub-national†	2128	4432	--	--	--	--
Western Europe	England (HSE)	1997	Y	sub-national†	2371	2128	--	--	--	--
Western Europe	England (HSE)	1998	Y	sub-national†	3889	3704	2705	2454	--	--
Western Europe	England (HSE)	2001	Y	sub-national†	2133	1249	--	--	--	--
Western Europe	England (HSE)	2002	Y	sub-national†	1085	554	--	--	--	--
Western Europe	England (HSE)	2003	Y	sub-national†	1949	1173	2070	1803	351	283
Western Europe	England (HSE)	2005	Y	sub-national†	940	591	--	--	--	--
Western Europe	England (HSE)	2006	Y	sub-national†	1733	1118	1873	1528	--	--
Western Europe	England (HSE)	2007	Y	sub-national†	819	522	--	--	--	--
Middle East	Kuwait (STEP)	2006	N	National with sample weights	1052	696	866	545	962	629
Middle East	Qatar (GCC)	2006	N	National with sample weights	1427	1406	--	--	--	--
North America	Canada (Heart Health Survey)	1989	N	National with sample weights	5882	5671	--	--	--	--
North America	US (NHANES II)	1976-1980	N	National with sample weights	3438	3118	2153	1915	1218	1057
North America	US (NHANES III)	1998-1994	Y	National with sample weights	4597	4024	3549	2974	4634	4000

Region	Country (Survey)	Year	Data above 65 years	Survey population (national / sub-national)*	SBP		TC		FPG	
					Sample size		Sample size		Sample size	
					Female	Male	Female	Male	Female	Male
North America	US (NHANES)	1999-2002	Y	National with sample weights	2368	2225	1950	1767	1288	1210
North America	US (NHANES)	2003-2004	Y	National with sample weights	1067	990	868	920	615	538
North America	US (NHANES)	2005-2006	Y	National with sample weights	1150	1098	972	928	616	594
Low or middle income										
Central Asia	Mongolia (STEP)	2005	N	National with sample weights	1213	1154	--	--	--	--
East Asia	China (CHNS)	1991	Y	sub-national	2362	2432	--	--	--	--
East Asia	China (CHNS)	1993	Y	sub-national	2435	2460	--	--	--	--
East Asia	China (CHNS)	1997	Y	sub-national	2943	2643	--	--	--	--
East Asia	China (CHNS)	2000	Y	sub-national	3372	3071	--	--	--	--
East Asia	China (SAGE)	2009	N	National without sample weights	1685	1558	--	--	--	--
South Asia	India (SAGE)	2007	N	National with sample weights	4376	2715	--	--	--	--
Southeast Asia	Indonesia (FLS 3)	2000	Y	sub-national	6752	5954	--	--	--	--
Southeast Asia	Sri Lanka (STEP)	2006	N	National without sample weights	4409	4331	--	--	--	--
Southeast Asia	Thailand (NHES 1)	1992	Y	National with sample weights	4945	3606	3496	2688	4359	3360
Southeast Asia	Thailand (NHES 2)	1997	Y	National without sample weights	2154	1437	1011	598	--	--
Southeast Asia	Thailand (NHES 3)	2004	Y	National with sample weights	11931	10505	7282	6188	11321	9948
Southeast Asia	Vietnam (NHS)	2002	Y	National with sample weights	30664	26079	--	--	--	--
Eastern Europe	Russia (LMS)	1993	Y	National without sample weights	2847	4033	--	--	--	--
Eastern Europe	Russia (LMS)	1994	Y	National without sample weights	3590	2847	--	--	--	--
Eastern Europe	Russia (LMS)	1992-1993	Y	National without sample weights	3760	2995	--	--	--	--
Latin America and Caribbean	Colombia (National Health Survey)	2007	N	National with sample weights	4813	3332	4018	2688	4811	3283
Latin America and Caribbean	Dominica (STEP)	2007	N	National with sample weights	407	330	--	--	--	--
Latin America and Caribbean	Mexico (ENSA)	2000	Y	National with sample weights	6388	15413	--	--	--	--
Latin America and Caribbean	Mexico (ENSANUT)	2006	Y	National with sample weights	13214	8625	--	--	--	--
Latin America and Caribbean	St. Kitts (STEP)	2007	N	sub-national	688	396	--	--	--	--
Middle East	Algeria (STEP)	2003	N	sub-national	1998	1357	1436	933	1693	1131
Middle East	Iran (NCDS)	2005	N	National with sample weights	27622	27879	15979	14480	22263	20750
Middle East	Turkey (PatenT)	2003	Y	National without sample weights	1186	1820	--	--	--	--
Oceania	American Samoa (STEP)	2004	N	National without sample weights	937	824	--	--	894	783
Oceania	Cook Islands (STEP)	2003	N	National without sample weights	858	845	--	--	--	--

Region	Country (Survey)	Year	Data above 65 years	Survey population (national / sub-national)*	SBP		TC		FPG	
					Sample size		Sample size		Sample size	
					Female	Male	Female	Male	Female	Male
Oceania	Fiji (STEP)	2002	N	National without sample weights	2572	1732	--	--	--	--
Oceania	Kiribati (STEP)	2004	N	National without sample weights	664	521	--	--	537	431
Oceania	Marshall Islands (STEP)	2002	N	National without sample weights	638	418	--	--	--	--
Oceania	Micronesia (STEP)	2003	N	sub-national	836	548	--	--	--	--
Oceania	Nauru (STEP)	2004	N	National with sample weights	753	681	692	615	697	628
Oceania	Samoa (STEP)	2002	N	National without sample weights	1161	967	858	705	1106	923
Oceania	Solomon Islands (STEP)	2005	N	sub-national	794	551	--	--	--	--
Oceania	Tokelau (STEP)	2005	N	National without sample weights	208	169	125	113	206	168
Oceania	Tonga (STEP)	2004	N	National without sample weights	447	309	--	--	--	--
Oceania	Vanuatu (STEP)	2005	N	sub-national	415	315	--	--	--	--
Sub-Saharan Africa	Benin (STEP)	2008	N	National without sample weights	2818	2813	--	--	--	--
Sub-Saharan Africa	Botswana (STEP)	2007	N	National with sample weights	2000	896	--	--	--	--
Sub-Saharan Africa	Cameroon (STEP)	2003	N	sub-national	2714	1753	--	--	--	--
Sub-Saharan Africa	Cape Verde (STEP)	2007	N	National with sample weights	963	542	--	--	--	--
Sub-Saharan Africa	Eritrea (STEP)	2004	N	National without sample weights	784	787	--	--	--	--
Sub-Saharan Africa	Ethiopia (STEP)	2006	N	sub-national	1971	1277	--	--	--	--
Sub-Saharan Africa	Gabon (STEP)	2009	N	sub-national	924	719	--	--	--	--
Sub-Saharan Africa	Ghana (SAGE)	2009	N	National with sample weights	1254	1605	--	--	--	--
Sub-Saharan Africa	Madagascar (STEP)	2005	N	sub-national	2208	2148	--	--	--	--
Sub-Saharan Africa	Mozambique (STEP)	2005	N	National without sample weights	1380	1015	--	--	--	--
Sub-Saharan Africa	Niger (STEP)	2007	N	National without sample weights	768	1057	--	--	--	--
Sub-Saharan Africa	Sao Tome et Principe (STEP)	2009	N	National without sample weights	1063	760	--	--	--	--
Sub-Saharan Africa	Seychelles (STEP)	2004	N	National with sample weights	617	513	428	350	606	494
Sub-Saharan Africa	South Africa (DHS)	1998	Y	National with sample weights	4008	2635	--	--	--	--
Sub-Saharan Africa	South Africa (SAGE)	2009	N	National with sample weights	1699	1301	--	--	--	--

* Sub-national refers to surveys that cover multiple communities or regions within a country.

† Surveys designed to be representative of all of England or Scotland, similar to a national survey. Their classification as subnational here is simply because they do not cover all of UK

**Of surveys that met eligibility criteria (subnational or national survey, covering at least some decades of middle-age and older adult ages), we excluded the following surveys for reasons stated:

RLMS 1992 – First round of survey, documentation cited issues in data collection.

England HSE 1999 – Oversampled minorities and not representative when individual records used for estimating intercept and slope.

England HSE 2004 – Oversampled minorities and not representative when individual records used for estimating intercept and slope.

Mexico ENSA 2000 – How sample was selected for lab measurement was unknown at the time of analysis; excluded from FPG and TC analysis.

Thailand NHES2 – Fasting level of full sample was known; excluded from FPG analysis.

Jordan BRFSS 2004 and 2007 – How sample was selected for physical and lab measurement was unknown at the time of analysis.

Table S2: Age association slope and intercept for surveys used in the analysis

Region	Country (Survey)	Year	SBP (mmHg)		TC (mg/dL)		FPG (mg/dL)		SBP (mmHg)		TC (mg/dL)		FPG (mg/dL)	
			Slope per decade of age		Slope per decade of age		Slope per decade of age		Intercept at age 30		Intercept at age 30		Intercept at age 30	
			Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
High income														
East Asia	South Korea (K-NHANES)	1998	8.09	4.29	12.95	1.45	6.25	4.65	110.81	121.26	170.79	189.09	91.79	96.01
East Asia	South Korea (K-NHANES)	2001	8.26	4.57	14.69	2.30	3.32	2.40	106.12	118.87	182.60	207.55	92.15	95.96
East Asia	South Korea(K-NHANES)	2005	8.39	5.05	12.37	1.30	4.24	5.02	102.56	114.63	166.82	185.71	86.69	91.22
Australasia	Australia (AUSDIAB)	2001	7.61	5.12	14.28	9.64	4.14	5.41	108.92	119.84	192.03	207.47	90.76	94.44
Australasia	Australia (RFPS)	1989	9.46	6.32	16.38	11.75			107.18	118.39	187.53	204.25		
Western Europe	Germany (BGS)	1998	10.60	6.40	17.51	14.55			115.95	126.37	204.75	219.48		
Western Europe	Ireland (SLAN)	1998	10.61	7.09	21.01	17.42			107.65	122.84	177.01	193.22		
Western Europe	Ireland (SLAN)	2002	6.44	7.03	21.01	17.42			118.84	124.09	177.01	193.22		
Western Europe	Scotland (Scottish Health Survey)	1995	8.46	4.46					113.86	126.62				
Western Europe	Scotland (Scottish Health Survey)	1998	8.30	4.83	18.75	11.81			114.18	125.74	185.70	204.14		
Western Europe	Scotland (Scottish Health Survey)	2003	7.44	3.53	19.34	11.19			112.26	125.51	190.56	208.00		
Western Europe	England (HSE)	1991-1992	8.80	5.04	20.66	12.68			119.08	130.02	192.81	212.94		
Western Europe	England (HSE)	1993	8.14	5.04	21.70	12.77			118.90	130.23	191.40	214.64		
Western Europe	England (HSE)	1994	8.18	4.93	20.29	15.20			117.51	128.45	195.04	213.80		
Western Europe	England (HSE)	1995	7.78	4.70					118.45	129.27				
Western Europe	England (HSE)	1996	8.36	4.79					117.86	129.10				
Western Europe	England (HSE)	1997	7.71	4.39					117.73	129.04				
Western Europe	England (HSE)	1998	7.68	4.34	16.68	9.91			116.70	128.14	187.59	203.72		
Western Europe	England (HSE)	2001	7.25	4.50					118.29	128.04				
Western Europe	England (HSE)	2002	7.41	4.42					117.55	127.23				
Western Europe	England (HSE)	2003	6.94	3.69	17.75	9.52	0.93	4.06	112.55	125.62	190.25	211.77	88.08	86.40
Western Europe	England (HSE)	2005	6.22	3.12					112.89	126.16				
Western Europe	England (HSE)	2006	6.45	3.53	17.42	9.18			112.33	125.50	185.87	204.79		
Western Europe	England (HSE)	2007	6.73	3.32					111.99	124.54				
Middle East	Kuwait (STEP)	2006	7.65	5.25	8.64	0.19	20.42	18.38	111.13	116.84	187.35	202.86	82.93	91.40
Middle East	Qatar (GCC)	2006	8.15	4.46					114.39	123.14				
North America	Canada (Heart Health Survey)	1989	8.15	6.12					108.64	119.66				
North America	US (NHANES II)	1978	8.79	4.69	22.44	11.68	3.36	2.90	111.10	122.57	186.45	202.76	88.03	92.29
North America	US (NHANES III)	1991	8.70	5.67	16.81	7.96	7.77	6.06	109.10	118.24	182.57	198.73	89.77	94.53
North America	US (NHANES)	2000	8.62	4.27	8.48	7.32	7.22	7.08	107.23	116.92	193.04	198.04	89.55	95.25
North America	US (NHANES)	2004	8.63	4.41	5.01	7.76	7.67	7.97	107.46	116.42	196.76	198.52	89.73	95.88
North America	US (NHANES)	2006	8.57	3.96	3.75	5.73	9.23	7.78	106.05	117.76	196.37	196.31	90.35	95.74
Low or middle income														
Central Asia	Mongolia (STEP)	2005	8.72	6.78	--	--	--	--	116.90	124.66	--	--	--	--
East Asia	China (CHNS)	1991	6.47	5.33	--	--	--	--	104.03	109.15	--	--	--	--
East Asia	China (CHNS)	1993	6.48	4.42	--	--	--	--	104.16	110.55	--	--	--	--
East Asia	China (CHNS)	1997	6.64	4.35	--	--	--	--	107.15	113.38	--	--	--	--
East Asia	China (CHNS)	2000	6.65	4.51	--	--	--	--	107.21	113.96	--	--	--	--
East Asia	China (SAGE)	2009	7.91	5.33	--	--	--	--	115.52	123.37	--	--	--	--
South Asia	India (SAGE)	2007	4.22	2.06	--	--	--	--	110.83	113.91	--	--	--	--
Southeast Asia	Indonesia (FLS 3)	2000	9.77	6.66	--	--	--	--	114.25	119.16	--	--	--	--
Southeast Asia	Sri Lanka (STEP)	2006	6.95	4.43	--	--	--	--	114.35	121.89	--	--	--	--
Southeast Asia	Thailand (NHES 1)	1992	5.91	3.54	10.92	5.68	4.32	2.79	108.24	112.33	177.34	179.12	91.82	91.57
Southeast Asia	Thailand (NHES 2)	1997	7.90	6.24	16.07	5.21			108.58	115.85	188.23	190.57	--	--
Southeast Asia	Thailand (NHES 3)	2004	7.03	5.19	14.86	5.02	7.36	4.16	108.43	114.48	185.67	195.33	86.03	93.15

Region	Country (Survey)	Year	SBP (mmHg)		TC (mg/dL)		FPG (mg/dL)		SBP (mmHg)		TC (mg/dL)		FPG (mg/dL)	
			Slope per decade of age		Slope per decade of age		Slope per decade of age		Intercept at age 30		Intercept at age 30		Intercept at age 30	
			Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Southeast Asia	Vietnam (NHS)	2002	7.59	5.33	--	--	--	--	107.98	115.04	--	--	--	--
Eastern Europe	Russia (LMS)	1993	8.91	4.37	--	--	--	--	112.36	121.44	--	--	--	--
Eastern Europe	Russia (LMS)	1994	8.89	4.40	--	--	--	--	112.24	121.47	--	--	--	--
Eastern Europe	Russia (LMS)	1992-1993	9.07	5.19	--	--	--	--	113.86	122.03	--	--	--	--
Latin America and Caribbean	Colombia (National Health Survey)	2007	9.82	5.96	15.00	6.90	4.53	2.50	111.28	122.54	164.63	175.79	80.61	85.58
Latin America and Caribbean	Dominica (STEP)	2007	10.52	5.71	--	--	--	--	117.91	127.27	--	--	--	--
Latin America and Caribbean	Mexico (ENSA)	2000	6.56	3.77	--	--	--	--	113.65	119.93	--	--	--	--
Latin America and Caribbean	Mexico (ENSANUT)	2006	6.57	3.86	--	--	--	--	112.39	119.08	--	--	--	--
Latin America and Caribbean	St. Kitts (STEP)	2007	9.22	5.77	--	--	--	--	116.53	128.48	--	--	--	--
Middle East	Algeria (STEP)	2003	8.37	6.09	4.04	3.28	2.63	0.83	119.46	119.44	182.74	177.15	87.43	89.28
Middle East	Iran (NCDS)	2005	9.16	6.09	15.12	6.94	8.11	4.57	110.62	115.79	184.70	188.99	97.78	100.45
Middle East	Turkey (Patent)	2003	5.65	10.65	--	--	--	--	118.95	118.01	--	--	--	--
Oceania	American Samoa (STEP)	2004	8.79	5.09	--	--	16.05	12.33	117.10	129.21	--	--	122.13	129.59
Oceania	Cook Islands (STEP)	2003	8.06	5.64	--	--	--	--	115.65	127.38	--	--	--	--
Oceania	Fiji (STEP)	2002	8.81	3.40	--	--	--	--	114.07	122.41	--	--	--	--
Oceania	Kiribati (STEP)	2004	4.31	3.08	--	--	11.18	13.91	111.55	121.91	--	--	111.86	113.21
Oceania	Marshall Islands (STEP)	2002	10.35	4.67	--	--	--	--	101.62	114.91	--	--	--	--
Oceania	Micronesia (STEP)	2003	7.58	4.47	--	--	--	--	109.97	123.52	--	--	--	--
Oceania	Nauru (STEP)	2004	11.27	6.56	13.88	2.99	19.59	12.71	111.21	124.88	175.22	180.09	75.96	79.94
Oceania	Samoa (STEP)	2002	8.61	3.69	11.21	10.40	14.69	10.82	111.20	125.40	152.87	154.95	101.76	106.00
Oceania	Solomon Islands (STEP)	2005	7.63	2.93	--	--	--	--	106.99	114.01	--	--	--	--
Oceania	Tokelau (STEP)	2005	10.71	2.04	8.52	15.41	18.28	11.61	103.28	122.43	184.40	174.44	110.24	127.60
Oceania	Tonga (STEP)	2004	6.47	2.04	--	--	--	--	114.90	126.37	--	--	--	--
Oceania	Vanuatu (STEP)	2005	8.88	2.79	--	--	--	--	123.42	130.51	--	--	--	--
Sub-Saharan Africa	Benin (STEP)	2008	8.48	4.09	--	--	--	--	115.61	125.07	--	--	--	--
Sub-Saharan Africa	Botswana (STEP)	2007	8.80	3.99	--	--	--	--	120.24	125.65	--	--	--	--
Sub-Saharan Africa	Cameroon (STEP)	2003	9.12	5.90	--	--	--	--	112.33	120.44	--	--	--	--
Sub-Saharan Africa	Cape Verde (STEP)	2007	9.37	1.71	--	--	--	--	120.53	136.49	--	--	--	--
Sub-Saharan Africa	Eritrea (STEP)	2004	8.11	4.10	--	--	--	--	107.30	116.01	--	--	--	--
Sub-Saharan Africa	Ethiopia (STEP)	2006	8.38	8.34	--	--	--	--	115.93	119.77	--	--	--	--
Sub-Saharan Africa	Gabon (STEP)	2009	6.67	4.92	--	--	--	--	117.39	123.65	--	--	--	--
Sub-Saharan Africa	Ghana (SAGE)	2009	5.52	3.04	--	--	--	--	119.43	124.77	--	--	--	--
Sub-Saharan Africa	Madagascar (STEP)	2005	7.83	5.09	--	--	--	--	119.09	123.44	--	--	--	--
Sub-Saharan Africa	Mozambique (STEP)	2005	10.60	6.60	--	--	--	--	120.48	126.87	--	--	--	--
Sub-Saharan Africa	Niger (STEP)	2007	7.63	5.81	--	--	--	--	125.84	130.04	--	--	--	--
Sub-Saharan Africa	Sao Tome et Principe (STEP)	2009	11.63	5.16	--	--	--	--	120.52	132.25	--	--	--	--
Sub-Saharan Africa	Seychelles (STEP)	2004	8.82	6.49	16.26	3.05	12.23	9.18	113.08	123.92	187.96	207.56	88.00	97.68
Sub-Saharan Africa	South Africa (DHS)	1998	7.52	5.14	--	--	--	--	110.34	117.92	--	--	--	--
Sub-Saharan Africa	South Africa (SAGE)	2009	6.73	3.74	--	--	--	--	123.51	132.74	--	--	--	--