## **Supplementary Appendix**

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Supplementary Table 1. Numbers and proportions of participants with multiple cardiometabolic disorders according to HOMA-IR quintiles

quintiles								
Number of cardiometabolic	HOMA-IR quintiles							
disorders Quintile 1		Quintile 2 Quintile 3 Quintile 4			Quintile 5			
0								
Number of participants	6127	5666	4816	3703	1885			
Proportion (95% CI)	34.9 (34.0-35.9)	33.3 (32.4-34.3)	29.3 (28.4-30.2)	23.9 (23.1-24.8)	13.0 (12.3-13.7)			
1								
Number of participants	8165	7581	6983	6038	4362			
Proportion (95% CI)	43.7 (42.8-44.7)	41.0 (40.1-42.0)	39.2 (38.3-40.2)	35.2 (34.2-36.1)	26.0 (25.2-26.9)			
2								
Number of participants	3540	4009	4618	5333	5776			
Proportion (95% CI)	roportion (95% CI) 17.2 (16.5-17.9)		19.1 (18.4-19.9) 21.5 (20.8-22.2)		30.4 (29.5-31.3)			
3								
Number of participants	850	1361	2131	3197	4953			
Proportion (95% CI) 3.8 (3.5-4.1)		6.0 (5.6-6.4) 9.2 (8.7-9.7)		13.7 (13.1-14.3)	22.9 (22.2-23.7)			
4								
Number of participants	55	121	192	468	1760			
Proportion (95% CI)	0.3 (0.2-0.4)	0.5 (0.4-0.6)	0.8 (0.6-0.9)	1.9 (1.7-2.1)	7.7 (7.2-8.1)			

Prevalences (95% CIs) were weighted to represent the overall Chinese adult population aged 18 years or older.

The number of cardiometabolic disorders for each participant was the presence number of obesity or central obesity, diabetes, dyslipidemia, and hypertension. For each cardiometabolic disorder, the participants received 1 if this disorder presented, and 0 otherwise.

Supplementary Table 2. Numbers and proportions of participants with multiple cardiometabolic disorders according to HOMA-B quintiles

Number of cardiometabolic	HOMA-B quintiles						
disorders	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5		
0							
Number of participants	per of participants 4606		4967 4591		3814		
Proportion (95% CI)	25.8 (25.0-26.6)	29.5 (28.6-30.4)	27.7 (26.8-28.6)	26.2 (25.3-27.1)	23.3 (22.5-24.2)		
1							
Number of participants	Number of participants 7008		6669	6361	6104		
Proportion (95% CI)	38.5 (37.5-39.4)	37.9 (36.9-38.8)	37.1 (36.2-38.0)	35.9 (34.9-36.8)	34.5 (33.6-35.5)		
2							
Number of participants 4245		4261	4650	4908	5212		
Proportion (95% CI)	• •		22.1 (21.4-22.9)	23.7 (22.9-24.5)	25.9 (25.1-26.8)		
3							
Number of participants	2074	2022	2383	2798	3215		
Proportion (95% CI) 10.1 (9.6-10.7)		9.2 (8.7-9.7) 10.9 (10.4-11.5)		12.2 (11.6-12.8)	14.6 (14.0-15.2)		
4							
Number of participants	804	502	446	451	393		
Proportion (95% CI)	4.0 (3.6-4.3)	2.2 (2.0-2.4)	2.1 (1.8-2.4)	2.0 (1.8-2.2)	1.6 (1.4-1.8)		

Prevalences (95% CIs) were weighted to represent the overall Chinese adult population aged 18 years or older.

The number of cardiometabolic disorders for each participant was the presence number of obesity or central obesity, diabetes, dyslipidemia, and hypertension. For each cardiometabolic disorder, the participants received 1 if this disorder presented, and 0 otherwise.

Supplementary Table 3. Prevalences of cardiometabolic disorders according to joint categories of HOMA-IR and HOMA-B

Cardiometabolic	HOMA-IR/H	HOMA-IR/HOMA-B levels								
disorders	Low/	Low/	Low/	Median/	Median/	Median/	High/	High/	High/	
	High	Median	Low	High	Median	Low	High	Median	Low	
Number of	6897	16291	14287	16459	17753	3267	14119	3434	1183	
participants			14287							
Obesity or central	20.9	17.6	15.4	33.7	32.3	35.3	55.5	60.8	61.4	
obesity	(19.7-22.2)	(16.9-18.3)	(14.7-16.2)	(32.8-34.6)	(31.4-33.2)	(33.2-37.3)	(54.4-56.6)	(58.6-63.0)	(57.6-65.2)	
Diabetes	1.4	2.0	7.7	1.9	4.9	43.5	10.7	46.2	97.6	
	(1.1-1.7)	(1.7-2.3)	(7.1-8.3)	(1.6-2.1)	(4.5-5.3)	(41.3-45.6)	(10.0-11.3)	(44.0-48.4)	(96.4-98.8)	
Dyslipidemia	45.5	45.2	43.6	52.2	51.6	52.3	64.4	65.5	72.9	
	(43.8-47.1)	(44.2-46.2)	(42.5-44.7)	(51.2-53.3)	(50.7-52.6)	(50.1-54.5)	(63.3-65.5)	(63.4-67.6)	(69.4-76.3)	
Hypertension	21.9	26.5	36.0	26.4	35.5	46.8	39.5	55.1	59.5	
	(20.7-23.2)	(25.7-27.4)	(35.0-37.0)	(25.5-27.2)	(34.6-36.4)	(44.6-48.9)	(38.4-40.5)	(52.8-57.3)	(55.6-63.3)	

Prevalences (95% CIs) were weighted to represent the overall Chinese adult population aged 18 years or older.

HOMA-IR and HOMA-B levels were divided by the respective quintiles: for HOMA-IR levels, low refers to quintile 1 and 2, median refers to quintile 3 and 4, and high refers to quintile 5; for HOMA-B levels, low refers to quintile 1; median refers to quintile 2 and 3; and high refers to quintile 4 and 5.