

Metagenomics reveals an increased proportion of an *Escherichia coli*-dominated enterotype in elderly Chinese people

Jinyou LI^{1*}, Yue WU^{1*}, Yichen YANG¹, Lufang CHEN¹, Caihong HE¹, Shixian ZHOU¹, Shunmei HUANG¹, Xia ZHANG¹, Yuming WANG¹, Qifeng GUI¹, Haifeng LU², Qin ZHANG^{1✉}, Yunmei YANG^{1✉}

¹Zhejiang Key Laboratory for Diagnosis and Treatment of Physic-chemical and Aging-related Injuries, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou 310003, China

²State Key Laboratory for Diagnosis and Treatment of Infectious Disease, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou 310003, China

Table S1 Clinical characteristics of participants

	ET- <i>Bacteroides</i> (n=157)	ET- <i>Prevotella</i> (n=130)	ET- <i>Escherichia</i> (n=80)
Age ^{###}	73.24±8.70	70.72±5.59	78.24±8.39
Female (n=213)	41.78% (89)	34.74% (74)	23.47% (50)
Male (n=154)	44.16% (68)	36.36% (56)	19.48% (30)
Gastrointestinal disturbances	14.01% (22)	13.08% (17)	11.25% (9)
T2DM ^{**}	8.28% (13)	7.69% (10)	22.5% (18)
Stroke	5.10% (8)	4.62% (6)	6.25% (5)
Constipation	5.73% (9)	5.38% (7)	2.5% (2)
Sarcopenia	4.46% (7)	3.84% (5)	2.5% (2)
Bone loss	7.01% (11)	6.92% (9)	6.25% (5)
Heart disease	8.92% (14)	6.92% (9)	10% (8)
Sleep time (h) ^{###}	7.63±1.13	7.9±1.29	7.37±0.99
Frailty ^{***}	20.38% (32)	11.54% (15)	37.5% (30)
Dysmetabolic syndrome ^{**}	14.01% (22)	12.31% (16)	27.5% (22)
Arthritis ^{**}	6.37% (10)	8.46% (11)	3.75% (3)

Continuous variables are presented as mean±SD. Chi-square test: ^{**}*P*<0.01, and ^{***}*P*<0.001. Wilcoxon rank-sum test: ^{###}*P*<0.001.

Table S2 Results of the Kolmogorov-Smirnov test comparing bootstrapped node attributes of co-occurrence networks of the three enterotypes

Comparison	Degree	Betweenness	Closeness	Transitivity
ET- <i>Prevotella</i> vs. ET- <i>Bacteroides</i>	0.1171 ^{***}	0.1183 ^{***}	0.1018 ^{***}	0.3746 ^{***}
ET- <i>Escherichia</i> vs. ET- <i>Bacteroides</i>	0.0721 ^{***}	0.1015 ^{***}	0.0994 ^{***}	0.0823 ^{***}
ET- <i>Prevotella</i> vs. ET- <i>Escherichia</i>	0.1177 ^{***}	0.1404 ^{***}	0.1606 ^{***}	0.3786 ^{***}

For each network, node attributes were computed by a bootstrapping approach with 10000 iterations. The Kolmogorov-Smirnov test compares the overall shape of the cumulative distribution of two variables, where the null hypothesis is that the variables have the same distribution patterns. The values in each box represent D , which is the maximum difference in the absolute cumulative distribution function. ^{***} $P < 0.001$.