FOOD DETERMINANTS OF BLOOD PRESSURE IN ADULT CHINESE: INDIVIDUAL FOODS

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This paper reports individual foods as determinants of blood pressure in an adult Chinese population living in Melbourne. We used the principal component analysis to obtain an orthogonal linear combination of foods for each of the 59 food groups which allows a consideration of two or more foods in a group for the prediction of blood pressure. The stepwise regression technique was then used to select food groups which best predicted blood pressure. Final models consisted of variables whose partial R^2 (the portion of variation) was significant at 5% level, adjusted for age, BMI, education level, food acculturation index, food variety score, or their interactions. The percent of portion explained (100*partial R^2) by foods which have made significant contribution to the final model is shown in the table.

	SBP (mmHg)				DBP (mmHg)			
	Men		Women		Men		Women	
	$100*pR^2$	p	$100*pR^2$	p	$100*pR^2$	p	$100*pR^2$	p
Age (yr)	27.66	****	37.15	****	2.75	**	9.46	****
BMI (Kg/M^2)	1.37	*	0.20	NS	8.05	****	2.78	**
Age*BMI			2.07	*				
ED	2.25	**	0.54	NS	2.62	**	1.19	NS
CHAU			2.70	***			1.03	NS
ED*CHAU			0.98	*			1.16	NS
FVS	2.57	**	1.64	**				
Age*FVS	1.14	*	2.05	**				
Biscuit	2.37	**			2.67	**		
Fish	1.94	**			2.45	**		
Age*fish	3.86	****						
Rice	1.95	**						
B cereals	1.17	*			1.44	*		
Tea	1.27	*			1.26	*		
Fish*tea					1.67	*		
Berry/Grape	0.71	**						
Melon	1.16	*						
Tropic fruits					3.54	**		
Sea plant					1.94	*		
Wine			1.44	*				
Offal			1.08	*				
Liqueur							1.80	*
Confection							1.60	*
Crustacean							1.36	*
Total % explained	49.43	****	48.85	****	28.39	****	20.37	****

Age*BMI, interaction between age and BMI; ED, education level (2='0-6 yrs', 3='7-9 yrs', 4='10-12 yrs', 5='13 + yrs'); CHAU, food acculturation (0 mean & unit variance); ED*CHAU, interaction between education level and food acculturation index; FVS, food variety score (0 mean & unit variance); age*FVS, interaction between age and food variety score; age*fish, interaction between age and fish intake; fish*tea, interaction between fish and tea intake. NS, P >= 0.05; *, P < 0.05; **, P < 0.01; ***, P < 0.001; ****, P < 0.0001.

Fish and age were the most important predictors for systolic blood pressure in men. They together accounted for 33.5% (27.7% for age, 1.9% for fish, and 3.9% for fish*age) of the variation for systolic blood pressure in Chinese men (the model explained 49.4% of the variation). Because fish intake was positively associated with age, the effect of fish intake on systolic blood pressure for men was probably confounded with age. On the other hand, fish and Chinese tea together explained 5.4% (of which 2.45% was explained by fish alone) of the variation for diastolic blood pressure (28.4% for the model) in men. Chinese tea was also negatively associated with both systolic and diastolic blood pressure. The positive relationship between diastolic blood pressure and the interaction of fish and Chinese tea implies that a higher fish intake supersedes the protective effect of Chinese tea as a predictor of diastolic blood pressure in men. We conclude that a high fish intake, though confounded with age, is an important predictor of blood pressure in Chinese men. For women, positive relationships were found between wine and systolic blood pressure and between liqueur and diastolic blood pressure. Although generally Chinese women do not drink regularly (mean intake 0.42 glass/mth for wine, 0.10 glass/mth for sherry, 0.21 glass/mth for port, and 0.42 nip/mth for spirits), the alcohol and blood pressure relationship was consistent with the findings of other studies.

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