

S6 Table. The association between metabolically healthy phenotypes (defined by BMI and WC categories) and GI cancer type among age \leq 60 years

	Esophageal cancer		Gastric cancer		Colorectal cancer		Biliary tract cancer		Liver cancer		Pancreatic cancer	
	Case	Multiple-adjusted	Case	Multiple-adjusted	Case	Multiple-adjusted	Case	Multiple-adjusted	Case	Multiple-adjusted	Case	Multiple-adjusted
BMI category												
MHNW	16	Ref	43	Ref	83	Ref	5	Ref	83	Ref	12	Ref
MUNW	135	3.69 (2.19-6.24)	192	2.02 (1.44-2.82)	350	1.75 (1.38-2.24)	28	2.24 (0.85-5.87)	219	1.22 (0.95-1.57)	60	2.21 (1.17-4.14)
MHO	2	1.52 (0.35-6.64)	9	2.54 (1.24-5.22)	9	1.28 (0.65-2.55)	0	-	7	1.02 (0.47-2.21)	2	2.05 (0.46-9.20)
MUO	16	1.63 (0.81-3.28)	58	2.19 (1.47-3.28)	106	1.85 (1.39-2.48)	6	1.75 (0.53-5.83)	61	1.19 (0.85-1.66)	19	2.40 (1.15-5.01)
WC category												
MHNW	11	Ref	37	Ref	64	Ref	5	Ref	58	Ref	12	Ref
MUNW	91	4.12 (2.19-7.74)	133	1.85 (1.28-2.67)	228	1.71 (1.29-2.26)	16	1.45 (0.53-3.99)	153	1.38 (1.02-1.88)	43	1.78 (0.93-3.41)
MHO	7	2.29 (0.89-5.91)	15	1.39 (0.76-2.54)	28	1.41 (0.90-2.20)	0	-	32	1.81 (1.18-2.77)	2	0.56 (0.13-2.51)
MUO	60	3.89 (2.02-7.48)	117	2.25 (1.53-3.29)	228	2.20 (1.66-2.93)	18	2.04 (0.74-5.64)	127	1.55 (1.13-2.13)	36	2.00 (1.01-3.93)

Multivariable model adjusted for age, sex, educational level, drinking, smoking, physical exercise, family history of cancer, salt intake, high-sensitive C-reactive protein, and alanine transaminase. Model for colorectal cancer was additionally adjusted for high fat diet. Model for biliary tract cancer was additionally adjusted for gallstone. Model for liver cancer was additionally adjusted for HBsAg. Model for pancreatic cancer was additionally adjusted for history of chronic pancreatitis. BMI, body mass index; GI, gastrointestinal; MHNW, metabolic healthy normal-weight; MHO, metabolic healthy obesity; MUNW, metabolic unhealthy normal-weight; MUO, metabolic unhealthy obesity; WC, waist circumference.