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Supplementary appendix

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Table of Supplemental Contents

Table of Supplemental Contents

[Page 2.](#) China Kadoorie Biobank collaborative group and members

[Page 3.](#) Supplemental Table S1. Correlations between different measures of adiposity at baseline among 175,894 men and 234,735 women.

[Page 4.](#) Supplemental Figure S1. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by usual SBP, stratified by age (left panel) and age and sex (right panel).

[Page 5.](#) Supplemental Table S2. Proportion of stroke attributable to high adiposity, using different BMI cut-points.

[Page 6.](#) Supplemental Figure S2. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by baseline BMI, in urban and rural areas.

[Page 7.](#) Supplemental Figure S3. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage per 5 kg/m² higher baseline BMI by study areas.

[Page 8.](#) Supplemental Figure S4. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by baseline BMI, in never and ever regular smokers.

[Page 9.](#) Supplemental Figure S5. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage per 5 kg/m² higher baseline BMI by baseline characteristics.

[Page 10.](#) Supplemental Table S3. Adjusted HRs for ischaemic stroke and intracerebral haemorrhage by baseline BMI, with stepwise exclusions.

[Page 11.](#) Supplemental Figure S6. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by baseline BMI, %BF and WC, with and without adjustment for mediators.

[Page 12.](#) Supplemental Table S4. Adjusted HRs for ischaemic stroke, intracerebral haemorrhage and total stroke associated with 1 SD difference in baseline adiposity measures, with and without adjustments for main mediators.

[Page 13.](#) Supplemental Table S5. Adjusted HRs for ischaemic stroke, intracerebral haemorrhage and total stroke associated with 1 SD difference in adiposity measures, with and without correction for regression dilution bias.

[Page 14.](#) Supplemental Figure S7. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by BMI at age 25 and BMI change, with and without adjustment for mediators

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Supplemental Table S1: Correlations* between different measures of adiposity at baseline among 175,894 men and 234,735 women

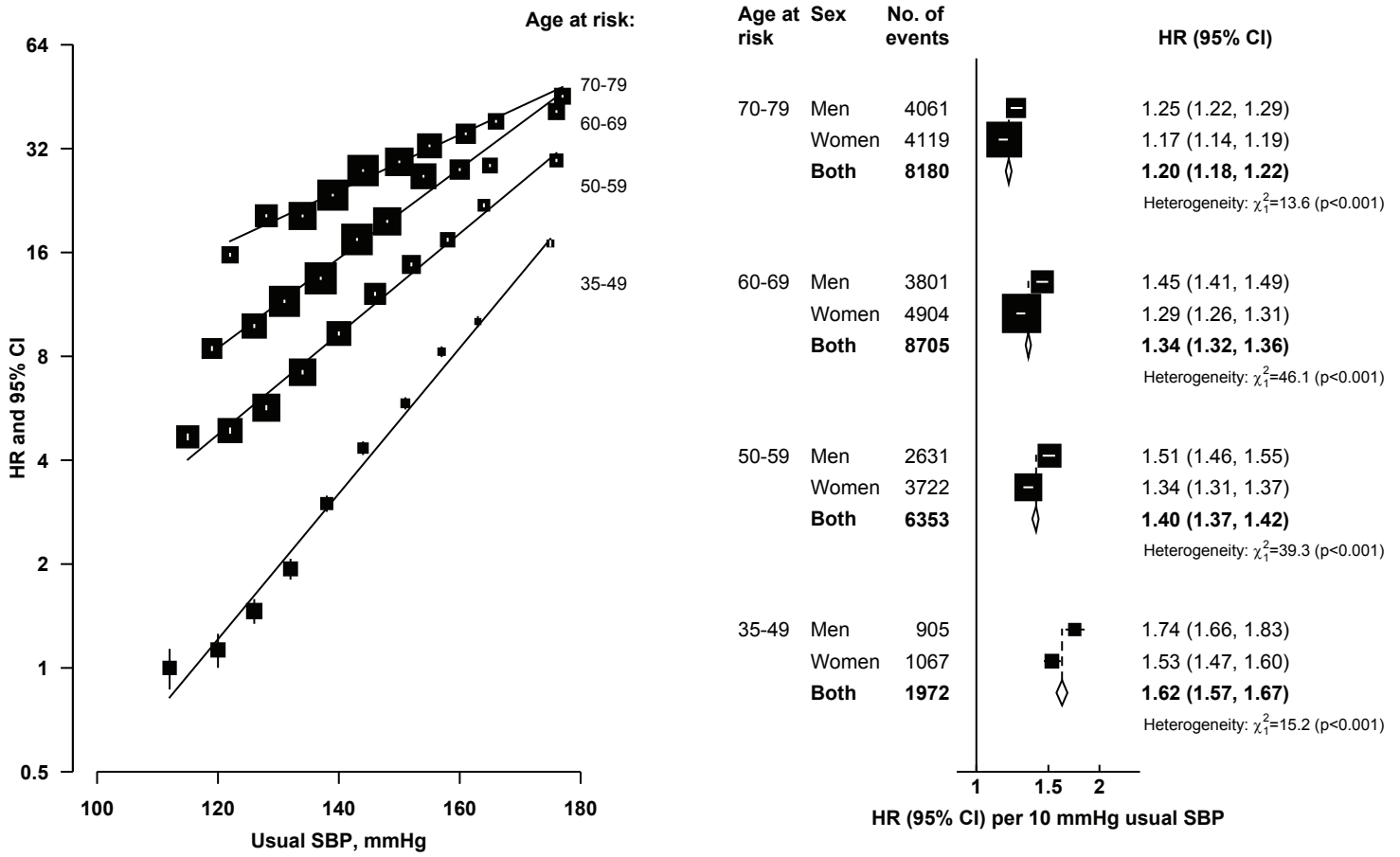
		WC	WHR	%BF	BMI25	Standing height	Sitting height
BMI	Male:	0.86	0.63	0.80	0.30	0.06	0.18
	Female:	0.84	0.54	0.89	0.34	0.03	0.13
WC	Male:		0.81	0.74	0.15	0.27	0.31
	Female:		0.79	0.79	0.23	0.19	0.20
WHR	Male:			0.59	0.13	0.02	0.04
	Female:			0.53	0.17	-0.04	-0.07
%BF	Male:				0.14	0.04	0.10
	Female:				0.25	-0.01	0.06
BMI25	Male:					-0.18	-0.11
	Female:					-0.14	-0.09
Standing Height						Male:	0.78
						Female:	0.77

BMI: body mass index; WC: waist-circumference; WHR: waist-hip ratio; %BF: Percentage body fat; BMI25: BMI at 25.

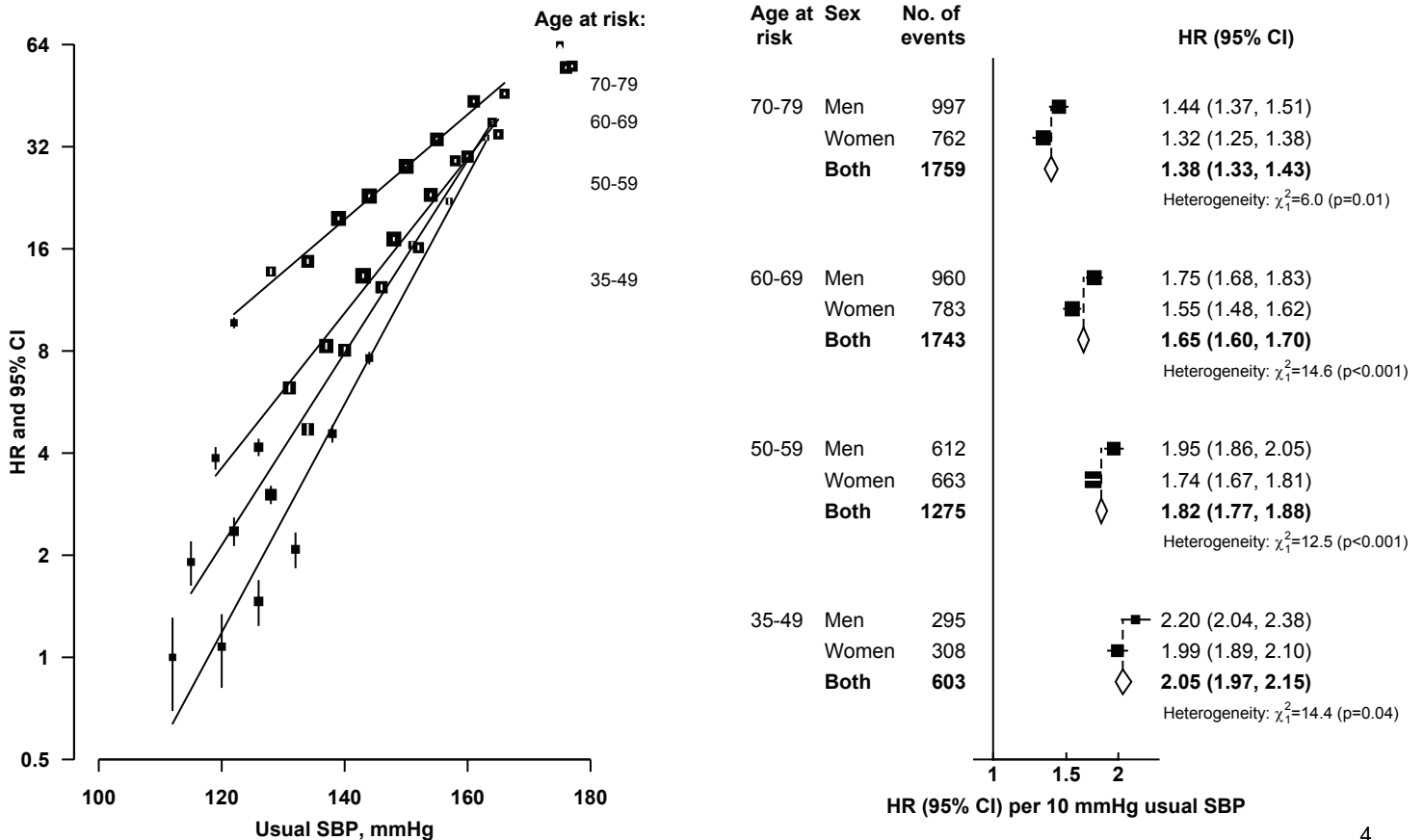
* Pearson partial correlation coefficients, adjusted for area and 5-year age group.

Supplemental Figure S1. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by usual SBP, stratified by age (left panel) and age and sex (right panel)

a) Ischaemic stroke
(25,210 events)



b) Intracerebral haemorrhage
(5,380 events)



Supplemental Table S2: Proportion of stroke attributable to high adiposity, using different BMI cut-points

	No. of events	% of participants in each BMI category	HR*	PAF† (%)
Ischaemic stroke				
BMI >20 kg/m ²	18955	84.9	1.51	28.8
BMI >23 kg/m ²	13556	54.7	1.43	16.5
BMI ≥25 kg/m ²	9070	33.4	1.42	9.9
Intracerebral haemorrhage				
BMI >20 kg/m ²	3189	84.9	1.14	10.6
BMI >23 kg/m ²	1984	54.7	1.14	6.7
BMI ≥25 kg/m ²	1273	33.4	1.25	6.7
All stroke				
BMI >20 kg/m ²	23427	84.9	1.42	24.9
BMI >23 kg/m ²	16390	54.7	1.37	14.7
BMI ≥25 kg/m ²	10901	33.4	1.38	9.2

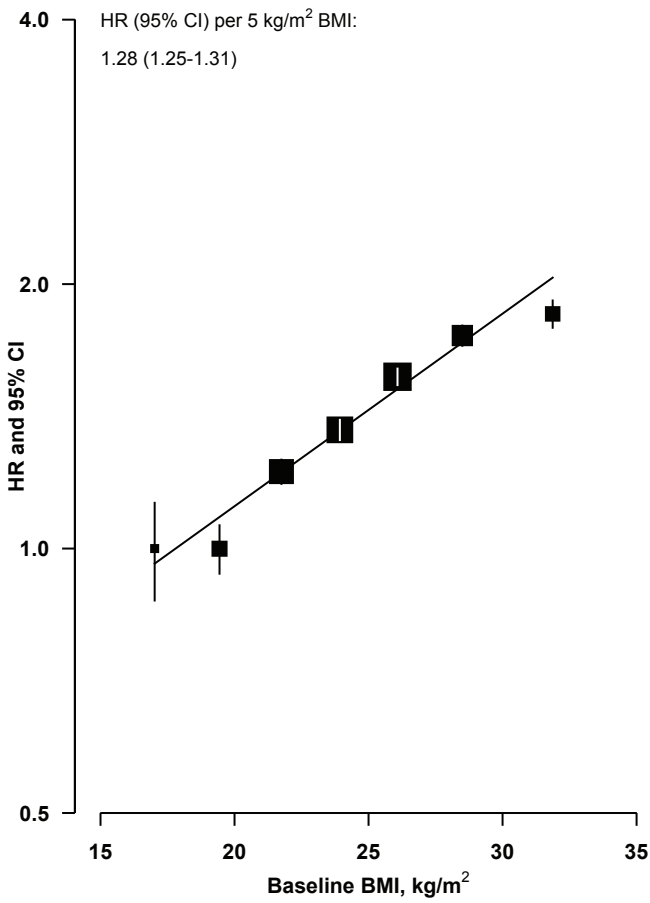
* Stratified by age, sex and study area, and adjusted for education, smoking, alcohol consumption, physical activity and self-rated health. The HRs were corrected for regression dilution bias using self-correlation coefficient of BMI between baseline and 1st resurvey ($r_{\text{BMI}}=0.93$).

† The fraction of events in the population that is attributable to adiposity (i.e., the population-attributable fraction; PAF) is $P(\text{HR}-1)$ divided by RR , with P being the prevalence of adiposity, using Miettinen formula. (Reference: Rockhill B, Newman B, Weinberg C. Use and misuse of population attributable fractions. *Am J Public Health* 1998; 88: 15-19)

i) Urban

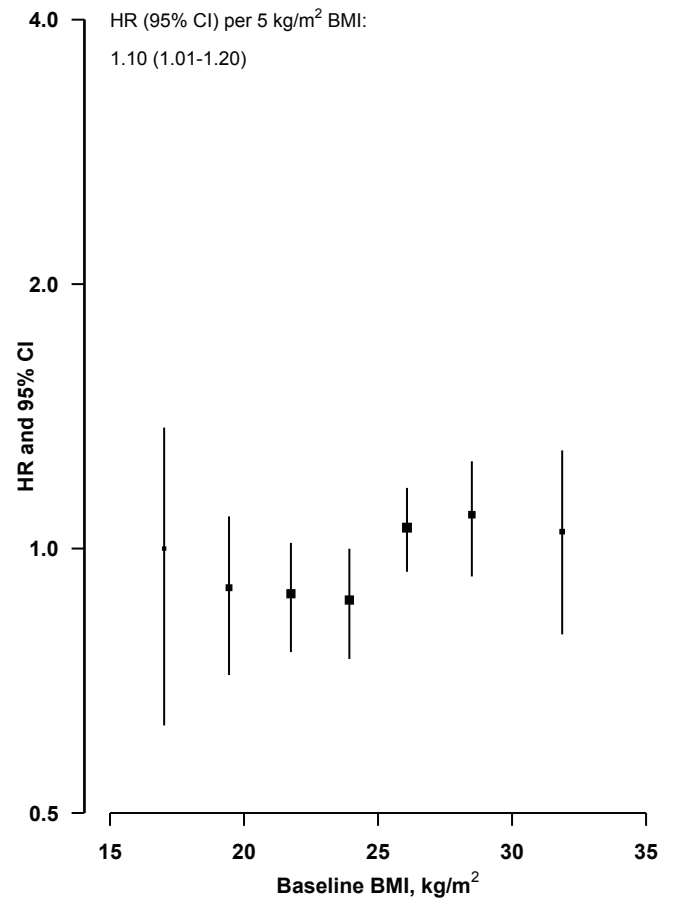
a) Ischaemic stroke

(13,395 events)



b) Intracerebral haemorrhage

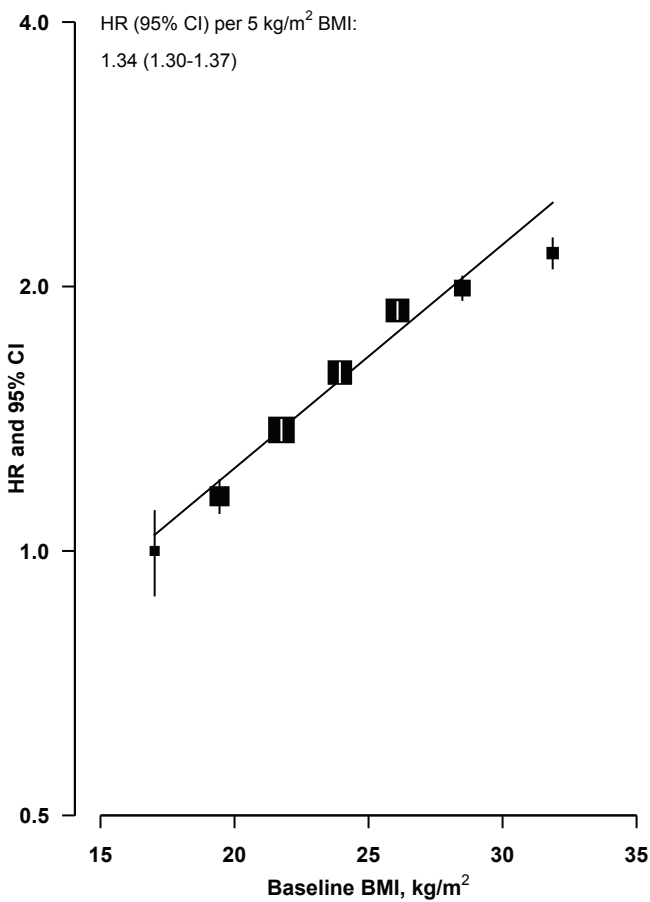
(1,226 events)



ii) Rural

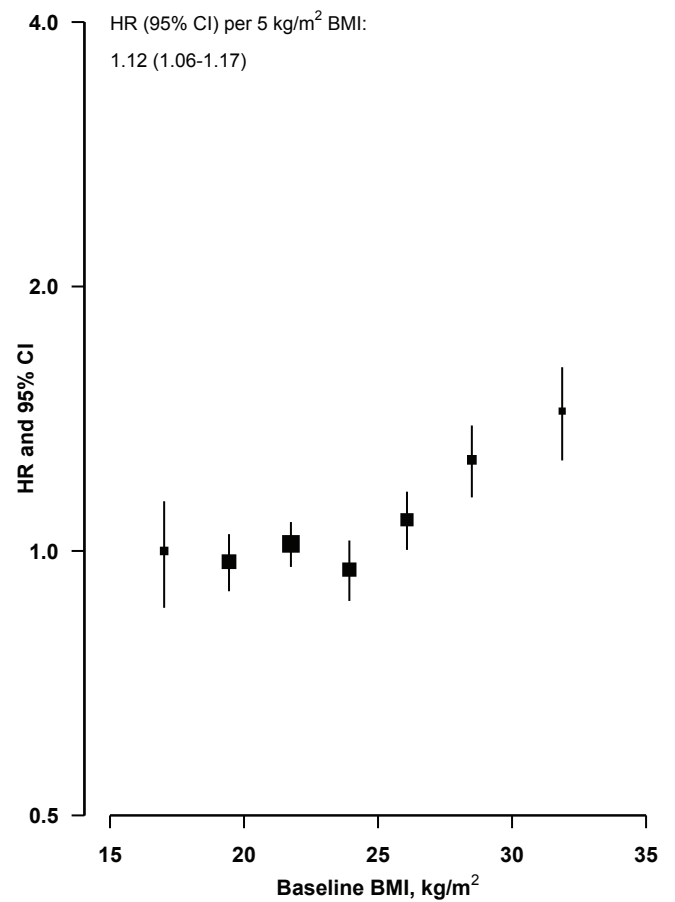
a) Ischaemic stroke

(11,815 events)

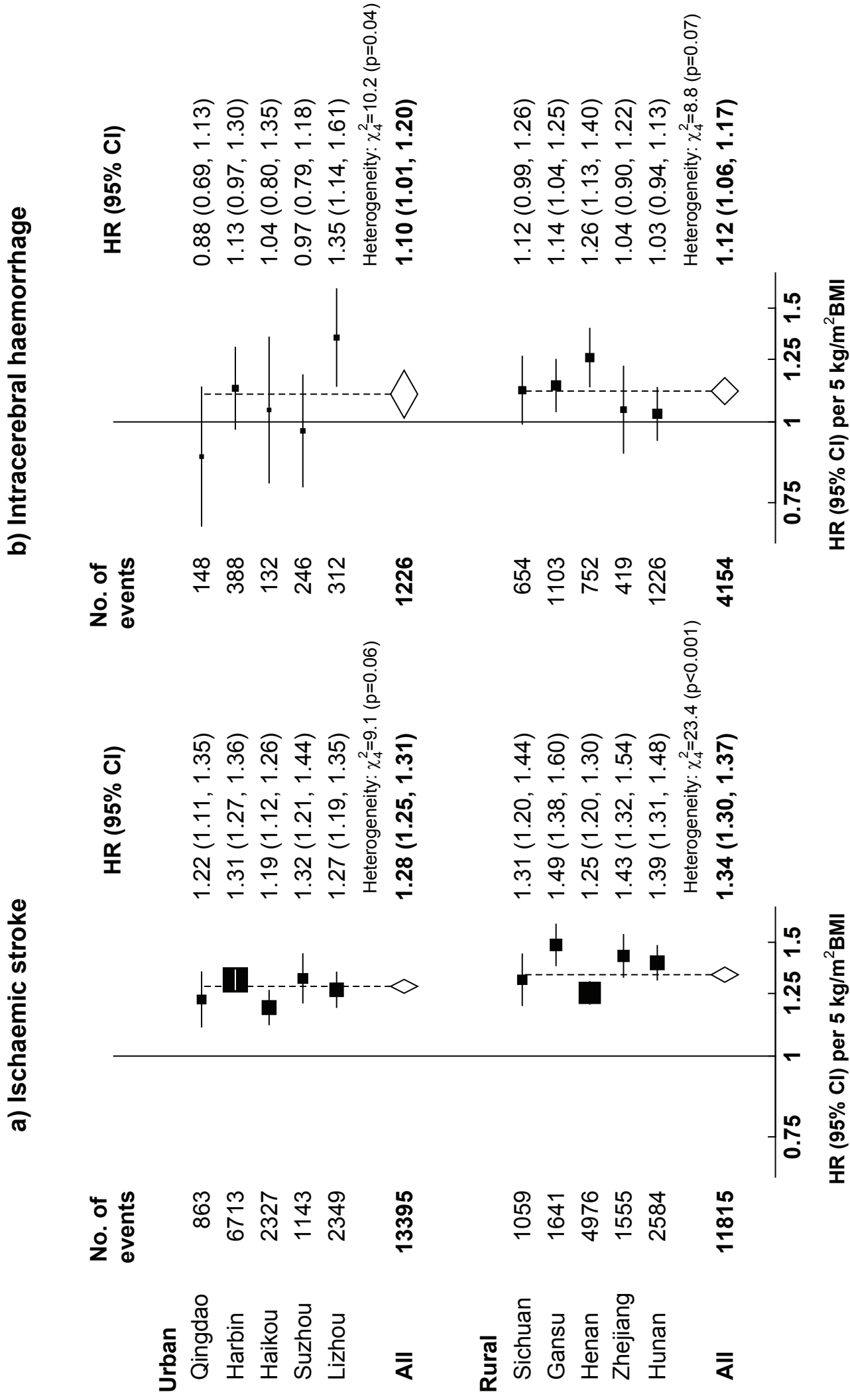


b) Intracerebral haemorrhage

(4,154 events)



Supplemental Figure S3. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage per 5 kg/m² higher baseline BMI by study areas

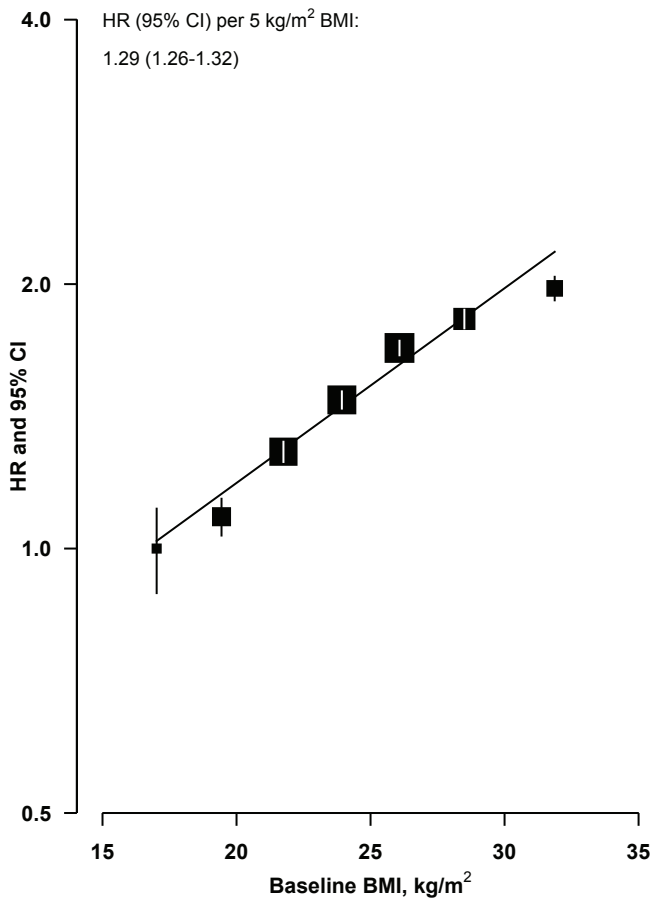


Supplemental Figure S4. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by baseline BMI, in never and ever regular smokers

i) Never smokers

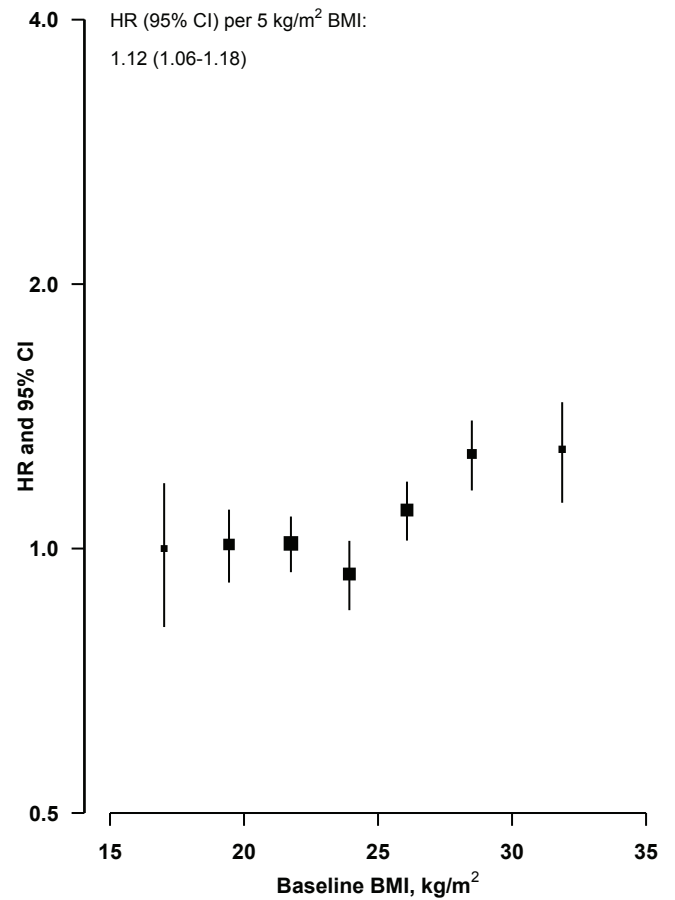
a) Ischaemic stroke

(16,086 events)



b) Intracerebral haemorrhage

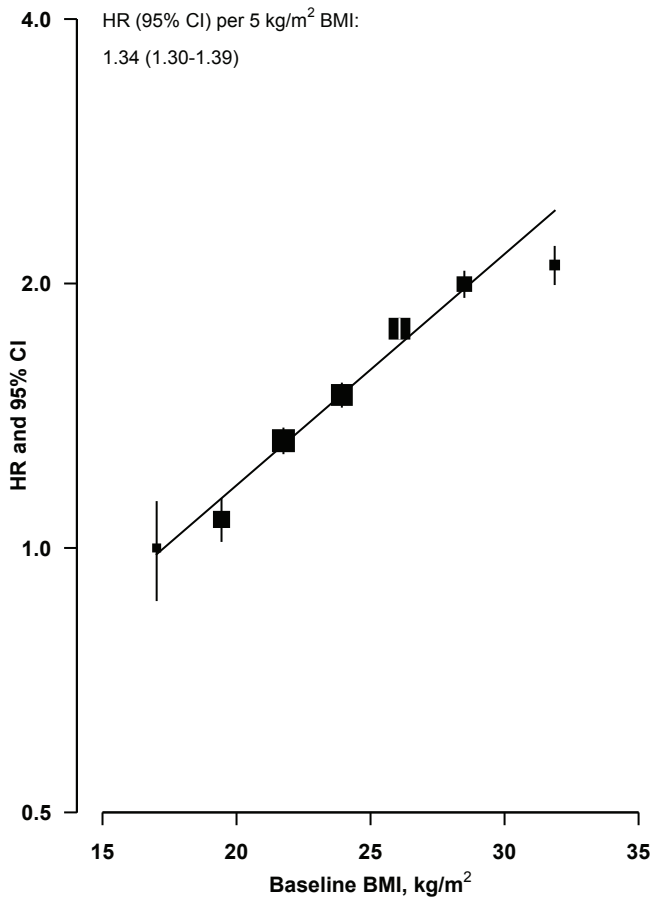
(3,053 events)



ii) Ever regular smokers

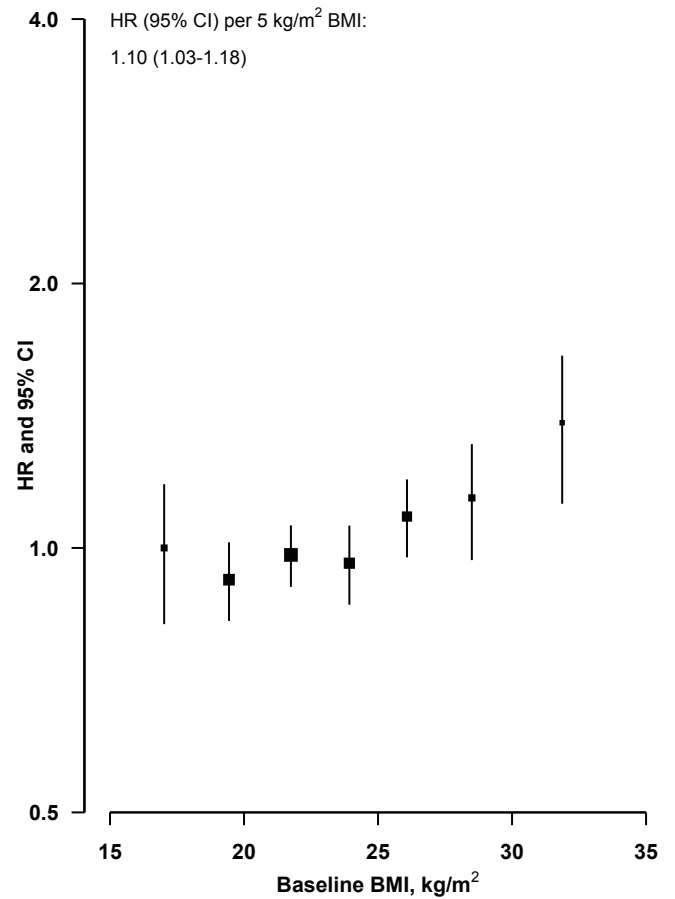
a) Ischaemic stroke

(9,124 events)

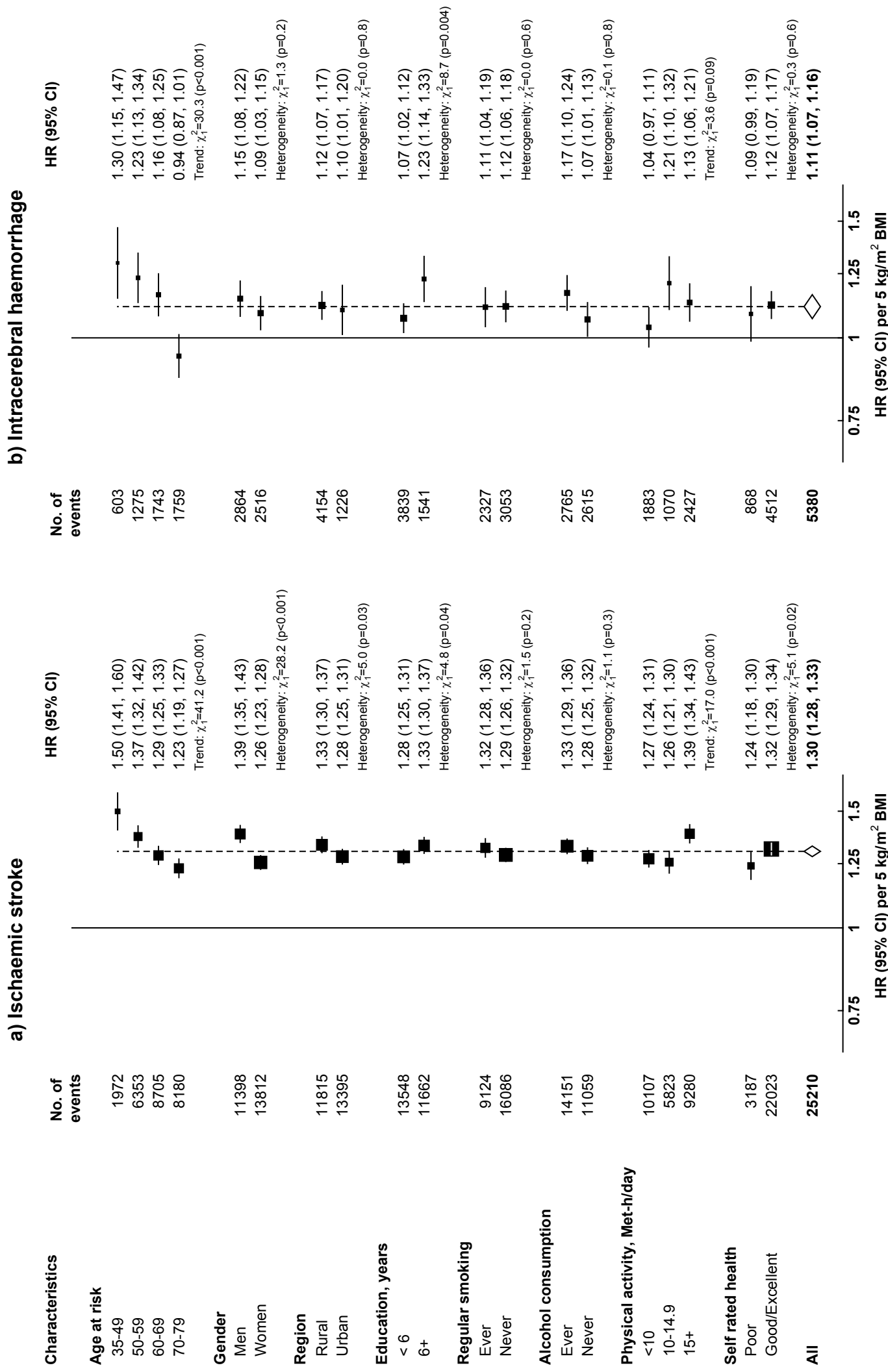


b) Intracerebral haemorrhage

(2,327 events)



Supplemental Figure S5. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage per 5 kg/m² higher baseline BMI by baseline characteristics



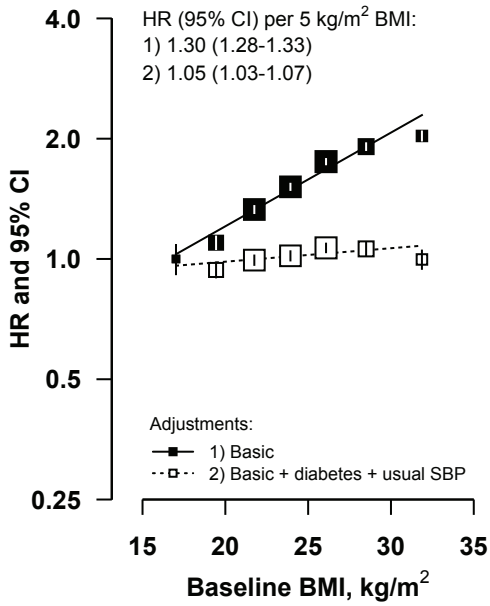
Supplemental Table S3: Adjusted HRs of ischaemic stroke and intracerebral haemorrhage by baseline BMI, with stepwise exclusions

Exclusions	No. of events	Categories of baseline BMI (kg/m ²)							
		<18.0	18.0 to <20.5	20.5 to <23.0	23.0 to <25.0	25.0 to <27.5	27.5 to <30.0	≥30.0	
Ischaemic stroke									
any prior diseases*	13954	1.00 (0.90-1.11)	1.05 (1.00-1.10)	1.21 (1.17-1.26)	1.39 (1.34-1.44)	1.58 (1.52-1.64)	1.72 (1.64-1.81)	1.69 (1.56-1.83)	
+ self-reported poor health status	12725	1.00 (0.89-1.12)	1.04 (0.99-1.09)	1.19 (1.15-1.23)	1.37 (1.32-1.42)	1.56 (1.51-1.62)	1.72 (1.63-1.82)	1.71 (1.57-1.86)	
+ first three-years of follow-up	10061	1.00 (0.87-1.14)	1.08 (1.01-1.14)	1.21 (1.17-1.26)	1.40 (1.34-1.46)	1.60 (1.54-1.67)	1.80 (1.69-1.91)	1.80 (1.64-1.97)	
+ ever smokers	6380	1.00 (0.84-1.19)	1.15 (1.07-1.24)	1.23 (1.17-1.30)	1.41 (1.34-1.49)	1.61 (1.53-1.70)	1.87 (1.75-2.01)	1.86 (1.67-2.07)	
Intracerebral haemorrhage									
any prior diseases*	2908	1.00 (0.84-1.20)	1.01 (0.93-1.10)	1.02 (0.95-1.09)	0.97 (0.90-1.06)	1.06 (0.97-1.16)	1.15 (1.00-1.32)	1.24 (1.01-1.54)	
+ self-reported poor health status	2587	1.00 (0.82-1.22)	1.07 (0.98-1.18)	1.03 (0.96-1.11)	1.00 (0.92-1.09)	1.09 (0.99-1.20)	1.17 (1.02-1.36)	1.27 (1.01-1.60)	
+ first three-years of follow-up	1778	1.00 (0.78-1.28)	1.04 (0.93-1.16)	1.04 (0.95-1.13)	1.01 (0.92-1.12)	1.04 (0.93-1.17)	1.18 (1.00-1.41)	1.20 (0.90-1.59)	
+ ever smokers	1013	1.00 (0.70-1.42)	1.21 (1.04-1.40)	1.17 (1.04-1.31)	1.04 (0.91-1.19)	1.10 (0.95-1.28)	1.27 (1.02-1.57)	1.21 (0.86-1.70)	

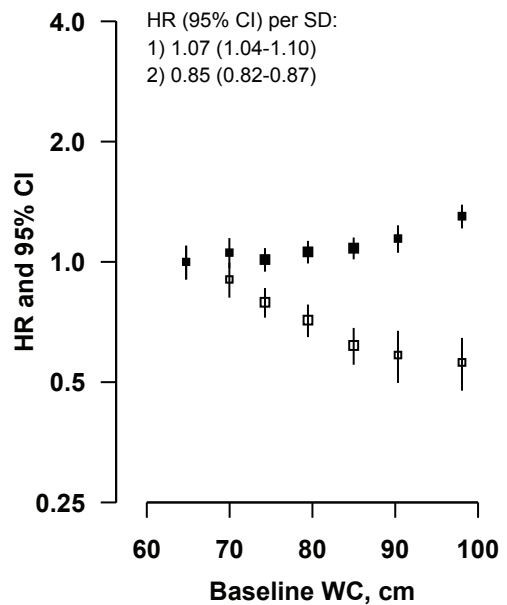
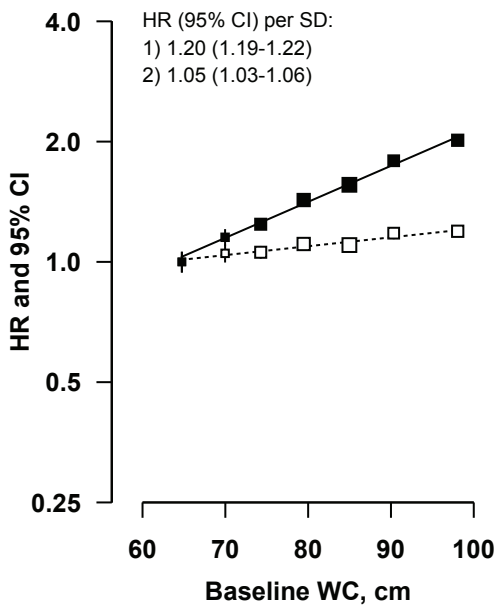
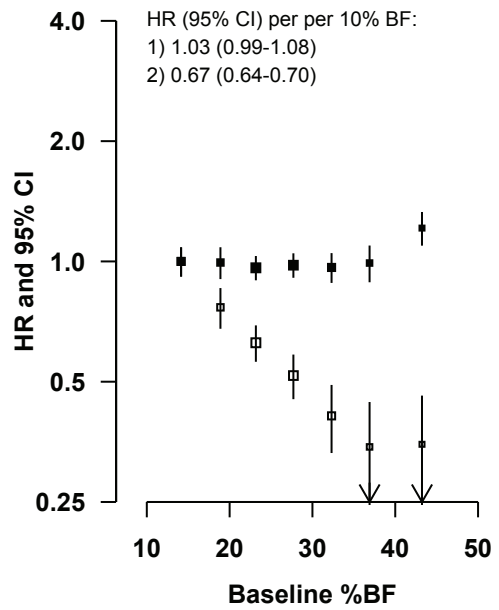
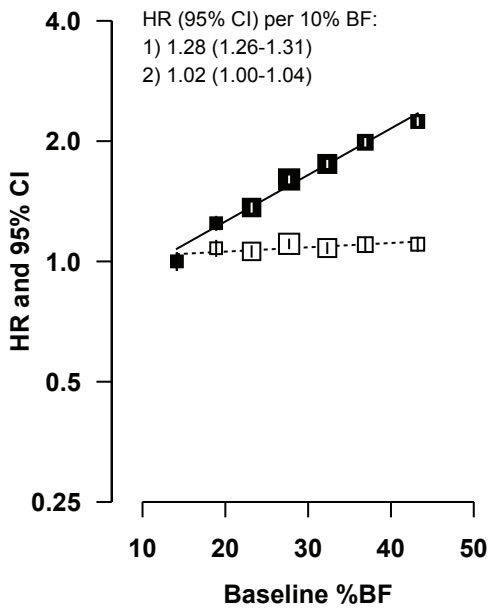
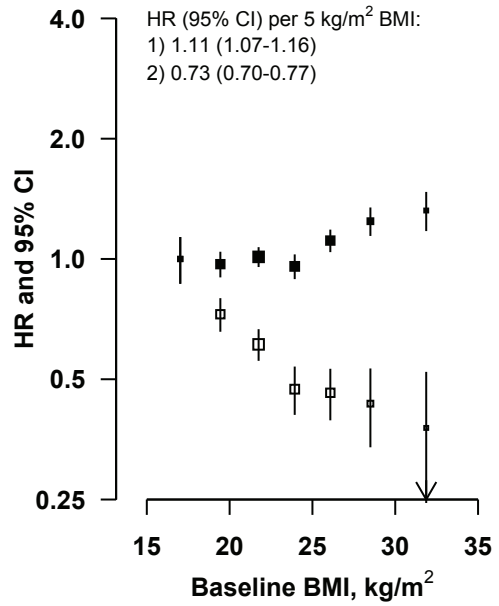
* As well as CVD, the analyses further excluded those with prior history of self-reported physician-diagnosed cancer, chronic respiratory diseases, chronic renal diseases, peptic ulcer, chronic hepatitis and cirrhosis and gallbladder disease.

Supplemental Figure S6. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by baseline BMI, %BF and WC, with and without adjustment for mediators

a) Ischaemic stroke
(25,210 events)



b) Intracerebral haemorrhage
(5,380 events)



Supplemental Table S4: Adjusted HRs for ischaemic stroke, intracerebral haemorrhage and total stroke associated with 1 SD difference in baseline adiposity measures, with and without adjustments for main mediators

1 SD value	Ischaemic stroke		Intracerebral haemorrhage		All stroke	
	Model 1*	Model 2 [†]	Model 1*	Model 2 [†]	Model 1*	Model 2 [†]
	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)
BMI	3.18 1.19 (1.18-1.21)	1.03 (1.01-1.04)	1.09 (1.06-1.12)	0.82 (0.79-0.85)	1.17 (1.16-1.19)	0.99 (0.98-1.00)
WC	8.97 1.21 (1.20-1.23)	1.05 (1.04-1.07)	1.09 (1.06-1.13)	0.86 (0.83-0.89)	1.19 (1.17-1.20)	1.01 (1.00-1.03)
WHR	0.06 1.19 (1.17-1.21)	1.06 (1.05-1.08)	1.13 (1.10-1.17)	0.95 (0.92-0.98)	1.18 (1.16-1.19)	1.04 (1.03-1.05)
%BF	6.42 1.20 (1.18-1.21)	1.02 (1.01-1.04)	1.04 (1.01-1.08)	0.77 (0.75-0.80)	1.16 (1.15-1.18)	0.97 (0.96-0.99)

* HRs were stratified by age, sex and area, and adjusted for education, smoking, alcohol drinking, physical activity and self-rated health status.

[†] HRs were additionally adjusted for usual SBP and diabetes status at baseline.

Supplemental Table S5: Adjusted HRs for ischaemic stroke, intracerebral haemorrhage and total stroke associated with 1 SD difference in adiposity measures, with and without correction for regression dilution bias

	SD	Ischaemic stroke		Intracerebral haemorrhage		All stroke	
		Baseline* HR (95% CI)	Usual† HR (95% CI)	Baseline* HR (95% CI)	Usual† HR (95% CI)	Baseline* HR (95% CI)	Usual† HR (95% CI)
BMI	3.18	1.19 (1.18-1.21)	1.21 (1.19-1.23)	1.09 (1.06-1.12)	1.10 (1.06-1.13)	1.17 (1.16-1.19)	1.18 (1.17-1.21)
WC	8.97	1.21 (1.20-1.23)	1.26 (1.25-1.28)	1.09 (1.06-1.13)	1.11 (1.07-1.16)	1.19 (1.17-1.20)	1.23 (1.21-1.25)
WHR	0.06	1.19 (1.17-1.21)	1.31 (1.27-1.34)	1.13 (1.10-1.17)	1.21 (1.16-1.27)	1.18 (1.16-1.19)	1.29 (1.26-1.31)
%BF	6.42	1.20 (1.18-1.21)	1.25 (1.22-1.26)	1.04 (1.01-1.08)	1.05 (1.01-1.10)	1.16 (1.15-1.18)	1.20 (1.18-1.22)

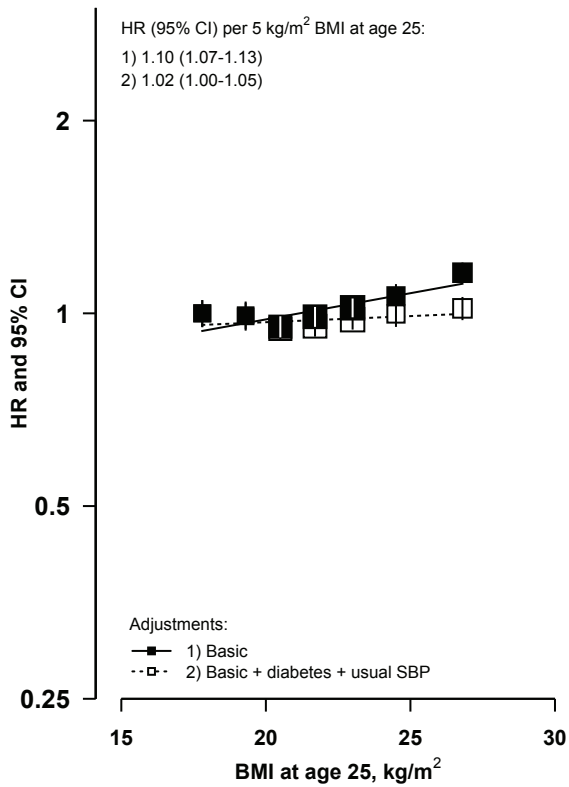
* HRs were stratified by age, sex and area, and adjusted for education, smoking, alcohol drinking, physical activity and self-rated health status.

† HRs were additionally corrected for regression dilution bias using self-correlation coefficients between baseline and 1st resurvey ($r_{BMI}=0.93$, $r_{WC}=0.83$, $r_{WHR}=0.65$, $r_{\%BF}=0.83$).

Supplemental Figure S7. Adjusted HRs for a) ischaemic stroke and b) intracerebral haemorrhage by BMI at age 25 and BMI change, with and without adjustment for mediators

a) Ischaemic stroke

(21,001 events)



b) Intracerebral haemorrhage

(3,816 events)

