

## **Metabolic syndrome and disability: findings from the prospective three-city study.**

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## Online Supplemental Material

Appendix- Table A: Association between metabolic syndrome components mutually adjusted for metabolic syndrome and social restriction, mobility and IADL limitations.

	Social restriction N=5893			Mobility N=3497			IADL N=5764		
	OR*	95%CI	p-value	OR*	95%CI	p-value	OR*	95%CI	p-value
Central obesity									
MetS adj. for central obesity	1.29	0.93-1.77	0.12	1.43	1.12-1.81	0.004	1.46	1.10-1.93	0.008
Central obesity adj for MetS	1.69	1.21-2.34	0.002	1.19	0.94-1.50	0.15	1.38	1.04-1.83	0.03
High Triglycerides									
MetS adj. for high TG	1.44	1.01-2.05	0.05	1.46	1.13-1.90	0.004	1.56	1.15-2.11	0.004
High TG adj for MetS	1.13	0.80-1.60	0.48	1.06	0.84-1.35	0.61	1.07	0.80-1.45	0.64
Low HDL cholesterol									
MetS adj. for low HDL-chol	1.60	1.13-2.27	0.008	1.38	1.07-1.78	0.01	1.69	1.25-2.27	0.006
Low HDL chol adj for MetS	0.89	0.60-1.32	0.56	1.26	0.94-1.67	0.12	0.90	0.64-1.26	0.53
High Blood pressure									
MetS adj. for high BP	1.52	1.11-2.06	0.008	1.54	1.23-1.93	0.0002	1.56	1.20-2.03	0.001
High BP adj for MetS	1.04	0.76-1.43	0.79	0.91	0.75-1.10	0.34	1.31	1.00-1.72	0.05
Elevated Fasting blood glucose									
MetS adj. for elevated FBG	1.51	1.06-2.14	0.02	1.39	1.08-1.78	0.01	1.50	1.11-2.03	0.009
Elevated FBG adj for MetS	1.02	0.73-1.43	0.89	1.21	0.97-1.51	0.09	1.13	0.85-1.51	0.39

MetS: metabolic syndrome; TG: triglycerides; BP: blood pressure; FBG: fasting blood glucose; IADL: instrumental activities of daily living;

\* Odds ratio adjusted for center, baseline age, time, baseline interaction age x time, sex, education, income, living alone, alcohol, BMI, smoking, cognitive impairment, visual impairment, hearing impairment, depressive symptoms, respiratory disease, CVD, lipid lowering treatment and APOEε4 genotype.

**Appendix-Table B:** Contribution of the metabolic syndrome components to the association between metabolic syndrome and social restriction, mobility/activity limitations

	Social restriction N=5893			Mobility limitations N=3497			IADL limitations N=5764		
	$\beta^a$	SE	Reduction in effect (%) <sup>b</sup>	$\beta^a$	SE	Reduction in effect (%) <sup>b</sup>	$\beta^a$	SE	Reduction in effect (%) <sup>b</sup>
<b>MetS Alone</b>	1.0387	0.145		0.6439	0.1078		0.9348	0.127	
<b>MetS adjusted for one component</b>									
MetS adj. for Central obesity.	0.4406	0.1674	57.58	0.4092	0.1227	36.45	0.5082	0.1436	45.64
MetS adj. for High Triglycerides	1.0134	0.1752	2.44	0.6088	0.1261	5.45	0.9275	0.1483	0.78
MetS adj. for low HDL cholesterol				0.5523	0.1227	14.23			
MetS adj. for Hypertension							0.8927	0.1284	4.50
MetS adj. for Elevated FBG				0.5431	0.1221	15.65	0.8544	0.1499	8.60
<b>MetS adjusted for two components</b>									
MetS adj. for Central obesity + Elevated FBG				0.2886	0.137	55.18	0.3869	0.1669	58.61

MetS: metabolic syndrome; TG: triglycerides; BP: blood pressure; FBG: fasting blood glucose; IADL: instrumental activities of daily living

$\beta$  : logistic regression coefficient; SE: Standard Error

<sup>a</sup> adjusted for center, baseline age, time, baseline interaction age x time and sex

<sup>b</sup> The percent attenuation in the association was determined for component significantly associated to activity limitation incidence (see figure 1) using the formula % =  $\{(\beta_{\text{MetS}} - \beta_{\text{MetS adjusted for component}})/\beta_{\text{MetS}}\} \times 100$ , where the  $\beta$ s are the coefficients estimated from the mixed logistic model.

**Appendix-Table C:** Association between Metabolic syndrome and limitations in participants free of cardiovascular diseases (prevalent or incident)

	Social restriction N= 4442		Mobility limitation N= 2767		IADL limitation N= 4367		ADL limitation N= 4585	
	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Model 1 <sup>a</sup>	2.76 (1.89-4.03)	<0.0001	1.74 (1.37-2.23)	<0.0001	2.28 (1.70-3.05)	<0.0001	1.91 (0.91-4.03)	0.09
Model 2 <sup>b</sup>	1.47 (0.99-2.18)	0.05	1.37 (1.06-1.78)	0.02	1.54 (1.13-2.11)	0.007	1.01 (0.45-2.28)	0.98

OR: odds ratio; 95% CI: confidence interval at 95%; IADL: instrumental activities of daily living; ADL: basic activities of daily living

<sup>a</sup>Model 1: adjusted for sex, center, age, time and interaction time \* age

<sup>b</sup>Model 2: Model 1+ adjustment for incomes, education level, marital status, alcohol intake, smoking status, BMI, respiratory diseases, depression, use of lipid lowering drugs, and geriatric condition including cognitive, visual, hearing impairment and APOEε4 genotype

**Appendix-Table D:** Association between Metabolic syndrome and limitations after excluding incident cases of dementia

	Social restriction N= 5543		Mobility limitation N= 3344		IADL limitation N= 5431		ADL limitation N= 5732	
	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Model 1 <sup>a</sup>	3.01 (2.22-4.10)	<0.0001	1.82 (1.47-2.26)	<0.0001	2.39 (1.85-3.09)	<0.0001	1.92 (0.98-3.78)	0.06
Model 2 <sup>b</sup>	1.60 (1.16-2.20)	0.004	1.46 (1.16-1.83)	0.001	1.50 (1.14-1.97)	0.003	0.81 (0.40-1.65)	0.56

OR: odds ratio; 95% CI: confidence interval at 95%; IADL: instrumental activities of daily living; ADL: basic activities of daily living

<sup>a</sup> Model 1: adjusted for sex, center, age, time and interaction time \* age

<sup>b</sup> Model 2: Model 1+ adjustment for incomes, education level, marital status, alcohol intake, smoking status, BMI, cardiovascular diseases, respiratory diseases, depression, use of lipid lowering drugs, and geriatric condition including cognitive, visual, hearing impairment and APOEε4 genotype

**Appendix-Table E:** Association between metabolic syndrome and limitations after excluding participants treated with anti-diabetic drugs at baseline

	Social restriction N= 5560		Mobility limitation N= 3310		IADL limitation N= 5447		ADL limitation N= 5767	
	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value	OR (95%CI)	p-value
Model 1 <sup>a</sup>	2.38 (1.73-3.27)	<0.0001	1.71 (1.36-2.15)	<0.0001	2.25 (1.71-2.96)	<0.0001	1.62 (0.80-3.26)	0.18
Model 2 <sup>b</sup>	1.37 (0.98-1.90)	0.06	1.40 (1.10-1.79)	0.007	1.45 (1.09-1.94)	0.01	0.75 (0.37-1.51)	0.41

OR: odds ratio; 95% CI: confidence interval at 95%; IADL: instrumental activities of daily living; ADL: basic activities of daily living

<sup>a</sup> Model 1: adjusted for sex, center, age, time and interaction time \* age

<sup>b</sup> Model 2: Model 1+ adjustment for incomes, education level, marital status, alcohol intake, smoking status, BMI, cardiovascular diseases, respiratory diseases, depression, use of lipid lowering drugs, and geriatric condition including cognitive, visual, hearing impairment and APOEε4 genotype