

## On-Line Data Supplement

### **Longitudinal patterns of blood pressure, incident cardiovascular events and all-cause mortality in normotensive diabetic persons**

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**Short title:** blood pressure and diabetes

**Content:** Supplementary Table S1-S5

Supplementary Figure S1-S3

**Table S1 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs)  
for all-cause mortality and primary cardiovascular outcomes based on blood  
pressure status at baseline (2006) during 2006-2014**

Outcomes	BP<120/80 versus BP of 120-139/80-89mmHg , HR (95%CI)			
	All-cause mortality	Cardiovascular events	Myocardial infarction	Stroke
Case number <sup>*</sup> , n	81/166	40/137	12/36	28/106
Model 1 <sup>†</sup>	1.46 (1.12-1.91)	0.85 (0.60-1.22)	1.02 (0.53-1.96)	0.76 (0.50-1.16)
Model 2 <sup>‡</sup>	1.42 (1.08-1.88)	0.84 (0.58-1.20)	0.99 (0.50-1.93)	0.75 (0.49-1.15)
Model 3 <sup>§</sup>	1.46 (1.10-1.93)	0.83 (0.58-1.19)	0.96 (0.49-1.88)	0.75 (0.49-1.14)
Sensitivity analysis				
Model 4 <sup>  </sup>	1.39 (0.99-1.95)	1.07 (0.71-1.62)	1.16 (0.56-2.40)	0.94 (0.57-1.55)
Model 5 <sup>¶</sup>	1.50 (1.12-2.01)	0.79 (0.54-1.16)	0.80 (0.39-1.66)	0.74 (0.47-1.17)
Model 6 <sup>#</sup>	1.49 (1.12-1.98)	0.81 (0.56-1.17)	0.96 (0.49-1.89)	0.72 (0.47-1.11)

Abbreviations: BP, blood pressure; HR, hazard ratios; CI, confidence interval.

<sup>\*</sup>The case number in BP<120/80 group versus that in BP of 120-139/80-89mmHg group.

<sup>†</sup>Model1: adjusted for age, sex and glucose-lowering therapy.

<sup>‡</sup>Model2: adjustments as in model1 plus smoking status (never, former, occasional or daily smoker), body mass index, physical activity (inactive, moderately active or vigorously active), low density lipoprotein cholesterol (mg/dL), high density lipoprotein cholesterol (mg/dL), triglyceride (mg/dL) and high sensitivity C-reactive protein (mg/L).

§Model3: adjustments as in model2 plus alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), fasting blood glucose and estimated Glomerular Filtration Rate (eGFR).

||Model4: adjusted for model3 after excluding individuals receiving glucose-lowering therapy.

¶Model5: adjusted for model3 after excluding individuals using lipid-lowering drugs.

#Model6: adjusted for model3 after excluding individuals with eGFR<30 ml/minute/1.73 m<sup>2</sup>.

**Table S2 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs)  
of change in blood pressure with risk of all-cause mortality during 2008-2014**

	Change in BP status, mmHg (from 2006 to 2008), HR (95% CI)					
	Stable <120/80	<120/80→ 120-139/80-89	<120/80→ ≥140/90	120-139/80-89 →<120/80	Stable 120- 139/80-89	120-139/80-89 →≥140/90
	12/200	11/260	8/148	17/236	23/725	40/742
Case number/total, n						
Model 1*	2.05 (1.01- 4.15)	1.39 (0.68- 2.85)	1.71 (0.76- 3.83)	2.70 (1.44- 5.07)	1 (reference)	1.46 (0.88- 2.45)
Model 2†	2.44 (1.16- 5.12)	1.23 (0.58- 2.61)	1.79 (0.79- 4.06)	2.81 (1.47- 5.37)	1 (reference)	1.55 (0.92-2.62)
Model 3‡	2.35 (1.10- 5.01)	1.29 (0.60- 2.77)	2.05 (0.89- 4.70)	3.04 (1.56- 5.92)	1 (reference)	1.63 (0.96-2.77)
Sensitivity analysis						
Model 4§	0.92 (0.20- 4.25)	1.24 (0.44- 3.51)	3.05 (1.14- 8.18)	2.75 (1.21- 6.24)	1 (reference)	1.65 (0.87-3.14)
Model 5	2.44 (1.08- 5.51)	1.21 (0.54- 2.70)	2.44 (1.04- 5.68)	2.81 (1.38- 5.75)	1 (reference)	1.64 (0.95- 2.83)
Model 6¶	2.39 (1.09- 5.21)	1.36 (0.63- 2.93)	2.20 (0.95- 5.08)	3.20 (1.63- 6.28)	1 (reference)	1.69 (0.98- 2.89)
Model 7#	1.95 (0.81-	1.43 (0.63-	2.14 (0.87-	3.89 (1.93-	1 (reference)	1.50 (0.84-

	4.69)	3.24)	5.23)	7.85)		2.70)
Model 8**	1.61 (0.69-	0.91 (0.38-	2.02 (0.82-	2.26 (1.09-	1 (reference)	1.23 (0.64-
	3.75)	2.17)	4.97)	4.71)		2.33)
Model 9***	2.25 (1.05-	1.36 (0.63-	2.17 (0.95-	2.89 (1.48-	1 (reference)	1.63 (0.96-
	4.86)	2.93)	4.98)	5.64)		2.77)

Abbreviations: BP, blood pressure; HR, hazard ratios; CI, confidence interval.

\*Model1: adjusted for age, sex and glucose-lowering therapy.

†Model2: adjustments as in model1 plus smoking status (never, former, occasional or daily smoker), body mass index, physical activity (inactive, moderately active or vigorously active), low density lipoprotein cholesterol (mg/dL), high density lipoprotein cholesterol (mg/dL), triglyceride (mg/dL) and high sensitivity C-reactive protein (mg/L).

‡Model3: adjustments as in model2 plus alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), fasting blood glucose and estimated Glomerular Filtration Rate (eGFR).

§Model4: adjusted for model3 after excluding individuals receiving glucose-lowering therapy.

||Model5: adjusted for model3 after excluding individuals using lipid-lowering drugs.

¶Model6: adjusted for model3 after excluding individuals with eGFR<30 ml/minute/1.73 m<sup>2</sup>.

#Model7: adjusted for model3 after excluding individuals who suffered cardiovascular

diseases during 2008-2012.

\*\*Model8: adjusted for model3 after excluding individuals who developed hypertension during 2008-2012.

\*\*\*Model9: adjusted for model3 after excluding individuals who with hypotension (SBP<90mmHg or DBP<60mmHg).

**Table S3 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs)  
of change in blood pressure with risk of primary cardiovascular outcomes  
during 2008-2014**

	Change in BP status, mmHg (from 2006 to 2008), HR (95% CI)					
	Stable	<120/80→	<120/80→	120-139/80-89	Stable 120-	120-139/80-89
	<120/80	120-139/80-89	≥140/90	→<120/80	139/80-89	→≥140/90
Case	7/200	8/260	8/148	9/236	28/725	55/742
number/total, n						
Model 1*	0.97 (0.42- 2.23)	0.82 (0.37- 1.81)	1.38 (0.63- 3.04)	1.03 (0.49- 2.18)	1 (reference)	1.81 (1.15- 2.86)
Model 2†	1.04 (0.44- 2.45)	0.81 (0.37- 1.79)	1.38 (0.62- 3.05)	0.97 (0.45- 2.07)	1 (reference)	1.89 (1.19-3.02)
Model 3‡	1.06 (0.45- 2.50)	0.84 (0.38- 1.87)	1.46 (0.65- 3.29)	0.99 (0.46- 2.12)	1 (reference)	1.98 (1.24-3.17)
Sensitivity analysis						
Model 4§	1.11 (0.31- 3.97)	1.54 (0.65- 3.65)	3.09 (1.29- 7.40)	1.00 (0.36- 2.77)	1 (reference)	2.28 (1.27-4.09)
Model 5	0.62 (0.21- 1.82)	0.86 (0.38- 1.92)	1.56 (0.69- 3.53)	1.03 (0.48- 2.23)	1 (reference)	1.85 (1.14- 3.00)
Model 6¶	0.91 (0.37- 2.27)	0.84 (0.38- 1.86)	1.47 (0.65- 3.31)	0.98 (0.46- 2.11)	1 (reference)	1.99 (1.24- 3.18)

Abbreviations: BP, blood pressure; HR, hazard ratios; CI, confidence interval.

\*Model1: adjusted for age, sex and glucose-lowering therapy.

†Model2: adjustments as in model1 plus smoking status (never, former, occasional or daily smoker), body mass index, physical activity (inactive, moderately active or vigorously active), low density lipoprotein cholesterol (mg/dL), high density lipoprotein cholesterol (mg/dL), triglyceride (mg/dL) and high sensitivity C-reactive protein (mg/L).

‡Model3: adjustments as in model2 plus alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), fasting blood glucose and estimated Glomerular Filtration Rate (eGFR).

§Model4: adjusted for model3 after excluding individuals receiving glucose-lowering therapy.

||Model5: adjusted for model3 after excluding individuals using lipid-lowering drugs.

¶Model6: adjusted for model3 after excluding individuals with eGFR<30 ml/minute/1.73 m<sup>2</sup>.



**Table S4 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs) of change in blood pressure with risk of myocardial infarction during 2008-2014**

	Change in BP status, mmHg (from 2006 to 2008), HR (95% CI)					
	Stable <120/80	<120/80→ 120-139/80-89	<120/80→ ≥140/90	120-139/80-89 →<120/80	Stable 120- 139/80-89	120-139/80-89 →≥140/90
	Case number/total, n	2/200	2/260	1/148	0/236	6/725
Model 1*	1.42 (0.28- 7.12)	0.99 (0.20- 4.93)	0.85 (0.10- 7.05)	—	1 (reference)	2.67 (1.05- 6.78)
Model 2†	1.87 (0.36- 9.82)	0.94 (0.19- 4.73)	0.82 (0.10- 6.91)	—	1 (reference)	2.84 (1.10-7.37)
Model 3‡	1.69 (0.31- 9.11)	0.76 (0.14- 4.24)	0.68 (0.07- 6.59)	—	1 (reference)	3.34 (1.27-8.83)
Sensitivity analysis						
Model 4§	4.69 (0.68- 32.5)	2.17 (0.33- 14.1)	2.14 (0.21- 22.4)	—	1 (reference)	5.15 (1.40-19.0)
Model 5	0.65 (0.07- 5.95)	0.78 (0.14- 4.39)	0.69 (0.07- 6.58)	—	1 (reference)	3.16 (1.18- 8.42)
Model 6¶	1.69 (0.31- 9.10)	0.76 (0.14- 4.23)	0.67 (0.07- 6.54)	—	1 (reference)	3.33 (1.26- 8.80)

Abbreviations: BP, blood pressure; HR, hazard ratios; CI, confidence interval.

\*Model1: adjusted for age, sex and glucose-lowering therapy.

†Model2: adjustments as in model1 plus smoking status (never, former, occasional or daily smoker), body mass index, physical activity (inactive, moderately active or vigorously active), low density lipoprotein cholesterol (mg/dL), high density lipoprotein cholesterol (mg/dL), triglyceride (mg/dL) and high sensitivity C-reactive protein (mg/L).

‡Model3: adjustments as in model2 plus alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), fasting blood glucose and estimated Glomerular Filtration Rate (eGFR).

§Model4: adjusted for model3 after excluding individuals receiving glucose-lowering therapy.

||Model5: adjusted for model3 after excluding individuals using lipid-lowering drugs.

¶Model6: adjusted for model3 after excluding individuals with eGFR<30 ml/minute/1.73 m<sup>2</sup>.

**Table S5 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs)  
of change in blood pressure with risk of stroke during 2008-2014**

Case	Change in BP status, mmHg (from 2006 to 2008), HR (95% CI)					
	Stable <120/80	<120/80→ 120-139/80-89	<120/80→ ≥140/90	120-139/80-89 →<120/80	Stable 120- 139/80-89	120-139/80-89 →≥140/90
	5/200	6/260	7/148	9/236	24/725	40/742
number/total, n						
Model 1*	0.78 (0.30- 2.06)	0.72 (0.29- 1.75)	1.39 (0.60- 3.23)	1.20 (0.56-2.59)	1 (reference)	1.51 (0.91- 2.50)
Model 2†	0.82 (0.30- 2.21)	0.70 (0.28- 1.73)	1.40 (0.60- 3.29)	1.13 (0.52-2.47)	1 (reference)	1.57 (0.94-2.65)
Model 3‡	0.86 (0.32- 2.33)	0.75 (0.30- 1.87)	1.53 (0.65- 3.64)	1.17 (0.53- 2.58)	1 (reference)	1.65 (0.97-2.78)
Sensitivity analysis						
Model 4§	0.45 (0.06- 3.51)	1.44 (0.54- 3.81)	3.17 (1.23- 8.18)	1.16 (0.41- 3.30)	1 (reference)	1.74 (0.90-3.37)
Model 5	0.54 (0.16- 1.87)	0.77 (0.31- 1.91)	1.66 (0.69- 3.99)	1.25 (0.56- 2.75)	1 (reference)	1.50 (0.87- 2.58)
Model 6¶	0.69 (0.23- 2.05)	0.75 (0.30- 1.86)	1.55 (0.65- 3.68)	1.16 (0.53-2.55)	1 (reference)	1.65 (0.97- 2.78)

Abbreviations: BP, blood pressure; HR, hazard ratios; CI, confidence interval.

\*Model1: adjusted for age, sex and glucose-lowering therapy.

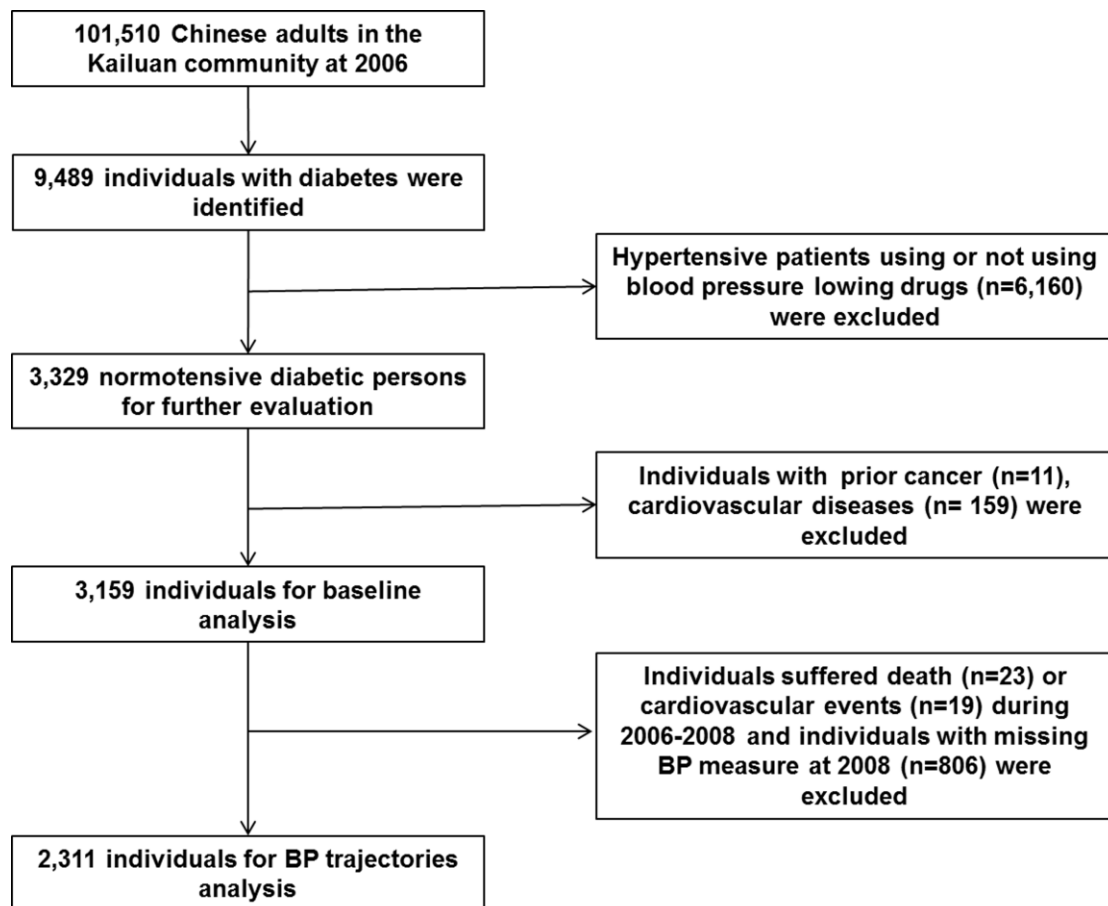
†Model2: adjustments as in model1 plus smoking status (never, former, occasional or daily smoker), body mass index, physical activity (inactive, moderately active or vigorously active), low density lipoprotein cholesterol (mg/dL), high density lipoprotein cholesterol (mg/dL), triglyceride (mg/dL) and high sensitivity C-reactive protein (mg/L).

‡Model3: adjustments as in model2 plus alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), fasting blood glucose and estimated Glomerular Filtration Rate (eGFR).

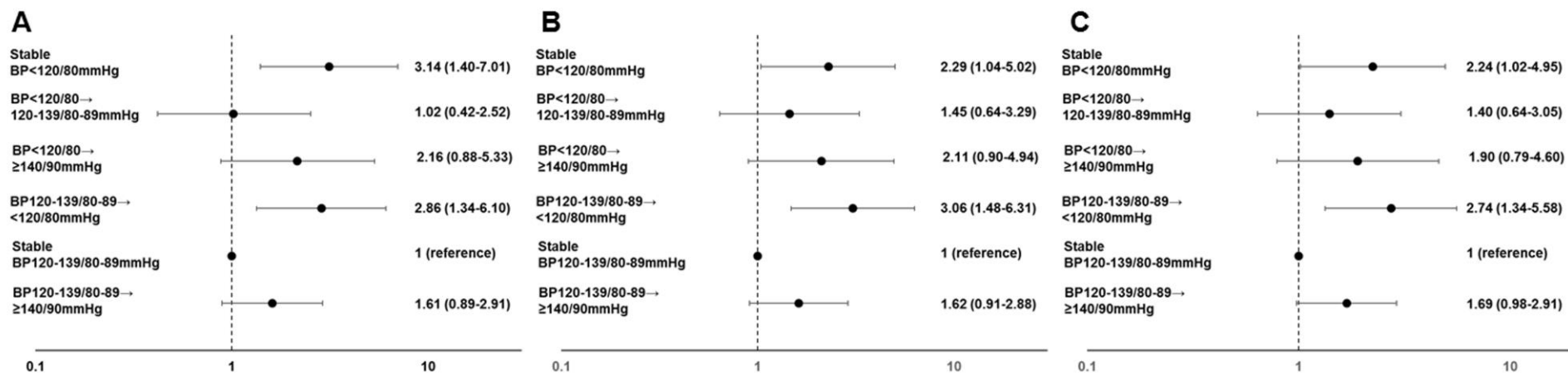
§Model4: adjusted for model3 after excluding individuals receiving glucose-lowering therapy.

||Model5: adjusted for model3 after excluding individuals using lipid-lowering drugs.

¶Model6: adjusted for model3 after excluding individuals with eGFR<30 ml/minute/1.73 m<sup>2</sup>.

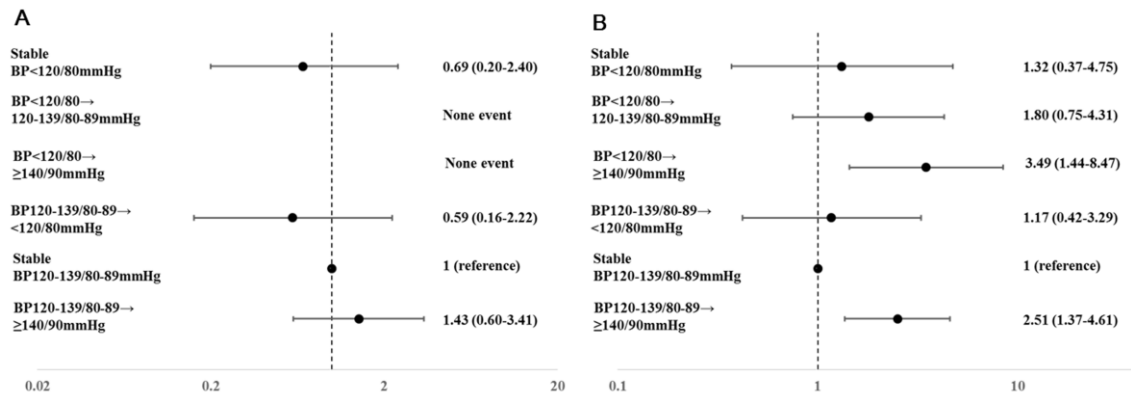


**Figure S1** Flow chart of the participants with diabetes utilized in this study.



**Figure S2 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs) of all-cause mortality during 2008-2014 according to blood pressure trajectories from 2006 to 2008 after exclusion of new onset cancers (Figure S2A), annual weight loss >5% from 2006 to 2008 (Figure S2B) and body mass index <18.5 kg/m<sup>2</sup> at baseline (Figure S2C). All models were adjusted for age (years), sex, smoking status (never, former, occasional or daily), glucose-lowering therapy, body mass index (kg/m<sup>2</sup>), high density lipoprotein cholesterol (mmol/L), low density lipoprotein cholesterol (mmol/L), triglyceride (mmol/L), alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), physical activity (inactive, moderately**

active or vigorously active), high sensitivity C-reactive protein (mg/L), fasting blood glucose (mmol/L) and estimated Glomerular Filtration Rate (eGFR)( mL/min/1.73m<sup>2</sup>).



**Figure S3 Adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs) of cardiovascular events during 2008-2014 according to blood pressure trajectories from 2006 to 2008 in individuals diagnosed prior to recruitment (Figure S3A) and in undiagnosed diabetic persons (Figure S3B).** Primary cardiovascular outcomes included fatal or non-fatal myocardial infarction events and fatal or non-fatal stroke events. All models were adjusted for age (years), sex, smoking status (never, former, occasional or daily), glucose-lowering therapy, body mass index (kg/m<sup>2</sup>), high density lipoprotein cholesterol (mmol/L), low density lipoprotein cholesterol (mmol/L), triglyceride (mmol/L), alcohol consumption (never, former, occasional or daily), educational level (primary, middle/high school or college/university), occupation (white collar, coalminer or blue collar), physical activity (inactive, moderately active or vigorously active), high sensitivity C-reactive protein (mg/L), fasting blood glucose (mmol/L) and estimated Glomerular Filtration Rate (eGFR)( mL/min/1.73m<sup>2</sup>).