Supplementary Table 1 Baseline characteristics of participants according to quartiles of total folate and dietary folate intake.

Characteristics	Quartiles of food natural folate (DFE, mcg/d)				Quartiles of food synthetic acid (DFE, mcg/d)			
	Q1 (<135.00) N=4727	Q2 (135.01 - <188.00) N=4743	Q3 (188.01- <258.50) N=4707	Q4 (≥258.51) N=4712	Q1 (<81.00) N=4744	Q2 (81.01- <137.50) N=4703	Q3 (137.51 - <224.50) N=4738	Q4 (≥224.51) N=4704
Age (years)	53.22 (17.96)	54.28 (17.72)	53.67 (16.65)	51.84 (16.00)	54.98 (16.57)	53.68 (16.97)	52.34 (17.11)	52.01 (17.68)
Men [N, (%)]	1713 (36.2)	2159 (45.5)	2498 (53.1)	3035 (64.4)	1853 (39.1)	2140 (45.5)	2494 (52.6)	2918 (62.0)
Non-Hispanic white [N, (%)]	2064 (43.7)	2393 (50.5)	2405 (51.1)	2295 (48.7)	2148 (45.3)	2196 (46.7)	2206 (46.6)	2607 (55.4)
Family income-poverty ratio	2.25 (1.49)	2.60 (1.55)	2.84 (1.60)	3.02 (1.65)	2.56 (1.60)	2.66 (1.60)	2.65 (1.59)	2.84 (1.60)
College graduate or above (%)	3304 (69.9)	3620 (76.3)	3691 (78.4)	3794 (80.5)	3501 (73.8)	3530 (75.1)	3630 (76.6)	3748 (79.7)
Mild work activity [N, (%)]	3441 (72.8)	3250 (68.5)	2903 (61.7)	2585 (54.9)	3154 (66.5)	3143 (66.8)	3055 (64.5)	2827 (60.1)
Smoking [N, (%)]	2308 (48.8)	2210 (46.6)	2150 (45.7)	2213 (47.0)	2284 (48.1)	2249 (47.8)	2241 (47.3)	2107 (44.8)
None alcohol consumption [N, (%)]	3865 (81.8)	3531 (74.4)	3139 (66.7)	2844 (60.4)	3332 (70.2)	3347 (71.2)	3366 (71.0)	3334 (70.9)
BMI (kg/m2)	30.17 (7.16)	29.76 (6.58)	29.70 (6.88)	29.02 (6.39)	29.93 (7.06)	29.77 (6.65)	29.77 (6.64)	29.18 (6.72)
AHEI	45.23 (10.14)	43.31 (9.76)	42.45 (9.64)	42.90 (9.94)	39.24 (8.36)	42.12 (9.07)	44.53 (9.70)	48.03 (10.32)
Total energy intake (kcal/d)	1465.40 (503.20)	1848.08 (562.98)	2122.37 (614.55)	2491.93 (718.22)	1590.75 (589.88)	1872.01 (611.21)	2112.50 (668.25)	2352.21 (735.03)
Vitamin B12 (mcg/d)	3.58 (3.25)	4.65 (3.84)	5.30 (4.12)	6.63 (9.23)	3.77 (5.78)	4.21 (4.62)	5.00 (5.93)	7.19 (5.95)
Total folate (DFE, mcg/d)	457.90 (392.58)	592.96 (411.41)	720.64 (610.37)	874.77 (532.92)	439.27 (575.00)	527.98 (391.44)	653.91 (353.44)	1025.86 (515.12)
Food natural folate (DFE, mcg/d)	100.53 (24.97)	161.30 (15.21)	220.66 (20.05)	354.48 (98.55)	189.90 (109.35)	197.41 (100.17)	213.03 (102.63)	236.08 (111.80)
Food synthetic acid (DFE, mcg/d)	137.55 (117.74)	169.52 (137.73)	191.47 (159.48)	202.37 (162.86)	49.67 (20.57)	108.68 (16.13)	175.90 (24.72)	367.54 (170.02)
Dietary folate (DFE, mcg/d)	334.29 (205.28)	449.38 (235.45)	546.05 (272.57)	698.51 (295.10)	274.25 (113.01)	382.02 (105.23)	512.04 (112.64)	860.88 (314.86)
Folic acid supplement taken [N, (%)]	870 (18.4)	1038 (21.9)	1179 (25.0)	1241 (26.3)	1115 (23.5)	1002 (21.3)	1062 (22.4)	1149 (24.4)
[c]Diabetes [N, (%)]	1049 (22.2)	1002 (21.1)	928 (19.7)	829 (17.6)	1067 (22.5)	982 (20.9)	938 (19.8)	821 (17.5)
[d]Dyslipidmia [N, (%)]	2457 (52.0)	2443 (51.5)	2212 (47.0)	2113 (44.8)	2457 (51.8)	2354 (50.1)	2279 (48.1)	2135 (45.4)

[e]Hypertension [N, (%)]	710 (15.0)	657 (13.9)	544 (11.6)	434 (9.2)	644 (13.6)	636 (13.5)	536 (11.3)	529 (11.2)
[f]Cardiovascular disease [N, (%)]	2662 (56.3)	2805 (59.1)	2785 (59.2)	2767 (58.7)	2725 (57.4)	2721 (57.9)	2816 (59.4)	2757 (58.6)

Abbreviations: AHEI, Alternative Healthy Eating Index; BMI, body mass index; TFE, total folate equivalent; DFE, dietary folate equivalent; Q, quartile; N, number.

a Continuous variables are presented as mean and standard deviation. Categorical variables are presented as percentages.

b P value for difference after the Bonferroni correction for each variable among four groups according to quartiles of TFE or DFE.

c Diabetes was defined by a self-reported diagnosis, serum triglyceride≥2.26mmol/L, or serum cholesterol≥6.22mmol/L, or low-density lipoprotein≥4.14mmol/L, or related drugs used.

d Dyslipidemia was defined as serum triglyceride≥2.26mmol/L, or serum glycohemoglobin≥6.5%, or a serum fasting plasma glucose level≥7.0mmol/L, or related drugs used.

e Participants who met one or more of the following criteria were considered as people with hypertension 1) a self-reported diagnosis, 2) mean systolic blood pressure≥140 mmHg and/or diastolic blood pressure≥90 mmHg, 3) taking the prescription for hypertension

f Cardiovascular disease was defined by a self-reported congestive heart failure, coronary heart disease, or heart attack.

Supplementary Table 2 Baseline characteristics of participants according to quartiles of serum total folate.

Characteristics	Serum total folate (mmol/l)			
	Q1 (≤11.70) N=4388	Q2 (11.71-19.00) N=4313	Q3 (19.01-32.00) N=4354	Q4 (>32.01) N=4343
Age (years)	49.54 (16.23)	52.30 (16.81)	53.81 (17.27)	56.32 (17.65)
Men [N, (%)]	2373 (55.2)	2202 (50.0)	2073 (47.6)	1835 (42.3)
Non-Hispanic white [N, (%)]	1989 (46.3)	2210 (50.2)	2222 (51.0)	2116 (48.7)
Family income-poverty ratio	2.56 (1.60)	2.72 (1.61)	2.71 (1.60)	2.73 (1.59)
College graduate or above (%)	3048 (70.9)	3298 (74.9)	3392 (77.9)	3467 (79.8)
Mild work activity [N, (%)]	2845 (66.2)	2729 (62.0)	2764 (63.5)	2835 (65.3)
Smoking [N, (%)]	2328 (54.2)	2094 (47.5)	1951 (44.8)	1822 (42.0)
None alcohol consumption [N, (%)]	2931 (68.2)	2994 (68.0)	3081 (70.8)	3282 (75.6)
BMI (kg/m2)	30.32 (7.05)	29.69 (6.65)	29.56 (6.79)	28.98 (6.39)
AHEI	39.41 (8.58)	41.88 (9.08)	44.29 (9.71)	47.12 (10.08)
Total energy intake (kcal/d)	2039.69 (746.16)	1989.47 (715.08)	1966.19 (691.17)	1909.78 (677.49)
Vitamin B12 (mcg/d)	14.20 (93.09)	24.47 (156.95)	52.88 (326.67)	105.75 (454.57)
Total folate (DFE, mcg/d)	474.59 (286.60)	576.77 (381.08)	697.34 (499.66)	879.71 (706.43)
Food natural folate (DFE, mcg/d)	193.85 (97.88)	209.09 (104.03)	214.40 (107.98)	216.41 (114.33)
Food synthetic folic acid (DFE, mcg/d)	152.03 (114.45)	178.09 (143.66)	186.20 (150.04)	186.23 (167.97)
Dietary folate (DFE, mcg/d)	452.40 (235.98)	511.90 (279.46)	530.92 (291.83)	532.79 (316.79)
Folic acid supplement taken [N, (%)]	187 (4.4)	506 (11.5)	1132 (26.0)	2065 (47.5)
[c]Diabetes [N, (%)]	741 (17.2)	822 (18.7)	850 (19.5)	1005 (23.1)
[d]Dyslipidmia [N, (%)]	2640 (61.5)	2620 (59.5)	2441 (56.1)	2473 (56.9)
[e]Hypertension [N, (%)]	1964 (45.7)	2093 (47.5)	2144 (49.2)	2227 (51.3)
fCardiovascular disease [N, (%)]	505 (11.8)	502 (11.4)	514 (11.8)	609 (14.0)

Abbreviations: AHEI, Alternative Healthy Eating Index; BMI, body mass index; Total folate, Total folate equivalent; Dietary folate, dietary folate equivalent; Q, quartile; N, number.

a Continuous variables are presented as mean and standard deviation. Categorical variables are presented as percentages.

b P value for difference after the Bonferroni correction for each variable among four groups according to quartiles of serum folate.

c Diabetes was defined by a self-reported diagnosis, serum triglyceride≥2.26mmol/L, or serum cholesterol≥6.22mmol/L, or low-density lipoprotein≥4.14mmol/L, or related drugs used.

d Dyslipidemia was defined as serum triglyceride≥2.26mmol/L, or serum glycohemoglobin≥6.5%, or a serum fasting plasma glucose level≥7.0mmol/L, or related drugs used.

e Participants who met one or more of the following criteria were considered as people with hypertension 1) a self-reported diagnosis, 2) mean systolic blood pressure≥140 mmHg and/or diastolic blood pressure≥90 mmHg, 3) taking the prescription for hypertension

f Cardiovascular disease was defined by a self-reported congestive heart failure, coronary heart disease, or heart attack.

Supplementary Table 3 Components of biological ages.

	Albumin, g/L	Alkaline phosphatase, U/L	C-reactive protein, mg/dL	Total cholesterol, mmol/L	Creatinine, umol/L	Glycated hemoglobin, %	Systolic blood pressure, mmHg	Blood urea nitrogen, mmol/L	Uric acid, umol/L	Lymphocyte percent, %	Mean cell volume, fL	White blood cell count, %
Total folate (DFE, mcg/d)												
[b]Q1 (≤347.00)	[a]41.90(0.10)	72.23(0.49)	0.50(0.02)	5.23(0.03)	0.89(0.01)	5.71(0.02)	124.80(0.34)	4.85(0.04)	5.39(0.03)	30.15(0.17)	89.67(0.13)	7.49(0.05)
Q2 (347.01 - <521.01)	42.26(0.09)	70.67(0.56)	0.44(0.02)	5.18(0.02)	0.90(0.01)	5.63(0.02)	124.34(0.32)	4.97(0.04)	5.56(0.03)	30.15(0.17)	89.69(0.13)	7.39(0.04)
Q3 (521.01 - <853.00)	42.58(0.07)	70.08(0.56)	0.38(0.01)	5.17(0.02)	0.91(0.01)	5.64(0.02)	123.59(0.34)	4.97(0.04)	5.58(0.03)	30.25(0.15)	89.56(0.12)	7.33(0.05)
Q4 (≥853.01)	42.73(0.08)	67.90(0.36)	0.35(0.01)	5.07(0.02)	0.90(0.00)	5.64(0.02)	123.80(0.38)	5.31(0.05)	5.47(0.03)	30.18(0.17)	90.08(0.15)	7.09(0.06)
[c]P value	0.001	<0.001	<0.001	<0.001	<0.001	0.254	0.001	<0.001	<0.001	<0.001	0.154	<0.001
Dietary folate (DFE, mcg/d)												
Q1 (<316.00)	41.87(0.10)	72.23(0.53)	0.50(0.02)	5.22(0.03)	0.89(0.01)	5.72(0.02)	124.76(0.37)	4.96(0.05)	5.39(0.03)	30.24(0.16)	89.71(0.14)	7.45(0.06)
Q2 (316.51 - <444.00)	42.20(0.09)	70.30(0.48)	0.43(0.01)	5.17(0.03)	0.89(0.01)	5.64(0.01)	124.56(0.34)	5.01(0.04)	5.47(0.03)	30.00(0.16)	89.77(0.12)	7.31(0.05)
Q3 (444.01 - <624.50)	42.56(0.07)	69.55(0.46)	0.40(0.01)	5.16(0.03)	0.91(0.01)	5.66(0.02)	124.28(0.33)	5.10(0.04)	5.54(0.02)	30.20(0.18)	89.73(0.12)	7.39(0.06)
Q4 (≥624.51)	42.84(0.08)	68.72(0.47)	0.34(0.01)	5.09(0.02)	0.92(0.00)	5.60(0.02)	122.99(0.34)	5.06(0.04)	5.60(0.03)	30.29(0.16)	89.81(0.13)	7.15(0.04)
P value	0.163	<0.001	<0.001	0.002	<0.001	0.003	0.008	0.064	<0.001	<0.001	0.088	<0.001
Food natural folate (DFE, mcg/d)												
Q1 (<135.00)	41.60(0.10)	73.59(0.58)	0.51(0.02)	5.13(0.03)	0.90(0.01)	5.68(0.02)	125.14(0.40)	4.82(0.04)	5.37(0.03)	30.35(0.20)	89.26(0.14)	7.53(0.05)
Q2 (135.01 - <188.00)	42.14(0.07)	70.66(0.40)	0.46(0.01)	5.15(0.02)	0.91(0.01)	5.70(0.02)	124.31(0.31)	5.14(0.04)	5.48(0.02)	29.74(0.16)	89.72(0.13)	7.46(0.05)
Q3 (188.01- <258.50)	42.67(0.08)	69.26(0.43)	0.39(0.01)	5.20(0.02)	0.90(0.00)	5.63(0.01)	123.73(0.32)	5.03(0.04)	5.53(0.03)	30.22(0.18)	89.86(1.28)	7.29(0.06)
Q4 (≥258.51)	43.00(0.08)	67.61(0.56)	0.32(0.01)	5.14(0.03)	0.90(0.00)	5.61(0.02)	123.44(0.32)	5.12(0.04)	5.61(0.03)	30.42(0.17)	90.09(0.13)	7.04(0.05)
P value	<0.001	<0.001	<0.001	0.298	<0.001	0.011	0.016	<0.001	0.002	<0.001	0.004	<0.001
Food synthetic folic acid (DFE, mcg/d)												

Q1 (<81.00)	42.27(0.10)	70.45(0.46)	0.45(0.02)	5.23(0.02)	0.88(0.01)	5.67(0.02)	124.40(0.33)	5.06(0.05)	5.42(0.03)	30.13(0.17)	90.01(0.14)	7.31(0.05)
Q2 (81.01- <137.50)	42.18(0.08)	70.47(0.52)	0.43(0.01)	5.19(0.03)	0.89(0.01)	5.67(0.02)	124.25(0.28)	5.01(0.04)	5.48(0.03)	30.22(0.17)	89.75(0.14)	7.33(0.05)
Q3 (137.51 - <224.50)	42.36(0.07)	70.37(0.44)	0.43(0.02)	5.11(0.02)	0.91(0.01)	5.67(0.02)	124.70(0.35)	5.02(0.04)	5.55(0.03)	30.20(0.15)	89.57(0.12)	7.40(0.06)
Q4 (≥224.51)	42.72(0.08)	69.25(0.46)	0.35(0.01)	5.11(0.02)	0.92(0.00)	5.61(0.02)	123.17(0.35)	5.06(0.04)	5.56(0.03)	30.19(0.16)	89.71(0.13)	7.23(0.05)
P value	0.136	0.52	0.001	<0.001	0.785	0.054	0.001	0.068	<0.001	0.018	<0.001	0.015
Serum total folate (mmol/l)												
Q1 (≤11.07)	42.09(0.08)	70.68(0.54)	0.47(0.02)	5.31(0.02)	0.93(0.01)	5.58(0.02)	123.52(0.32)	4.55(0.04)	5.67(0.03)	30.05(0.18)	89.86(0.14)	7.55(0.04)
Q2 (11.07-19.0))	42.47(0.08)	68.59(0.44)	0.43(0.02)	5.23(0.03)	0.90(0.01)	5.61(0.02)	123.60(0.35)	4.78(0.04)	5.49(0.02)	30.23(0.16)	89,82(0.16)	7.27(0.05)
Q3 (19.01-32.00)	42.53(0.10)	69.13(0.52)	0.40(0.02)	5.13(0.02)	0.89(0.01)	5.66(0.02)	124.48(0.41)	5.10(0.04)	5.45(0.03)	30.14(0.20)	89.54(0.13)	7.22(0.05)
Q4 (≥32.01)	42.84(0.10)	68.67(0.55)	0.36(0.01)	5.03(0.03)	0.88(0.01)	5.71(0.03)	124.06(0.36)	5.44(0.06	5.35(0.04)	30.12(0.20)	89.86(0.15)	7.28(0.07)
P value	<0.001	0.001	<0.001	<0.001	<0.001	0.001	0.049	<0.001	<0.001	0.021	0.005	0.001
Dietary folate co-exposure patterns												
Cluster 1	42.21(0.07)	70.92(0.37)	0.45(0.01)	5.20(0.02)	0.90(0.00)	5.66(0.01)	124.29(0.23)	4.93(0.03)	5.49(0.02)	30.20(0.12)	89.68(0.10)	7.40(0.03)
Cluster 2	42.91(0.08)	68.98(0.61)	0.34(0.01)	5.13(0.02)	0.93(0.01)	5.58(0.02)	123.04(0.36)	4.99(0.04)	5.63(0.03)	30.36(0.19)	89.65(0.14)	7.22(0.07)
Cluster 3	42.47(0.10)	68.71(0.56)	0.37(0.02)	5.05(0.03)	0.89(0.01)	5.70(0.02)	124.95(0.54)	5.44(0.06)	5.43(0.04)	29.87(0.20)	90.09(0.17)	7.12(0.07)
Cluster 4	42.50(0.22)	67.90(1.18)	0.37(0.03)	5.09(0.06)	0.90(0.02)	5.64(0.04)	122.75(1.07)	5.45(0.11)	5.31(0.07)	30.34(0.43)	90.19(0.30)	7.18(0.09)
P value	0.023	0.001	<0.001	<0.001	<0.001	0.001	0.014	<0.001	<0.001	0.016	0.131	<0.001

a Continuous variables are presented as mean and standard deviation. Categorical variables are presented as percentages.
b Q, quartile; N, number.
c P value for difference after the Bonferroni correction for each variable among four groups according to quartiles of folate intake.

Supplementary Table 4 The association of the intake of folate from diverse sources and the level of several serum folate forms with PA.

		PA			
	[b]Case/N	Model 1 [d]OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)
Total folate (DFE, mcg/d)					
[b]Q1(≤347.00)	2172/4728	[a]Ref	Ref	Ref	Ref
Q2(347.01 - <521.01)	2071/4720	0.87(0.78,0.96)	0.92(0.83,1.02)	0.94(0.83,1.06)	0.99(0.87,1.12)
Q3(521.01 - <853.00)	1994/4727	0.73(0.67,0.80)	0.81(0.74,0.88)	0.83(0.74,0.93)	0.88(0.78,1.00)
Q4(≥853.01)	1784/4714	0.57(0.51,0.63)	0.68(0.61,0.75)	0.70(0.61,0.81)	0.75(0.64,0.88)
P trend		<0.001	<0.001	<0.001	<0.001
Dietary folate (DFE, mcg/d)					
Q1(<316.00)	1977/4744	Ref	Ref	Ref	Ref
Q2(316.51 - <444.00)	1998/4703	0.84(0.75,0.95)	0.89(0.79,1.00)	0.90(0.79,1.01)	0.92(0.81,1.05)
Q3(444.01 - <624.50)	2104/4738	0.78(0.71,0.86)	0.85(0.77,0.94)	0.86(0.77,0.97)	0.89(0.79,1.00)
Q4(≥624.51)	1942/4704	0.63(0.57,0.70)	0.71(0.64,0.78)	0.73(0.65,0.82)	0.79(0.70,0.90)
P trend		<0.001	<0.001	<0.001	<0.001
Natural food folate (DFE, mcg/d)					
Q1(<135.00)	2084/4732	Ref	Ref	Ref	Ref
Q2(135.01 - <188.00)	2108/4727	0.81(0.72,0.90)	0.87(0.78,0.98)	0.89(0.80,1.00)	0.87(0.77,0.99)
Q3(188.01- <258.50)	2018/4708	0.61(0.54,0.69)	0.69(0.61,0.79)	0.72(0.63,0.83)	0.72(0.63,0.84)
Q4(≥258.51)	1811/4722	0.53(0.47,0.59)	0.63(0.56,0.70)	0.67(0.59,0.76)	0.65(0.57,0.75)
P trend		<0.001	<0.001	<0.001	<0.001

Synthetic folic acid (DFE, mcg/d)					
Q1(<81.00)	2097/4730	Ref	Ref	Ref	Ref
Q2(81.01- <137.50)	2029/4722	1.00(0.90,1.10)	1.00(0.90,1.10)	0.97(0.87,1.07)	0.98(0.87,1.10)
Q3(137.51 - <224.50)	1974/4719	1.09(0.97,1.23)	1.10(0.97,1.25)	1.08(0.94,1.24)	1.12(0.97,1.31)
Q4(≥224.51)	1921/4718	0.83(0.75,0.92)	0.86(0.78,0.95)	0.86(0.77,0.96)	0.94(0.82,1.07)
P trend		0.002	0.021	0.046	0.669
Folic acid supplement taken					
No	6453/14561	Ref	Ref	Ref	Ref
Yes	1568/4328	0.62(0.53,0.71)	0.68(0.58,0.80)	0.70(0.60,0.83)	0.67(0.56,0.80)
P value		<0.001	<0.001	<0.001	<0.001
Serum total folate (mmol/l)					
Q1(≤11.07)	2191/4296	Ref	Ref	Ref	Ref
Q2(11.07-19.0))	1777/4405	0.65(0.58,0.72)	0.67(0.60,0.76)	0.78(0.67,0.90)	0.67(0.60,0.76)
Q3(19.01-32.00)	1700/4354	0.59(0.52,0.66)	0.58(0.51,0.66)	0.81(0.67,0.96)	0.58(0.51,0.67)
Q4(≥32.01)	1578/4343	0.51(0.45,0.59)	0.46(0.40,0.54)	0.63(0.51,0.78)	0.49(0.41,0.58)
P trend		<0.001	<0.001	<0.001	<0.001
Serum 5-mTHF (nmol/L)					
Q1(≤22,70)	708/1446	Ref	Ref	Ref	Ref
Q2(22.71-33.10)	577/1439	0.70(0.56,0.87)	0.74(0.59,0.93)	0.74(0.59,0.94)	0.70(0.56,0.87)
Q3(33.11-48.85)	522/1426	0.56(0.44,0.72)	0.62(0.48,0.80)	0.64(0.49,0.84)	0.67(0.49,0.92)
Q4(≥48.86)	474/1437	0.44(0.33,0.59)	0.49(0.38,0.65)	0.52(0.39,0.69)	0.51(0.38,0.70)
P trend		<0.001	<0.001	<0.001	<0.001
Serum UMFA (nmol/L)					

Q1(≤0.46)	544/1472	Ref	Ref	Ref	Ref
Q2(0.46-0.62)	533/1409	1.08(0.85,1.35)	1.05(0.84,1.32)	1.05(0.84,1.30)	1.13(0.89,1.44)
Q3(0.63-0.94)	592/1431	1.17(0.98,1.39)	1.13(0.95,1.35)	1.14(0.95,1.37)	1.32(1.06,1.64)
Q4(≥0.94)	612/1436	1.05(0.83,1.33)	1.03(0.82,1.29)	1.12(0.88,1.42)	1.29(0.93,1.78)
P trend		0.502	0.655	0.272	0.064
Serum non-methylated folate (nmol/L)					
Q1(≤0.83)	516/1416	Ref	Ref	Ref	Ref
Q2(0.84-1.05)	538/1458	1.10(0.90,1.33)	1.16(0.93,1.43)	1.17(0.94,1.47)	1.17(0.92,1.49)
Q3(1.06-1.35)	590/1437	1.16(0.93,1.44)	1.27(1.05,1.55)	1.34(1.11,1.62)	1.45(1.18,1.77)
Q4(≥1.36)	637/1437	1.16(0.92,1.47)	1.31(1.05,1.63)	1.48(1.16,1.88)	1.76(1.31,2.38)
P trend		0.168	0.008	<0.001	<0.001
Serum Mefox oxidation product (nmol/L)					
Q1(≤0.83)	407/1453	Ref	Ref	Ref	Ref
Q2(0.84-1.35)	493/1422	1.34(0.99,1.80)	1.40(1.06,1.86)	1.39(1.06,1.84)	1.37(1.06,1.77)
Q3(1.36-2.33)	618/1441	1.87(1.47,2.39)	2.01(1.57,2.59)	2.09(1.64,2.66)	2.03(1.55,2.67)
Q4(≥2.34)	763/1432	2.79(2.09,3.74)	2.93(2.18,3.93)	3.07(2.31,4.07)	3.10(2.28,4.22)
P trend		<0.001	<0.001	<0.001	<0.001

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as odds risk and 95% confidence intervals.

e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 5 The association of the intake of folate from diverse sources and the level of several serum folate forms with KDM.

		KDM			
	[b]Case/N	Model 1 [d]OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)
Total folate (DFE, mcg/d)					
[b]Q1(≤347.00)	930/4728	[a]Ref	Ref	Ref	Ref
Q2(347.01 - <521.01)	789/4720	0.80(0.69,0.93)	0.87(0.75,1.01)	0.88(0.76,1.02)	0.93(0.80,1.07)
Q3(521.01 - <853.00)	715/4727	0.75(0.65,0.88)	0.84(0.72,0.98)	0.85(0.72,1.01)	0.90(0.76,1.07)
Q4(≥853.01)	538/4714	0.52(0.45,0.60)	0.60(0.52,0.69)	0.62(0.53,0.73)	0.63(0.53,0.75)
P trend		<0.001	<0.001	<0.001	<0.001
Dietary folate (DFE, mcg/d)					
Q1(<316.00)	777/4744	Ref	Ref	Ref	Ref
Q2(316.51 - <444.00)	734/4703	0.78(0.67,0.92)	0.85(0.73,1.00)	0.85(0.72,1.01)	0.90(0.75,1.07)
Q3(444.01 - <624.50)	795/4738	0.75(0.64,0.88)	0.84(0.71,0.98)	0.84(0.70,1.02)	0.88(0.73,1.06)
Q4(≥624.51)	666/4704	0.62(0.53,0.73)	0.71(0.60,0.84)	0.72(0.60,0.88)	0.80(0.65,0.98)
P trend		<0.001	<0.001	0.002	0.035
Natural food folate (DFE, mcg/d)					
Q1(<135.00)	845/4732	Ref	Ref	Ref	Ref
Q2(135.01 - <188.00)	833/4727	0.84(0.73,0.96)	0.92(0.80,1.06)	0.93(0.80,1.08)	0.91(0.78,1.06)
Q3(188.01- <258.50)	738/4708	0.63(0.54,0.73)	0.73(0.63,0.84)	0.75(0.63,0.89)	0.74(0.62,0.89)
Q4(≥258.51)	556/4722	0.51(0.43,0.61)	0.61(0.51,0.73)	0.64(0.53,0.79)	0.62(0.49,0.77)
P trend		<0.001	<0.001	<0.001	<0.001

Synthetic folic acid (DFE, mcg/d)					
Q1(<81.00)	881/4730	Ref	Ref	Ref	Ref
Q2(81.01- <137.50)	766/4722	0.99(0.83,1.18)	1.01(0.85,1.21)	0.93(0.83,1.19)	1.02(0.83,1.25)
Q3(137.51 - <224.50)	685/4719	1.07(0.90,1.28)	1.10(0.92,1.31)	1.08(0.90,1.31)	1.13(0.92,1.38)
Q4(≥224.51)	640/4718	0.87(0.75,1.02)	0.92(0.79,1.08)	0.93(0.78,1.10)	1.03(0.85,1.25)
P trend		0.174	0.512	0.606	0.556
Folic acid supplement taken					
No	2495/14561	Ref	Ref	Ref	Ref
Yes	477/4328	0.81(0.72,0.90)	0.91(0.82,1.02)	0.94(0.84,1.05)	0.86(0.77,0.96)
P value		<0.001	0.115	0.278	0.009
Serum total folate (mmol/l)					
Q1(≤11.07)	889/4296	Ref	Ref	Ref	Ref
Q2(11.07-19.0))	658/4405	0.73(0.64,0.84)	0.75(0.65,0.86)	0.70(0.62,0.79)	0.76(0.65,0.89)
Q3(19.01-32.00)	633/4354	0.79(0.67,0.92)	0.73(0.61,0.87)	0.62(0.54,0.70)	0.77(0.64,0.93)
Q4(≥32.01)	513/4343	0.62(0.52,0.73)	0.52(0.42,0.63)	0.52(0.45,0.60)	0.60(0.48,0.74)
P trend		<0.001	<0.001	0.030	<0.001
Serum 5-mTHF (nmol/L)					
Q1(≤22,70)		Ref	Ref	Ref	Ref
Q2(22.71-33.10)	316/1446	0.70(0.56,0.87)	0.98(0.73,1.31)	1.00(0.74,1.34)	0.98(0.74,1.30)
Q3(33.11-48.85)	271/1439	0.56(0.44,0.72)	0.73(0.55,0.98)	0.79(0.59,1.06)	0.83(0.62,1.11)
Q4(≥48.86)	209/1426	0.44(0.33,0.59)	0.43(0.30,0.62)	0.49(0.35,0.70)	0.49(0.34,0.71)
P trend	139/1437	<0.001	<0.001	<0.001	<0.001
Serum UMFA (nmol/L)					

Q1(≤0.46)	254/1472	Ref	Ref	Ref	Ref
Q2(0.46-0.62)	230/1409	1.02(0.78,1.33)	1.01(0.76,1.35)	1.02(0.77,1.35)	1.06(0.80,1.40)
Q3(0.63-0.94)	228/1431	0.94(0.75,1.17)	0.93(0.74,1.17)	0.96(0.76,1.22)	1.02(0.76,1.38)
Q4(≥0.94)	223/1436	0.87(0.62,1.22)	0.89(0.62,1.26)	1.02(0.71,1.45)	1.18(0.75,1.85)
P trend		0.306	0.393	0.972	0.531
Serum non-methylated folate (nmol/L)					
Q1(≤0.83)	222/1416	Ref	Ref	Ref	Ref
Q2(0.84-1.05)	232/1458	1.19(0.84,1.69)	1.28(0.89,1.84)	1.32(0.91,1.92)	1.31(0.89,1.93)
Q3(1.06-1.35)	254/1437	1.44(1.05,1.98)	1.62(1.17,2.24)	1.80(1.28,2.53)	1.95(1.35,2.81)
Q4(≥1.36)	227/1437	1.08(0.83,1.41)	1.28(0.98,1.66)	1.53(1.17,1.99)	1.92(1.38,2.68)
P trend		0.278	0.02	<0.001	<0.001
Serum Mefox oxidation product (nmol/L)					
Q1(≤0.83)	196/1453	Ref	Ref	Ref	Ref
Q2(0.84-1.35)	207/1422	1.11(0.71,1.73)	1.18(0.76,1.83)	1.19(0.77,1.84)	1.12(0.71,1.77)
Q3(1.36-2.33)	229/1441	1.22(0.82,1.82)	1.35(0.91,2.01)	1.41(0.94,2.10)	1.28(0.85,1.92)
Q4(≥2.34)	1432/1432	2.07(1.51,2.82)	2.25(1.65,3.06)	2.39(1.76,3.24)	2.19(1.61,2.99)
P trend		<0.001	<0.001	<0.001	<0.001

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as odds risk and 95% confidence intervals.

e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 6 The association of the intake of folate from diverse sources and the level of several serum folate forms with HD.

		HD			
	[b]Case/N	Model 1 [d]OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)
Total folate (DFE, mcg/d)					
[b]Q1(≤347.00)	2708/4728	[a]Ref	Ref	Ref	Ref
Q2(347.01 - <521.01)	2369/4720	0.77(0.70,0.86)	0.81(0.73,0.91)	0.81(0.73,0.91)	0.86(0.76,0.97)
Q3(521.01 - <853.00)	2213/4727	0.75(0.68,0.83)	0.81(0.72,0.90)	0.80(0.70,0.91)	0.85(0.73,0.99)
Q4(≥853.01)	2154/4714	0.63(0.55,0.72)	0.72(0.63,0.83)	0.69(0.58,0.82)	0.69(0.56,0.84)
P trend		<0.001	<0.001	<0.001	0.001
Dietary folate (DFE, mcg/d)					
Q1(<316.00)	2551/4744	Ref	Ref	Ref	Ref
Q2(316.51 - <444.00)	2442/4703	0.78(0.70,0.88)	0.81(0.72,0.91)	0.81(0.72,0.91)	0.83(0.73,0.95)
Q3(444.01 - <624.50)	2334/4738	0.80(0.71,0.90)	0.84(0.75,0.95)	0.84(0.74,0.96)	0.87(0.75,1.00)
Q4(≥624.51)	2117/4704	0.67(0.60,0.76)	0.73(0.64,0.82)	0.73(0.64,0.83)	0.78(0.67,0.92)
P trend		<0.001	<0.001	<0.001	0.011
Natural food folate (DFE, mcg/d)					
Q1(<135.00)	2625/4732	Ref	Ref	Ref	Ref
Q2(135.01 - <188.00)	2409/4727	0.88(0.79,0.97)	0.93(0.84,1.03)	0.94(0.84,1.05)	0.90(0.79,1.03)
Q3(188.01- <258.50)	2210/4708	0.75(0.67,0.84)	0.84(0.74,0.94)	0.85(0.75,0.96)	0.86(0.75,0.99)
Q4(≥258.51)	2200/4722	0.68(0.61,0.76)	0.80(0.71,0.90)	0.81(0.71,0.92)	0.78(0.68,0.90)
P trend		<0.001	<0.001	<0.001	<0.001

Synthetic folic acid (DFE, mcg/d)					
Q1(<81.00)	2667/4730	Ref	Ref	Ref	Ref
Q2(81.01- <137.50)	2413/4722	0.97(0.87,1.08)	0.96(0.85,1.07)	0.95(0.85,1.07)	0.99(0.87,1.13)
Q3(137.51 - <224.50)	2303/4719	0.90(0.80,1.01)	0.88(0.78,0.99)	0.88(0.78,0.99)	0.89(0.77,1.03)
Q4(≥224.51)	2061/4718	0.81(0.72,0.90)	0.81(0.72,0.91)	0.82(0.72,0.93)	0.89(0.77,1.04)
P trend		<0.001	<0.001	<0.001	0.065
Folic acid supplement taken					
No	7398/14561	Ref	Ref	Ref	Ref
Yes	2046/4328	0.70(0.63,0.76)	0.81(0.74,0.89)	0.85(0.77,0.94)	0.84(0.75,0.93)
P value		<0.001	<0.001	0.002	0.002
Serum total folate (mmol/l)					
Q1(≤11.07)	2243/4296	Ref	Ref	Ref	Ref
Q2(11.07-19.0))	2156/4405	0.81(0.73,0.90)	0.89(0.79,0.99)	0.90(0.80,1.00)	0.85(0.76,0.95)
Q3(19.01-32.00)	2156/4354	0.83(0.74,0.93)	0.96(0.85,1.10)	1.00(0.87,1.13)	0.93(0.81,1.07)
Q4(≥32.01)	2144/4343	0.68(0.59,0.78)	0.83(0.70,0.99)	0.88(0.74,1.05)	0.74(0.61,0.89)
P trend		<0.001	0.090	0.315	0.008
Serum 5-mTHF (nmol/L)					
Q1(≤22,70)	699/1446	Ref	Ref	Ref	Ref
Q2(22.71-33.10)	644/1439	0.94(0.74,1.20)	0.86(0.69,1.07)	0.86(0.69,1.07)	0.76(0.58,0.99)
Q3(33.11-48.85)	644/1426	0.89(0.73,1.08)	0.77(0.56,1.07)	0.78(0.57,1.06)	0.76(0.54,1.06)
Q4(≥48.86)	684/1437	1.04(0.82,1.31)	0.75(0.56,0.99)	0.75(0.57,0.99)	0.66(0.48,0.89)
P trend		0.027	0.058	0.053	0.021
Serum UMFA (nmol/L)					

Q1(≤0.46)	627/1472	Ref	Ref	Ref	Ref
Q2(0.46-0.62)	05/1409	0.94(0.74,1.21)	0.94(0.73,1.20)	0.94(0.74,1.20)	1.00(0.77,1.31)
Q3(0.63-0.94)	698/1431	0.90(0.74,1.09)	0.88(0.73,1.06)	0.89(0.73,1.08)	0.95(0.76,1.19)
Q4(≥0.94)	741/1436	1.04(0.81,1.35)	1.00(0.78,1.29)	1.04(0.82,1.31)	1.00(0.78,1.29)
P trend		0.832	0.867	0.887	0.878
Serum non-methylated folate (nmol/L)					
Q1(≤0.83)	545/1416	Ref	Ref	Ref	Ref
Q2(0.84-1.05)	594/1458	1.04(0.82,1.32)	1.01(0.79,1.28)	1.02(0.80,1.29)	0.95(0.71,1.27)
Q3(1.06-1.35)	725/1437	1.33(1.05,1.69)	1.30(1.02,1.65)	1.35(1.07,1.70)	1.43(1.10,1.85)
Q4(≥1.36)	807/1437	1.52(1.21,1.90)	1.46(1.16,1.83)	1.57(1.26,1.97)	1.53(1.14,2.07)
P trend		<0.001	<0.001	<0.001	0.001
Serum Mefox oxidation product (nmol/L)					
Q1(≤0.83)	580/1453	Ref	Ref	Ref	Ref
Q2(0.84-1.35)	581/1422	1.22(0.93,1.62)	1.22(0.93,1.60)	1.23(0.93,1.61)	1.10(0.85,1.42)
Q3(1.36-2.33)	691/1441	1.49(1.16,1.93)	1.47(1.14,1.89)	1.49(1.16,1.91)	1.22(0.93,1.60)
Q4(≥2.34)	819/1432	2.00(1.53,2.62)	1.88(1.43,2.48)	1.92(1.46,2.52)	1.56(1.12,2.17)
P trend		<0.001	<0.001	<0.001	0.007

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as odds risk and 95% confidence intervals.

e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 7 The association of the intake of folate from diverse sources and the level of several serum folate forms with AL.

		AL			
	[b]Case/N	Model 1 [d]OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)
Total folate (DFE, mcg/d)					
[b]Q1(≤347.00)	1774/4728	[a]Ref	Ref	Ref	Ref
Q2(347.01 - <521.01)	1546/4720	0.86(0.77,0.97)	0.91(0.81,1.02)	0.89(0.79,1.01)	0.95(0.83,1.07)
Q3(521.01 - <853.00)	1404/4727	0.79(0.68,0.90)	0.86(0.75,0.99)	0.82(0.71,0.95)	0.88(0.76,1.02)
Q4(≥853.01)	1397/4714	0.63(0.56,0.72)	0.73(0.65,0.84)	0.67(0.57,0.79)	0.69(0.58,0.82)
P trend		<0.001	<0.001	<0.001	<0.001
Dietary folate (DFE, mcg/d)					
Q1(<316.00)	1661/4744	Ref	Ref	Ref	Ref
Q2(316.51 - <444.00)	1546/4703	0.79(0.71,0.88)	0.82(0.74,0.92)	0.81(0.71,0.91)	0.83(0.73,0.95)
Q3(444.01 - <624.50)	1542/4738	0.83(0.73,0.95)	0.90(0.79,1.03)	0.87(0.75,1.00)	0.89(0.77,1.04)
Q4(≥624.51)	1354/4704	0.63(0.55,0.71)	0.70(0.62,0.80)	0.67(0.58,0.78)	0.73(0.63,0.85)
P trend		<0.001	<0.001	<0.001	<0.001
Natural food folate (DFE, mcg/d)					
Q1(<135.00)	1712/4732	Ref	Ref	Ref	Ref
Q2(135.01 - <188.00)	1542/4727	0.85(0.76,0.95)	0.92(0.82,1.03)	0.91(0.81,1.03)	0.89(0.79,1.01)
Q3(188.01- <258.50)	1437/4708	0.73(0.64,0.84)	0.84(0.73,0.96)	0.83(0.72,0.96)	0.86(0.74,0.99)
Q4(≥258.51)	1412/4722	0.62(0.54,0.72)	0.75(0.65,0.87)	0.75(0.63,0.89)	0.74(0.62,0.90)
P trend		<0.001	<0.001	<0.001	0.002

Synthetic folic acid (DFE, mcg/d)					
Q1(<81.00)	1768/4730	Ref	Ref	Ref	Ref
Q2(81.01- <137.50)	1545/4722	0.96(0.85,1.09)	0.96(0.84,1.09)	0.93(0.82,1.05)	0.95(0.83,1.09)
Q3(137.51 - <224.50)	1509/4719	1.00(0.88,1.13)	1.00(0.89,1.14)	0.97(0.85,1.10)	0.99(0.87,1.13)
Q4(≥224.51)	1281/4718	0.77(0.67,0.88)	0.80(0.71,0.91)	0.77(0.68,0.88)	0.83(0.73,0.95)
P trend		<0.001	0.004	<0.001	0.023
Folic acid supplement taken					
No	4796/14561	Ref	Ref	Ref	Ref
Yes	1307/4328	0.62(0.53,0.71)	0.68(0.58,0.80)	0.70(0.60,0.83)	0.67(0.56,0.80)
P value		<0.001	<0.001	<0.001	<0.001
Serum total folate (mmol/l)					
Q1(≤11.07)	1490/4296	Ref	Ref	Ref	Ref
Q2(11.07-19.0))	1326/4405	0.73(0.65,0.82)	0.78(0.69,0.88)	0.80(0.71,0.90)	0.77(0.68,0.88)
Q3(19.01-32.00)	1327/4354	0.72(0.63,0.83)	0.76(0.66,0.88)	0.79(0.68,0.92)	0.76(0.65,0.89)
Q4(≥32.01)	1331/4343	0.66(0.58,0.75)	0.69(0.57,0.83)	0.73(0.60,0.90)	0.67(0.55,0.83)
P trend		<0.001	<0.001	0.030	<0.001
Serum 5-mTHF (nmol/L)					
Q1(≤22,70)	476/1446	Ref	Ref	Ref	Ref
Q2(22.71-33.10)	400/1439	0.65(0.52,0.82)	0.69(0.54,0.87)	0.69(0.54,0.88)	0.62(0.50,0.78)
Q3(33.11-48.85)	376/1426	0.59(0.43,0.81)	0.65(0.47,0.90)	0.67(0.48,0.94)	0.67(0.48,0.92)
Q4(≥48.86)	417/1437	0.57(0.41,0.80)	0.63(0.45,0.88)	0.66(0.45,0.96)	0.60(0.40,0.89)
P trend		0.003	0.012	0.034	0.019
Serum UMFA (nmol/L)					

Q1(≤0.46)	362/1472	Ref	Ref	Ref	Ref
Q2(0.46-0.62)	371/1409	1.16(0.90,1.51)	1.13(0.87,1.47)	1.12(0.86,1.45)	1.28(0.95,1.73)
Q3(0.63-0.94)	443/1431	1.13(0.91,1.41)	1.07(0.86,1.34)	1.07(0.84,1.35)	1.24(0.97,1.59)
Q4(≥0.94)	493/1436	1.05(0.78,1.42)	1.00(0.75,1.33)	1.04(0.79,1.38)	1.05(0.74,1.49)
P trend		0.814	0.894	0.896	0.797
Serum non-methylated folate (nmol/L)					
Q1(≤0.83)	336/1416	Ref	Ref	Ref	Ref
Q2(0.84-1.05)	353/1458	0.98(0.74,1.30)	1.02(0.75,1.38)	1.02(0.75,1.39)	1.02(0.73,1.42)
Q3(1.06-1.35)	424/1437	1.20(0.87,1.65)	1.28(0.91,1.80)	1.34(0.95,1.89)	1.47(1.05,2.06)
Q4(≥1.36)	556/1437	1.37(1.04,1.81)	1.51(1.12,2.03)	1.68(1.25,2.27)	1.88(1.31,2.68)
P trend		0.027	0.007	0.001	<0.001
Serum Mefox oxidation product (nmol/L)					
Q1(≤0.83)	275/1453	Ref	Ref	Ref	Ref
Q2(0.84-1.35)	348/1422	1.52(1.11,2.07)	1.59(1.17,2.15)	1.58(1.18,2.12)	1.53(1.20,1.95)
Q3(1.36-2.33)	441/1441	1.59(1.21,2.07)	1.66(1.28,2.14)	1.69(1.32,2.18)	1.49(1.17,1.91)
Q4(≥2.34)	605/1432	2.56(1.85,3.54)	2.53(1.82,3.50)	2.58(1.88,3.55)	2.22(1.64,2.99)
P trend		<0.001	<0.001	<0.001	<0.001

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as odds risk and 95% confidence intervals.

e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 8 The association of the intake of folate from diverse sources with PA and KDM.

		PA					KDM			
	[b]Case/N	Model 1 [d]β(95%CI)	Model 2 β(95%CI)	Model 3 β (95%CI)	Model 4 β (95%CI)	Case/N	Model 1 β(95%CI)	Model 2 β(95%CI)	Model 3 β (95%CI)	Model 4 β (95%CI)
Total folate (DFE, mcg/d)										
[c]Q1(<8.44)	2172/4728	[a]Ref	Ref	Ref	Ref	2113/4633	Ref	Ref	Ref	Ref
Q2(8.45 - <9.03)	2071/4720	-0.44 (-0.67, -0.21)	-0.26 (-0.46, -0.05)	-0.19 (-0.40, 0.02)	-0.03 (-0.22, 0.16)	2035/4624	-0.52 (-0.91, -0.14)	-0.33 (-0.71, 0.04)	-0.09 (-0.45, 0.28)	0.09 (-0.24, 0.43)
Q3(9.04 - <9.74)	1994/4727	-0.79 (-1.02, -0.55)	-0.50 (-0.73, -0.27)	-0.39 (-0.62, -0.16)	-0.18 (-0.38, 0.02)	1955/4627	-0.89 (-1.24, -0.53)	-0.58 (-0.94, -0.23)	-0.13 (-0.52, 0.25)	0.12 (-0.22, 0.46)
Q4(≥9.75)	1784/4714	-1.46 (-1.74, -1.19)	-0.96 (-1.20, -0.71)	-0.77 (-1.05, -0.49)	-0.54 (-0.80, -0.29)	1747/4627	-2.25 (-2.64, -1.87)	-1.76 (-2.14, -1.37)	-0.93 (-1.42, -0.44)	-0.67 (-1.13, -0.21)
P trend		<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	0.002	0.027
Dietary folate (DFE, mcg/d)										
Q1(<8.31)		Ref	Ref	Ref	Ref	2144/4643	Ref	Ref	Ref	Ref
Q2(8.32 - <8.79)	2188/4727	-0.56 (-0.82, -0.31)	-0.41 (-0.66, -0.16)	-0.36 (-0.60, -0.12)	-0.26 (-0.48, -0.04)	2017/4654	-0.67 (-1.03, -0.30)	-0.47 (-0.84, -0.11)	-0.27 (-0.63, 0.10)	-0.11 (-0.45, 0.24)
Q3(8.80 - <9.29)	2070/4743	-0.62 (-0.89, -0.35)	-0.36 (-0.61, -0.12)	-0.29 (-0.53, -0.05)	-0.17 (-0.37, 0.03)	1916/4620	-0.64 (-1.03, -0.25)	-0.33 (-0.72, 0.05)	0.00 (-0.41, 0.40)	0.15 (-0.20, 0.50)
Q4(≥9.30)	1942/4707	-1.17 (-1.43, -0.91)	-0.81 (-1.06, -0.56)	-0.70 (-0.95, -0.45)	-0.42 (-0.64, -0.19)	1773/4594	-1.60 (-1.98, -1.22)	-1.21 (-1.59, -0.84)	-0.75 (-1.15, -0.34)	-0.38 (-0.77, -0.01)
P trend	1821/4712	<0.001	<0.001	<0.001	0.002		<0.001	<0.001	0.003	0.023
Food natural folate (DFE, mcg/d)										
Q1(<7.08)		Ref	Ref	Ref	Ref	1931/4651	Ref	Ref	Ref	Ref
Q2(7.09 - <7.55)	1977/4744	-0.53 (-0.78, -0.27)	-0.28 (-0.52, -0.05)	-0.23 (-0.47,0.02)	-0.24 (-0.47, -0.02)	1960/4628	-0.83 (-1.23, -0.44)	-0.58 (-0.96, -0.19)	-0.34 (-0.73, 0.05)	-0.35 (-0.73, 0.03)
Q3(7.56 - <8.01)	1998/4703	-1.26 (-1.54, -0.99)	-0.85 (-1.11, -0.60)	-0.75 (-1.01, 0.48)	-0.66 (-0.91, -0.40)	2051/4620	-1.79 (-2.16, -1.42)	-1.37 (-1.72, -1.02)	-0.93 (-1.32, -0.53)	-0.79 (-1.16, -0.41)
Q4(≥8.02)	2104/4738	-1.83 (-2.10, -1.56)	-1.26 (-1.51, -1.01)	-1.09 (-1.37, -0.81)	-1.03 (-1.29, -0.77)	1908/4612	-2.43 (-2.82, -2.04)	-1.90 (-2.28, -1.52)	-1.26 (-1.70, -0.82)	-1.16 (-1.56, -0.75)
P trend	1942/4704	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001

Food synthetic folic acid (DFE, mcg/d)										
Q1(<6.34)		Ref	Ref	Ref	Ref	2043/4655	Ref	Ref	Ref	Ref
Q2(6.35 - <7.10)	2084/4732	0.09 (-0.15, 0.33)	0.08 (-0.15, 0.32)	0.03 (-0.19, 0.25)	0.08 (-0.13, 0.29)	2054/4613	0.11 (-0.27, 0.49)	0.16 (-0.21, 0.54)	0.12 (-0.24, 0.48)	0.18 (-0.18, 0.54)
Q3(7.11 - <7.81)	2108/4727	0.24 (-0.03, 0.50)	0.24 (-0.01, 0.49)	0.21 (-0.04 ,0.47)	0.29 (0.05, 0.53)	1986/4617	0.36 (-0.07, 0.80)	0.45 (0.03, 0.87)	0.49 (0.06, 0.91)	0.56 (0.16, 0.97)
Q4(≥7.82)	2018/4708	-0.32 (-0.57, -0.07)	-0.21 (-0.44, 0.02)	-0.19 (-0.43, 0.05)	0.04 (-0.18, 0.26)	1767/4626	-0.48 (-0.85, -0.11)	-0.30 (-0.65, 0.04)	-0.14 (-0.50, 0.21)	0.14 (-0.23, 0.51)
P trend	1811/4722	0.032	0.166	0.27	0.456		0.049	0.237	0.787	0.286
Folic acid supplement taken										
No	2495/14561	Ref	Ref	Ref	Ref	7398/14561	Ref	Ref	Ref	Ref
Yes	477/4328	-0.02 (-0.02, -0.01)	-0.01 (-0.01,0.00)	-0.01 (-0.01,0.00)	-0.01 (-0.01,0.00)	2046/4328	-0.07 (-0.10, -0.04)	-0.03 (-0.06,0.01)	-0.02 (-0.05,0.02)	-0.03 (-0.06, -0.01)
P value		<0.001	0.007	0.132	0.020		<0.001	0.106	0.048	0.017

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as beta estimates and 95% confidence intervals.
e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, alcohol consumption, smoking, BM, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, folic acid supplement use, and diet quality.

Supplementary Table 9 The association of the intake of folate from diverse sources with HD and AL.

		HD					AL			
	[b]Case/N	Model 1 [d]β(95%CI)	Model 2 β(95%CI)	Model 3 β (95%CI)	Model 4 β (95%CI)	Case/N	Model 1 β(95%CI)	Model 2 β(95%CI)	Model 3 β (95%CI)	Model 4 β (95%CI)
Total folate (DFE, mcg/d)										
[c]Q1(<8.44)	2708/4728	[a]Ref	Ref	Ref	Ref	1774/4728	Ref	Ref	Ref	Ref
Q2(8.45 - <9.03)	2369/4720	-0.07 (-0.10, -0.03)	-0.05 (-0.08, -0.01)	-0.04 (-0.07, -0.01)	-0.01 (-0.03, 0.02)	1546/4720	-0.01 (-0.02, 0.00)	-0.01 (-0.01, 0.00)	-0.01 (-0.02, 0.00)	0.00 (-0.01, 0.00)
Q3(9.04 - <9.74)	2213/4727	-0.10 (-0.13, -0.06)	-0.07 (-0.10, -0.03)	-0.05 (-0.09, -0.02)	-0.02 (-0.05, 0.01)	1404/4727	-0.02 (-0.03, -0.01)	-0.01 (-0.02, 0.00)	-0.02 (-0.02, -0.01)	-0.01 (-0.02, 0.00)
Q4(≥9.75)	2154/4714	-0.14 (-0.17, -0.10)	-0.09 (-0.12, -0.05)	-0.08 (-0.12, -0.04)	-0.06 (-0.10, -0.02)	1397/4714	-0.03 (-0.04, -0.02)	-0.02 (-0.03, -0.01)	-0.03 (-0.03, -0.02)	-0.02 (-0.03, -0.01)
P trend		<0.001	<0.001	<0.001	0.004		<0.001	<0.001	<0.001	<0.001
Dietary folate (DFE, mcg/d)										
Q1(<8.31)	2667/4730	Ref	Ref	Ref	Ref	1768/4730	Ref	Ref	Ref	Ref
Q2(8.32 - <8.79)	2413/4722	-0.07 (-0.11, -0.04)	-0.06 (-0.09, -0.03)	-0.05 (-0.08, -0.02)	-0.03 (-0.06, 0.00)	1545/4722	-0.02 (-0.02, -0.01)	-0.01 (-0.02, -0.01)	-0.02 (-0.02, -0.01)	-0.01 (-0.02, 0.00)
Q3(8.80 - <9.29)	2303/4719	-0.06 (-0.10, -0.02)	-0.04 (-0.07,0.00)	-0.02 (-0.06, 0.01)	-0.01 (-0.04, 0.02)	1509/4719	-0.02 (-0.02, -0.01)	-0.01 (-0.02, 0.00)	-0.01 (-0.02, -0.01)	-0.01 (-0.02, 0.00)
Q4(≥9.30)	2061/4718	-0.13 (-0.16, -0.10)	-0.10 (-0.13, -0.07)	-0.08 (-0.12, -0.05)	-0.05 (-0.08, -0.02)	1281/4718	-0.03 (-0.04, -0.02)	-0.02 (-0.03, -0.01)	-0.03 (-0.04, -0.02)	-0.02 (-0.03, -0.01)
P trend		<0.001	<0.001	<0.001	0.003		<0.001	<0.001	<0.001	0.001
Food natural folate (DFE, mcg/d)										
Q1(<7.08)	2629/4727	Ref	Ref	Ref	Ref	1746/4727	Ref	Ref	Ref	Ref
Q2(7.09 - <7.55)	2483/4743	-0.05 (-0.09, -0.02)	-0.03 (-0.06, 0.01)	-0.02 (-0.05, 0.02)	-0.02 (-0.05, 0.01)	1624/4743	-0.01 (-0.01, 0.00)	0.00 (-0.01, 0.01)	0.00 (-0.01, 0.01)	0.00 (-0.01, 0.01)
Q3(7.56 - <8.01)	2293/4707	-0.09 (-0.12, -0.06)	-0.05 (-0.08, -0.01)	-0.03 (-0.06, 0.00)	-0.02 (-0.05, 0.01)	1438/4707	-0.02 (-0.03, -0.01)	-0.01 (-0.02, 0.00)	-0.01 (-0.02, 0.00)	-0.01 (-0.02, 0.00)
Q4(≥8.02)	2038/4712	-0.13 (-0.16, -0.09)	-0.06 (-0.10, -0.03)	-0.04 (-0.08, 0.00)	-0.05 (-0.08, -0.01)	1250/4712	-0.03 (-0.04, -0.02)	-0.02 (-0.02, -0.01)	-0.02 (-0.03, -0.01)	-0.01 (-0.02, -0.01)
P trend		<0.001	<0.001	0.019	0.010		<0.001	<0.001	<0.001	<0.001

Food synthetic folic acid (DFE, mcg/d)										
Q1(<6.34)	2551/4744	Ref	Ref	Ref	Ref	1661/4744	Ref	Ref	Ref	Ref
Q2(6.35 - <7.10)	2442/4703	-0.02 (-0.05, 0.01)	-0.03 (-0.06, 0.01)	-0.02 (-0.06, 0.01)	-0.01 (-0.04, 0.02)	1546/4703	-0.01 (-0.01, 0.00)	-0.01 (-0.01, 0.00)	-0.01 (-0.01, 0.00)	-0.01 (-0.01, 0.00)
Q3(7.11 - <7.81)	2334/4738	-0.02 (-0.06, 0.02)	-0.03 (-0.06, 0.01)	-0.02 (-0.05, 0.02)	0.00 (-0.03, 0.03)	1542/4738	0.00 (-0.01, 0.01)	0.00 (-0.01, 0.01)	-0.01 (-0.01, 0.00)	0.00 (-0.01, 0.00)
Q4(≥7.82)	2117/4704	-0.08 (-0.11, -0.05)	-0.07 (-0.10, -0.05)	-0.06 (-0.09, -0.03)	-0.03 (-0.06, 0.01)	1354/4704	-0.02 (-0.03, -0.01)	-0.02 (-0.02, -0.01)	-0.02 (-0.03, -0.01)	-0.01 (-0.02, -0.01)
P trend		<0.001	<0.001	<0.001	0.050		<0.001	0.001	<0.001	0.008
Folic acid supplement taken										
No	7398/14561	Ref	Ref	Ref	Ref	4796/14561	Ref	Ref	Ref	Ref
Yes	2046/4328	-0.97 (-1.19, -0.74)	-0.57 (-0.79, -0.36)	-0.46 (-0.68, -0.24)	-0.46 (-0.65, -0.27)	1307/4328	-1.70 (-2.01, -1.39)	-1.40 (-1.71, -1.08)	-1.24 (-1.56, -0.93)	-1.29 (-1.59, -0.99)
P value		<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as beta estimates and 95% confidence intervals.
e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, alcohol consumption, smoking, BM, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, folic acid supplement use, and diet quality.

Supplementary Table 10 Modification effect of covariates on the association of the intake of folate from diverse sources with biological age indicators.

	Total folate (DFE, mcg/d)		Dietary folate (DFE, mcg/d)		Food natural folate (DFE, mcg/d)		Food synthetic folic acid (DFE, mcg/d)	
	[a]OR(95%CI)	P for interaction	OR (95%CI)	P for interaction	OR (95%CI)	P for interaction	OR (95%CI)	P for interaction
PA								
Age	1.04(0.95,1.14)	0.415	0.97(0.89,1.07)	0.554	0.95(0.87,1.04)	0.267	1.00(0.91,1.10)	0.994
Sex	1.06(0.97,1.15)	0.189	1.09(1.01,1.17)	0.023	1.09(1.00,1.19)	0.046	1.03(0.95,1.11)	0.451
Race	1.01(0.98,1.05)	0.477	1.01(0.97,1.04)	0.760	1.03(1.00,1.06)	0.105	1.00(0.96,1.03)	0.807
Smoking	1.02(0.95,1.10)	0.561	1.10(1.03,1.17)	0.008	1.03(0.95,1.10)	0.484	1.10(1.02,1.19)	0.014
Drinking	0.96(0.91,1.01)	0.086	0.95(0.90,1.00)	0.049	0.96(0.92,1.01)	0.110	0.97(0.92,1.02)	0.239
Physical activity level	0.94(0.90,0.99)	0.015	0.95(0.91,1.00)	0.044	0.97(0.93,1.01)	0.166	0.98(0.94,1.02)	0.276
Family poverty income ratio	0.98(0.93,1.04)	0.559	1.00(0.94,1.05)	0.904	0.96(0.91,1.01)	0.112	1.03(0.97,1.09)	0.301
Education level	1.09(0.98,1.20)	0.103	1.02(0.93,1.11)	0.685	0.97(0.89,1.07)	0.573	1.06(0.97,1.15)	0.219
BMI	1.07(1.00,1.16)	0.063	1.12(1.05,1.20)	0.001	1.13(1.04,1.22)	0.004	1.08(0.99,1.17)	0.079
Diabetes	0.92(0.82,1.03)	0.125	1.05(0.94,1.17)	0.368	1.00(0.90,1.11)	0.953	1.09(0.98,1.22)	0.124
Hypertension	0.96(0.89,1.04)	0.304	0.96(0.89,1.03)	0.240	0.99(0.92,1.07)	0.846	0.99(0.92,1.06)	0.726
Dyslipidemia	0.99(0.92,1.08)	0.852	1.01(0.93,1.09)	0.861	1.00(0.90,1.11)	0.953	1.09(0.98,1.22)	0.124
Cardiovascular disease	1.08(0.96,1.21)	0.194	1.10(0.97,1.23)	0.136	1.01(0.91,1.12)	0.873	1.15(1.02,1.29)	0.022
Folic acid supplement use	0.98(0.83,1.16)	0.791	1.06(0.96,1.17)	0.231	0.99(0.88,1.11)	0.849	1.12(1.02,1.22)	0.014
KDM								
Age	0.93(0.81,1.05)	0.241	0.90(0.80,1.01)	0.072	0.91(0.80,1.02)	0.098	0.91(0.81,1.02)	0.095
Sex	1.19(1.07,1.32)	0.002	1.14(1.01,1.28)	0.030	1.19(1.07,1.32)	0.001	1.08(0.96,1.20)	0.187
Race	0.97(0.93,1.02)	0.253	0.99(0.94,1.04)	0.648	0.98(0.93,1.02)	0.315	0.97(0.93,1.02)	0.267
Smoking	0.99(0.90,1.08)	0.794	0.99(0.91,1.08)	0.869	0.99(0.90,1.09)	0.882	0.99(0.91,1.08)	0.821
Drinking	0.98(0.91,1.05)	0.520	0.94(0.87,1.01)	0.103	0.91(0.84,0.98)	0.017	0.98(0.92,1.05)	0.622

Physical activity level	0.96(0.90,1.03)	0.267	0.91(0.85,0.98)	0.012	0.97(0.91,1.04)	0.356	0.94(0.89,1.00)	0.046
Family poverty income ratio	0.93(0.88,0.99)	0.031	0.96(0.90,1.03)	0.234	0.94(0.88,1.01)	0.075	0.99(0.92,1.06)	0.745
Education level	1.01(0.89,1.14)	0.917	0.95(0.83,1.08)	0.404	0.94(0.84,1.05)	0.257	1.01(0.90,1.14)	0.826
BMI	1.07(0.97,1.18)	0.181	1.13(1.02,1.26)	0.019	1.10(0.99,1.21)	0.067	1.13(1.02,1.25)	0.022
Diabetes	0.95(0.84,1.06)	0.345	1.04(0.92,1.18)	0.502	1.07(0.93,1.22)	0.338	1.05(0.93,1.18)	0.471
Hypertension	0.96(0.86,1.07)	0.430	1.05(0.93,1.17)	0.454	1.10(0.99,1.22)	0.070	1.04(0.95,1.13)	0.456
Dyslipidemia	0.92(0.84,1.02)	0.098	0.95(0.85,1.07)	0.378	1.07(0.93,1.22)	0.338	1.05(0.93,1.18)	0.471
Cardiovascular disease	0.97(0.85,1.11)	0.683	1.03(0.89,1.19)	0.701	0.96(0.83,1.11)	0.584	1.08(0.93,1.24)	0.313
Folic acid supplement use	0.90(0.86,0.95)	0.000	0.86(0.81,0.91)	0.000	0.87(0.81,0.92)	0.000	0.86(0.81,0.91)	0.000
HD								
Age	0.96(0.88,1.06)	0.439	0.97(0.88,1.07)	0.520	0.92(0.83,1.01)	0.093	1.00(0.91,1.10)	0.961
Sex	1.06(0.98,1.15)	0.166	0.97(0.88,1.07)	0.002	1.05(0.96,1.14)	0.320	1.12(1.04,1.21)	0.005
Race	1.03(0.99,1.07)	0.155	1.03(0.99,1.07)	0.164	1.00(0.97,1.03)	0.949	1.02(0.99,1.06)	0.248
Smoking	0.97(0.88,1.06)	0.451	1.02(0.94,1.10)	0.665	1.05(0.97,1.14)	0.210	1.00(0.91,1.08)	0.901
Drinking	1.01(0.95,1.07)	0.823	0.97(0.91,1.03)	0.323	0.96(0.90,1.01)	0.097	1.00(0.95,1.06)	0.912
Physical activity level	0.99(0.95,1.04)	0.641	1.01(0.96,1.05)	0.744	0.97(0.93,1.02)	0.290	1.02(0.98,1.07)	0.279
Family poverty income ratio	0.96(0.91,1.02)	0.159	1.00(0.93,1.07)	0.927	0.96(0.91,1.03)	0.234	1.04(0.97,1.11)	0.302
Education level	1.06(0.97,1.16)	0.217	1.02(0.92,1.13)	0.659	0.95(0.86,1.04)	0.258	1.02(0.93,1.12)	0.693
BMI	0.97(0.89,1.06)	0.514	1.03(0.95,1.13)	0.482	1.08(1.01,1.17)	0.034	1.01(0.92,1.10)	0.850
Diabetes	1.15(1.02,1.31)	0.237	1.03(0.86,1.22)	0.782	0.94(0.81,1.10)	0.443	1.06(0.88,1.27)	0.521
Hypertension	0.98(0.89,1.08)	0.574	1.03(0.95,1.11)	0.473	1.04(0.96,1.12)	0.332	1.03(0.96,1.10)	0.480
Dyslipidemia	0.91(0.84,1.00)	0.093	0.96(0.88,1.04)	0.288	0.94(0.81,1.10)	0.443	1.06(0.88,1.27)	0.521
Cardiovascular disease	0.85(0.72,1.01)	0.027	1.06(0.92,1.21)	0.424	0.89(0.76,1.03)	0.119	1.15(1.01,1.31)	0.038
Folic acid supplement use	1.03(0.90,1.17)	0.248	1.02(0.92,1.13)	0.720	0.94(0.86,1.03)	0.172	1.05(0.94,1.16)	0.413
AL								
Age	0.94(0.88,1.01)	0.083	0.97(0.90,1.06)	0.502	0.93(0.84,1.02)	0.099	1.00(0.92,1.09)	0.935

Sex	1.03(0.95,1.12)	0.488	1.03(0.95,1.12)	0.482	1.05(0.96,1.16)	0.302	0.97(0.90,1.05)	0.406
Race	0.98(0.94,1.01)	0.177	0.97(0.94,1.00)	0.039	0.99(0.95,1.02)	0.443	0.98(0.94,1.01)	0.173
Smoking	1.00(0.91,1.09)	0.973	0.99(0.92,1.07)	0.789	1.01(0.93,1.09)	0.883	0.98(0.90,1.06)	0.548
Drinking	1.01(0.95,1.08)	0.776	1.01(0.96,1.07)	0.710	0.97(0.92,1.03)	0.312	1.00(0.95,1.06)	0.867
Physical activity level	0.99(0.93,1.05)	0.708	0.98(0.93,1.03)	0.407	0.99(0.95,1.04)	0.673	0.99(0.95,1.04)	0.670
Family poverty income ratio	0.96(0.90,1.03)	0.216	1.00(0.94,1.07)	0.914	0.96(0.91,1.02)	0.215	1.01(0.95,1.09)	0.717
Education level	1.00(0.91,1.10)	0.979	0.96(0.88,1.06)	0.440	0.99(0.90,1.09)	0.836	0.95(0.87,1.04)	0.271
BMI	0.96(0.89,1.03)	0.249	1.00(0.92,1.10)	0.924	1.02(0.95,1.11)	0.544	0.99(0.91,1.09)	0.895
Diabetes	0.92(0.83,1.02)	0.106	1.00(0.91,1.10)	0.977	0.97(0.88,1.08)	0.617	1.02(0.92,1.13)	0.734
Hypertension	0.99(0.91,1.08)	0.830	0.96(0.87,1.05)	0.333	0.97(0.89,1.05)	0.400	0.99(0.91,1.09)	0.893
Dyslipidemia	0.96(0.88,1.05)	0.352	0.97(0.90,1.05)	0.436	0.97(0.88,1.08)	0.617	1.02(0.92,1.13)	0.734
Cardiovascular disease	1.11(0.99,1.25)	0.079	1.11(0.99,1.24)	0.074	0.98(0.87,1.10)	0.745	1.18(1.05,1.33)	0.005
Folic acid supplement use	1.06(0.90,1.25)	0.459	0.99(0.91,1.07)	0.721	0.92(0.83,1.03)	0.135	1.04(0.94,1.13)	0.465

a Data were listed as odds risk and 95% confidence intervals.

b Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 11 Association of the intake of total folate with biological age indicators stratified by variables of interest.

		Total folate (DFE, mcg/d)				
		[b]Q1 [c]OR (95%CI)	Q2 OR (95%CI)	Q3 OR (95%CI)	Q4 OR (95%CI)	P value
PA						
Age						
	<65	[a]Ref	0.99(0.85,1.15)	0.90(0.78,1.05)	0.74(0.61,0.89)	0.004
	≥65	Ref	0.95(0.74,1.22)	0.74(0.57,0.96)	0.75(0.50,1.12)	0.066
Sex						
	Male	Ref	0.86(0.71,1.04)	0.74(0.62,0.90)	0.65(0.53,0.79)	<0.001
	Female	Ref	0.91(0.76,1.08)	0.94(0.78,1.13)	0.90(0.68,1.18)	0.841
Smoking						
	Yes	Ref	0.94(0.80,1.11)	0.83(0.69,1.00)	0.72(0.58,0.89)	0.007
	No	Ref	1.03(0.87,1.23)	0.94(0.79,1.12)	0.81(0.64,1.01)	0.196
Drinking						
	None	Ref	0.99(0.86,1.15)	0.95(0.81,1.11)	0.80(0.67,0.95)	0.041
	Moderate	Ref	0.90(0.67,1.20)	0.83(0.61,1.13)	0.75(0.49,1.15)	0.545
	Heavy	Ref	0.80(0.56,1.14)	0.65(0.45,0.94)	0.54(0.36,0.82)	0.013
Physical activity level						
	Mild	Ref	0.94(0.79,1.11)	0.94(0.80,1.11)	0.81(0.68,0.98)	0.084
	Moderate	Ref	0.96(0.76,1.20)	0.70(0.55,0.89)	0.63(0.48,0.84)	0.005
BMI						
	<30	Ref	0.86(0.74,1.00)	0.68(0.57,0.81)	0.67(0.54,0.82)	<0.001
	≥30	Ref	1.11(0.93,1.32)	1.09(0.90,1.34)	0.90(0.70,1.14)	0.696
Cardiovascular disease						

		Yes	Ref	0.94(0.67,1.32)	1.17(0.75,1.83)	0.93(0.56,1.57)	1.000
		No	Ref	0.96(0.84,1.09)	0.84(0.73,0.96)	0.72(0.61,0.85)	<0.001
	Folic acid supplement use						
		Yes	Ref	0.71(0.57,0.88)	0.76(0.57,1.01)	0.80(0.60,1.07)	0.006
		No	Ref	0.86(0.74,1.00)	0.83(0.72,0.95)	0.72(0.62,0.83)	<0.001
KDM							
	Age						
		<65	Ref	0.94(0.80,1.11)	0.96(0.79,1.16)	0.65(0.54,0.78)	<0.001
		≥65	Ref	0.99(0.74,1.32)	0.64(0.42,0.99)	0.62(0.41,0.93)	0.006
	Sex						
		Male	Ref	0.72(0.58,0.91)	0.48(0.37,0.63)	0.83(0.67,1.03)	<0.001
		Female	Ref	0.97(0.77,1.22)	0.76(0.59,0.97)	1.01(0.83,1.23)	0.083
	Smoking						
		Yes	Ref	0.92(0.72,1.16)	0.64(0.50,0.83)	0.93(0.74,1.16)	0.001
		No	Ref	0.85(0.67,1.09)	0.61(0.49,0.77)	0.96(0.82,1.11)	<0.001
	Drinking						
		None	Ref	0.85(0.71,1.02)	0.64(0.54,0.77)	1.11(0.70,1.74)	<0.001
		Moderate	Ref	1.00(0.63,1.60)	0.63(0.39,1.04)	1.02(0.67,1.55)	0.055
		Heavy	Ref	0.69(0.42,1.13)	0.88(0.73,1.06)	0.96(0.77,1.20)	0.140
	Physical activity level						
		Mild	Ref	0.88(0.73,1.06)	0.96(0.77,1.20)	0.63(0.51,0.77)	<0.001
		Moderate	Ref	0.83(0.63,1.09)	0.76(0.55,1.04)	0.50(0.37,0.68)	<0.001
	BMI						
		<30	Ref	0.85(0.70,1.04)	0.95(0.73,1.22)	0.63(0.49,0.80)	0.002
		≥30	Ref	1.07(0.85,1.34)	0.79(0.62,1.00)	0.70(0.55,0.90)	<0.001

	Cardiovascular disease						
		Yes	Ref	0.75(0.52,1.07)	0.72(0.48,1.10)	0.61(0.41,0.89)	0.018
		No	Ref	0.96(0.82,1.13)	0.95(0.79,1.14)	0.65(0.53,0.79)	<0.001
	Folic acid supplement use						
		Yes	Ref	0.63(0.44,0.89)	0.64(0.42,0.97)	0.79(0.53,1.16)	0.334
		No	Ref	0.83(0.68,1.01)	0.87(0.73,1.05)	0.92(0.79,1.07)	0.072
HD							
	Age						
		<65	Ref	0.84(0.73,0.97)	0.86(0.73,1.02)	0.71(0.57,0.87)	0.004
		≥65	Ref	0.95(0.76,1.19)	0.77(0.59,1.01)	0.64(0.43,0.94)	0.075
	Sex						
		Male	Ref	0.81(0.67,0.97)	0.83(0.70,0.98)	0.64(0.51,0.82)	0.001
		Female	Ref	0.86(0.72,1.04)	0.98(0.80,1.21)	0.73(0.54,1.01)	0.163
	Smoking						
		Yes	Ref	0.74(0.63,0.86)	0.80(0.66,0.97)	0.73(0.56,0.96)	0.001
		No	Ref	0.98(0.82,1.18)	0.93(0.76,1.15)	0.74(0.58,0.93)	0.032
	Drinking						
		None	Ref	0.90(0.77,1.06)	0.96(0.80,1.15)	0.71(0.54,0.92)	0.028
		Moderate	Ref	1.30(0.95,1.78)	1.29(0.88,1.90)	1.01(0.67,1.54)	0.306
		Heavy	Ref	0.59(0.41,0.84)	0.66(0.46,0.96)	0.60(0.35,1.01)	0.011
	Physical activity level						
		Mild	Ref	0.94(0.79,1.12)	0.94(0.77,1.16)	0.76(0.57,1.02)	0.189
		Moderate	Ref	0.89(0.70,1.14)	0.81(0.65,1.02)	0.54(0.41,0.72)	<0.001
	BMI						
		<30	Ref	0.87(0.72,1.05)	0.91(0.75,1.09)	0.75(0.58,0.96)	0.064

	≥30	Ref	0.95(0.77,1.16)	1.14(0.92,1.42)	0.81(0.60,1.08)	0.437
Cardiovascular disease						
	Yes	Ref	0.96(0.84,1.10)	0.88(0.75,1.04)	0.75(0.64,0.89)	1.000
	No	Ref	0.85(0.75,0.97)	0.87(0.74,1.03)	0.70(0.57,0.85)	0.001
Folic acid supplement use						
	Yes	Ref	0.72(0.55,0.94)	0.69(0.49,0.95)	0.75(0.57,0.99)	0.052
	No	Ref	0.76(0.66,0.87)	0.83(0.71,0.97)	0.72(0.61,0.85)	<0.001
AL						
Age						
	<65	Ref	0.93(0.80,1.08)	0.96(0.80,1.15)	0.81(0.67,0.99)	0.104
	≥65	Ref	1.15(0.92,1.44)	0.72(0.58,0.91)	0.63(0.48,0.84)	0.006
Sex						
	Male	Ref	0.89(0.73,1.10)	0.84(0.70,1.02)	0.65(0.50,0.84)	0.004
	Female	Ref	0.87(0.73,1.02)	0.96(0.79,1.18)	0.76(0.61,0.94)	0.04
Smoking						
	Yes	Ref	0.94(0.76,1.17)	0.92(0.76,1.11)	0.71(0.55,0.93)	0.038
	No	Ref	1.07(0.89,1.30)	0.96(0.75,1.23)	0.75(0.59,0.95)	0.058
Drinking						
	None	Ref	0.91(0.77,1.06)	0.95(0.81,1.11)	0.68(0.55,0.83)	0.001
	Moderate	Ref	1.21(0.89,1.64)	1.05(0.78,1.43)	0.98(0.70,1.35)	0.645
	Heavy	Ref	0.92(0.65,1.30)	0.66(0.47,0.93)	0.66(0.42,1.03)	0.053
Physical activity level						
	Mild	Ref	0.90(0.77,1.06)	0.95(0.80,1.12)	0.67(0.54,0.84)	0.002
	Moderate	Ref	0.88(0.71,1.09)	0.81(0.65,1.01)	0.66(0.52,0.84)	0.002
BMI						

	<30	Ref	0.97(0.84,1.12)	0.85(0.70,1.04)	0.75(0.63,0.91)	0.008
	≥30	Ref	0.84(0.70,1.01)	0.98(0.80,1.19)	0.74(0.57,0.97)	0.083
Cardiovascular disease						
	Yes	Ref	1.16(0.79,1.70)	1.28(0.86,1.91)	1.22(0.72,2.08)	0.651
	No	Ref	0.96(0.84,1.10)	0.88(0.75,1.04)	0.75(0.64,0.89)	0.003
Folic acid supplement use						
	Yes	Ref	0.78(0.62,0.99)	0.79(0.62,1.00)	0.73(0.55,0.98)	0.101
	No	Ref	0.80(0.68,0.94)	0.84(0.71,1.00)	0.72(0.60,0.85)	0.001

a Ref indicated the reference group.
b Q, quartile.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 12 Association of the intake of dietary folate with biological age indicators stratified by variables of interest.

		Dietary folate (DFE, mcg/d)				
		[b]Q1	Q2	Q3	Q4	P value
		[c]OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	
PA						
Age						
	<65	[a]Ref	0.94(0.81,1.10)	0.91(0.78,1.05)	0.81(0.69,0.95)	0.032
	≥65	Ref	0.86(0.67,1.10)	0.84(0.65,1.08)	0.77(0.58,1.01)	0.166
Sex						
	Male	Ref	0.85(0.71,1.02)	0.83(0.67,1.02)	0.67(0.56,0.81)	<0.001
	Female	Ref	0.94(0.78,1.12)	0.98(0.82,1.16)	0.85(0.72,1.02)	0.218
Smoking						
	Yes	Ref	0.88(0.73,1.06)	0.82(0.69,0.98)	0.71(0.59,0.84)	0.001
	No	Ref	0.98(0.80,1.19)	0.99(0.85,1.15)	0.88(0.73,1.06)	0.492
Drinking						
	None	Ref	0.90(0.78,1.05)	0.95(0.83,1.09)	0.83(0.71,0.96)	0.046
	Moderate	Ref	0.84(0.62,1.14)	0.76(0.58,1.00)	0.82(0.59,1.15)	0.158
	Heavy	Ref	0.86(0.62,1.20)	0.76(0.52,1.12)	0.55(0.37,0.82)	0.010
Physical activity level						
	Mild	Ref	0.91(0.77,1.07)	0.92(0.78,1.09)	0.87(0.74,1.02)	0.243
	Moderate	Ref	1.01(0.81,1.27)	0.91(0.73,1.13)	0.70(0.55,0.90)	0.016
BMI						
	<30	Ref	0.88(0.74,1.04)	0.79(0.67,0.94)	0.66(0.56,0.79)	<0.001
	≥30	Ref	1.07(0.90,1.28)	1.05(0.88,1.25)	1.06(0.89,1.26)	1.000
Cardiovascular disease						

		Yes	Ref	1.32(0.94,1.86)	1.02(0.66,1.57)	1.29(0.86,1.92)	0.316
		No	Ref	0.90(0.78,1.05)	0.87(0.76,1.00)	0.77(0.66,0.90)	0.003
	Folic acid supplement use						
		Yes	Ref	1.10(0.84,1.44)	0.94(0.71,1.24)	0.95(0.72,1.25)	1.000
		No	Ref	0.86(0.74,1.00)	0.83(0.72,0.95)	0.72(0.62,0.83)	<0.001
KDM							
	Age						
		<65	Ref	0.88(0.73,1.06)	0.91(0.74,1.11)	0.83(0.66,1.05)	0.169
		≥65	Ref	1.19(0.84,1.68)	0.90(0.63,1.28)	0.69(0.46,1.04)	0.045
	Sex						
		Male	Ref	0.83(0.65,1.05)	0.65(0.51,0.83)	0.79(0.63,0.98)	<0.001
		Female	Ref	0.87(0.67,1.13)	0.88(0.69,1.12)	0.99(0.82,1.20)	0.525
	Smoking						
		Yes	Ref	0.94(0.75,1.18)	0.85(0.67,1.08)	0.78(0.60,1.01)	0.173
		No	Ref	0.83(0.64,1.08)	0.72(0.55,0.94)	0.97(0.81,1.16)	0.036
	Drinking						
		None	Ref	0.84(0.68,1.03)	0.88(0.72,1.08)	0.91(0.60,1.37)	0.137
		Moderate	Ref	0.91(0.56,1.48)	0.76(0.48,1.20)	0.87(0.53,1.42)	0.285
		Heavy	Ref	0.74(0.39,1.41)	0.96(0.78,1.18)	0.97(0.78,1.19)	0.545
	Physical activity level						
		Mild	Ref	0.96(0.78,1.18)	0.97(0.78,1.19)	0.96(0.77,1.20)	0.760
		Moderate	Ref	0.93(0.70,1.24)	0.84(0.59,1.20)	0.67(0.47,0.96)	0.030
	BMI						
		<30	Ref	0.86(0.70,1.06)	0.87(0.68,1.12)	0.87(0.69,1.10)	0.344
		≥30	Ref	1.01(0.79,1.29)	0.85(0.64,1.14)	0.76(0.56,1.01)	0.039

	Cardiovascular disease						
		Yes	Ref	0.97(0.67,1.39)	0.88(0.59,1.33)	0.87(0.56,1.35)	0.461
		No	Ref	0.88(0.73,1.07)	0.89(0.73,1.09)	0.79(0.63,0.98)	0.051
	Folic acid supplement use						
		Yes	Ref	0.94(0.61,1.46)	1(0.64,1.57)	0.8(0.47,1.35)	0.469
		No	Ref	0.83(0.68,1.01)	0.87(0.73,1.05)	0.92(0.79,1.07)	0.072
HD							
	Age						
		<65	Ref	0.90(0.77,1.05)	0.89(0.75,1.07)	0.87(0.72,1.05)	0.459
		≥65	Ref	0.87(0.70,1.06)	0.84(0.67,1.06)	0.72(0.55,0.94)	0.046
	Sex						
		Male	Ref	0.76(0.65,0.90)	0.80(0.65,0.97)	0.68(0.57,0.81)	<0.001
		Female	Ref	0.86(0.71,1.03)	0.86(0.71,1.05)	0.85(0.68,1.06)	0.304
	Smoking						
		Yes	Ref	0.75(0.61,0.91)	0.73(0.60,0.89)	0.75(0.60,0.95)	0.006
		No	Ref	0.96(0.80,1.17)	1.02(0.83,1.26)	0.90(0.73,1.10)	0.903
	Drinking						
		None	Ref	0.86(0.74,1.01)	0.86(0.73,1.01)	0.81(0.68,0.98)	0.081
		Moderate	Ref	1.36(0.99,1.87)	1.21(0.83,1.76)	1.34(0.92,1.95)	0.164
		Heavy	Ref	0.67(0.46,0.96)	0.88(0.57,1.34)	0.69(0.42,1.13)	0.095
	Physical activity level						
		Mild	Ref	0.86(0.73,1.00)	0.85(0.70,1.02)	0.78(0.62,0.97)	0.078
		Moderate	Ref	0.90(0.72,1.14)	0.88(0.70,1.10)	0.80(0.61,1.05)	0.327
	BMI						
		<30	Ref	0.87(0.71,1.07)	0.87(0.70,1.09)	0.84(0.67,1.05)	0.385

	≥30	Ref	0.79(0.63,0.98)	0.98(0.79,1.21)	0.83(0.67,1.03)	0.092
Cardiovascular disease						
	Yes	Ref	0.86(0.63,1.17)	0.68(0.48,0.96)	0.86(0.59,1.24)	0.088
	No	Ref	0.82(0.71,0.95)	0.89(0.75,1.05)	0.81(0.68,0.97)	0.025
Folic acid supplement use						
	Yes	Ref	0.92(0.69,1.22)	0.93(0.70,1.24)	0.81(0.59,1.11)	0.572
	No	Ref	0.76(0.66,0.87)	0.83(0.71,0.97)	0.72(0.61,0.85)	<0.001
AL						
Age						
	<65	Ref	0.85(0.73,0.99)	0.88(0.74,1.04)	0.80(0.67,0.95)	0.035
	≥65	Ref	0.86(0.68,1.08)	0.92(0.71,1.19)	0.71(0.56,0.90)	0.016
Sex						
	Male	Ref	0.87(0.72,1.05)	0.86(0.71,1.03)	0.69(0.56,0.85)	0.002
	Female	Ref	0.92(0.79,1.08)	1.00(0.84,1.18)	0.81(0.67,0.99)	0.132
Smoking						
	Yes	Ref	0.81(0.67,0.98)	0.88(0.71,1.10)	0.77(0.62,0.96)	0.059
	No	Ref	0.92(0.78,1.09)	0.99(0.81,1.20)	0.79(0.63,0.99)	0.125
Drinking						
	None	Ref	0.85(0.72,0.99)	0.88(0.75,1.02)	0.74(0.63,0.87)	0.001
	Moderate	Ref	1.01(0.75,1.37)	0.88(0.63,1.22)	0.88(0.64,1.21)	1.000
	Heavy	Ref	0.87(0.59,1.27)	1.08(0.74,1.56)	0.64(0.43,0.96)	0.095
Physical activity level						
	Mild	Ref	0.84(0.72,0.99)	0.96(0.80,1.14)	0.73(0.60,0.89)	0.006
	Moderate	Ref	0.93(0.77,1.12)	0.78(0.65,0.94)	0.73(0.59,0.92)	0.023
BMI						

	<30	Ref	0.90(0.76,1.06)	0.92(0.77,1.09)	0.75(0.62,0.91)	0.011
	≥30	Ref	0.81(0.66,0.98)	0.88(0.73,1.07)	0.78(0.64,0.96)	0.061
Cardiovascular disease						
	Yes	Ref	1.02(0.73,1.43)	1.03(0.69,1.54)	1.23(0.85,1.78)	0.796
	No	Ref	0.85(0.75,0.97)	0.87(0.75,1.00)	0.74(0.62,0.88)	0.003
Folic acid supplement use						
	Yes	Ref	0.96(0.73,1.25)	0.83(0.64,1.07)	0.68(0.50,0.93)	0.045
	No	Ref	0.80(0.68,0.94)	0.84(0.71,1.00)	0.72(0.60,0.85)	0.001

a Ref indicated the reference group.
b Q, quartile.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 13 Association of the intake of food natural folate with biological age indicators stratified by variables of interest.

		Food natural folate (DFE, mcg/d)				
		[b]Q1 [c]OR (95%CI)	Q2 OR (95%CI)	Q3 OR (95%CI)	Q4 OR (95%CI)	P value
PA						
Age						
	<65	[a]Ref	0.85(0.73,0.98)	0.73(0.63,0.86)	0.65(0.55,0.75)	<0.001
	≥65	Ref	0.85(0.68,1.05)	0.73(0.53,0.99)	0.63(0.47,0.84)	0.007
Sex						
	Male	Ref	0.66(0.57,0.77)	0.62(0.51,0.75)	0.55(0.45,0.67)	<0.001
	Female	Ref	1.07(0.89,1.30)	1.05(0.86,1.29)	0.82(0.65,1.02)	0.407
Smoking						
	Yes	Ref	0.87(0.73,1.03)	0.70(0.58,0.85)	0.69(0.57,0.84)	0.001
	No	Ref	0.89(0.76,1.04)	0.76(0.62,0.94)	0.63(0.51,0.76)	<0.001
Drinking						
	None	Ref	0.92(0.81,1.06)	0.84(0.72,0.99)	0.69(0.58,0.81)	<0.001
	Moderate	Ref	0.90(0.67,1.21)	0.82(0.57,1.17)	0.91(0.60,1.38)	0.822
	Heavy	Ref	0.68(0.50,0.92)	0.54(0.38,0.76)	0.43(0.31,0.60)	<0.001
Physical activity level						
	Mild	Ref	0.97(0.85,1.11)	0.81(0.69,0.95)	0.73(0.60,0.88)	0.004
	Moderate	Ref	0.82(0.67,1.01)	0.76(0.60,0.97)	0.54(0.42,0.68)	<0.001
BMI						
	<30	Ref	0.77(0.65,0.91)	0.61(0.51,0.73)	0.52(0.43,0.64)	<0.001
	≥30	Ref	1.05(0.90,1.23)	1.09(0.87,1.37)	0.89(0.71,1.12)	0.998

	Cardiovascular disease						
		Yes	Ref	1.03(0.73,1.44)	0.93(0.61,1.41)	0.77(0.48,1.21)	0.756
		No	Ref	0.86(0.74,0.98)	0.72(0.62,0.84)	0.64(0.55,0.75)	<0.001
	Folic acid supplement use						
		Yes	Ref	0.82(0.62,1.09)	0.77(0.58,1.02)	0.64(0.45,0.91)	0.043
		No	Ref	0.90(0.78,1.03)	0.73(0.62,0.85)	0.64(0.56,0.74)	<0.001
KDM							
	Age						
		<65	Ref	0.86(0.72,1.01)	0.74(0.61,0.90)	0.63(0.50,0.79)	<0.001
		≥65	Ref	1.12(0.83,1.50)	1.01(0.72,1.43)	0.60(0.38,0.94)	0.041
	Sex						
		Male	Ref	0.61(0.47,0.79)	0.53(0.39,0.72)	0.92(0.72,1.18)	<0.001
		Female	Ref	0.84(0.65,1.08)	0.75(0.56,1.00)	0.94(0.74,1.19)	0.040
	Smoking						
		Yes	Ref	0.76(0.59,0.98)	0.68(0.51,0.93)	0.88(0.71,1.09)	0.007
		No	Ref	0.73(0.57,0.93)	0.55(0.41,0.75)	0.94(0.77,1.14)	<0.001
	Drinking						
		None	Ref	0.89(0.74,1.08)	0.62(0.48,0.80)	0.78(0.52,1.17)	<0.001
		Moderate	Ref	0.84(0.53,1.33)	0.74(0.42,1.31)	0.66(0.44,0.98)	0.376
		Heavy	Ref	0.51(0.31,0.84)	0.86(0.72,1.02)	0.84(0.68,1.04)	0.010
	Physical activity level						
		Mild	Ref	0.86(0.72,1.02)	0.84(0.68,1.04)	0.60(0.46,0.77)	<0.001
		Moderate	Ref	0.82(0.64,1.06)	0.63(0.47,0.83)	0.54(0.40,0.74)	<0.001
	BMI						
		<30	Ref	0.90(0.71,1.13)	0.89(0.67,1.18)	0.60(0.44,0.81)	0.003

	≥30	Ref	0.77(0.61,0.98)	0.66(0.52,0.85)	0.61(0.47,0.80)	<0.001
Cardiovascular disease						
	Yes	Ref	0.78(0.52,1.18)	0.70(0.42,1.15)	0.60(0.37,0.98)	0.052
	No	Ref	0.92(0.78,1.09)	0.75(0.62,0.92)	0.61(0.49,0.77)	<0.001
Folic acid supplement use						
	Yes	Ref	0.92(0.65,1.31)	0.77(0.50,1.19)	0.65(0.38,1.11)	0.087
	No	Ref	0.60(0.47,0.76)	0.77(0.63,0.95)	0.85(0.72,1.02)	<0.001
HD						
Age						
	<65	Ref	0.96(0.83,1.12)	0.95(0.79,1.14)	0.84(0.70,0.99)	0.123
	≥65	Ref	0.77(0.61,0.96)	0.87(0.65,1.15)	0.71(0.55,0.93)	0.036
Sex						
	Male	Ref	0.98(0.81,1.19)	0.79(0.64,0.96)	0.92(0.75,1.13)	0.060
	Female	Ref	0.90(0.75,1.09)	0.87(0.70,1.08)	0.84(0.66,1.06)	0.407
Smoking						
	Yes	Ref	0.85(0.72,1.01)	0.82(0.67,1.02)	0.78(0.62,0.98)	0.093
	No	Ref	0.92(0.76,1.11)	0.90(0.75,1.07)	0.84(0.70,1.02)	0.213
Drinking						
	None	Ref	0.88(0.75,1.03)	0.91(0.77,1.08)	0.87(0.71,1.05)	0.311
	Moderate	Ref	1.07(0.77,1.48)	1.41(1.00,1.98)	1.18(0.76,1.83)	0.143
	Heavy	Ref	0.67(0.46,0.96)	0.59(0.40,0.88)	0.74(0.50,1.09)	0.028
Physical activity level						
	Mild	Ref	0.90(0.76,1.07)	0.91(0.74,1.11)	0.81(0.66,0.98)	0.096
	Moderate	Ref	0.93(0.78,1.10)	0.91(0.71,1.16)	0.80(0.65,0.98)	0.086
BMI						

	<30	Ref	0.86(0.73,1.02)	0.78(0.64,0.95)	0.73(0.58,0.93)	0.031
	≥30	Ref	1.04(0.87,1.25)	1.25(1.00,1.55)	1.01(0.79,1.28)	0.145
Cardiovascular disease						
	Yes	Ref	0.73(0.53,1.02)	0.62(0.40,0.94)	0.61(0.40,0.95)	0.078
	No	Ref	0.93(0.81,1.05)	0.91(0.78,1.04)	0.84(0.71,0.97)	0.067
Folic acid supplement use						
	Yes	Ref	0.81(0.64,1.03)	0.81(0.62,1.05)	0.78(0.61,1.01)	0.169
	No	Ref	0.95(0.81,1.10)	0.83(0.72,0.97)	0.81(0.67,0.97)	0.057
AL						
Age						
	<65	Ref	0.90(0.78,1.04)	0.83(0.72,0.96)	0.77(0.64,0.93)	0.088
	≥65	Ref	0.98(0.82,1.17)	0.81(0.65,1.01)	0.65(0.50,0.85)	0.006
Sex						
	Male	Ref	0.76(0.65,0.89)	0.71(0.57,0.88)	0.64(0.50,0.80)	0.001
	Female	Ref	1.03(0.84,1.27)	0.99(0.82,1.20)	0.90(0.73,1.11)	0.924
Smoking						
	Yes	Ref	0.94(0.78,1.12)	0.83(0.70,1.00)	0.78(0.62,0.98)	0.106
	No	Ref	0.85(0.73,0.99)	0.88(0.75,1.04)	0.71(0.58,0.88)	0.005
Drinking						
	None	Ref	1.03(0.89,1.18)	0.92(0.77,1.10)	0.79(0.65,0.95)	0.045
	Moderate	Ref	0.84(0.63,1.12)	0.86(0.61,1.21)	0.96(0.66,1.39)	0.676
	Heavy	Ref	0.83(0.60,1.14)	0.71(0.49,1.01)	0.78(0.57,1.06)	0.172
Physical activity level						
	Mild	Ref	0.95(0.82,1.10)	0.92(0.78,1.09)	0.73(0.60,0.90)	0.009
	Moderate	Ref	0.95(0.77,1.16)	0.79(0.62,1.00)	0.75(0.58,0.97)	0.084

BMI						
	<30	Ref	0.93(0.78,1.10)	0.77(0.64,0.92)	0.76(0.63,0.91)	0.010
	≥30	Ref	1.05(0.85,1.29)	1.06(0.87,1.30)	0.93(0.72,1.20)	1.000
Cardiovascular disease						
	Yes	Ref	0.92(0.64,1.32)	0.93(0.63,1.38)	0.88(0.58,1.33)	1.000
	No	Ref	0.94(0.83,1.07)	0.83(0.72,0.95)	0.76(0.65,0.90)	0.005
Folic acid supplement use						
	Yes	Ref	0.70(0.53,0.92)	0.67(0.50,0.92)	0.60(0.43,0.83)	0.008
	No	Ref	0.93(0.82,1.05)	0.88(0.75,1.02)	0.77(0.64,0.94)	0.035

a Ref indicated the reference group.
b Q, quartile.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 14 Association of the intake of food synthetic folic acid with biological age indicators stratified by variables of interest.

		Food synthetic folic acid (DFE, mcg/d)				
		[b]Q1 [c]OR (95%CI)	Q2 OR (95%CI)	Q3 OR (95%CI)	Q4 OR (95%CI)	P value
PA						
Age						
	<65	[a]Ref	0.94(0.80,1.10)	1.11(0.94,1.32)	0.92(0.78,1.08)	0.047
	≥65	Ref	0.99(0.78,1.25)	1.08(0.84,1.39)	0.90(0.70,1.17)	0.461
Sex						
	Male	Ref	0.92(0.77,1.12)	1.14(0.94,1.38)	0.82(0.69,0.98)	<0.001
	Female	Ref	1.08(0.90,1.30)	0.99(0.82,1.19)	1.09(0.91,1.30)	0.519
Smoking						
	Yes	Ref	0.89(0.76,1.04)	1.04(0.87,1.25)	0.82(0.69,0.98)	0.035
	No	Ref	1.11(0.94,1.32)	1.25(1.00,1.56)	1.09(0.91,1.32)	0.289
Drinking						
	None	Ref	1.02(0.88,1.17)	1.20(1.03,1.40)	0.96(0.82,1.11)	0.015
	Moderate	Ref	1.10(0.79,1.51)	1.24(0.90,1.72)	1.06(0.79,1.44)	0.596
	Heavy	Ref	0.92(0.64,1.33)	0.96(0.66,1.39)	0.82(0.58,1.16)	0.673
Physical activity level						
	Mild	Ref	0.90(0.79,1.04)	1.06(0.89,1.25)	0.95(0.81,1.11)	0.204
	Moderate	Ref	1.20(0.95,1.51)	1.18(0.94,1.49)	0.89(0.71,1.10)	0.024
BMI						
	<30	Ref	0.89(0.75,1.05)	1.10(0.88,1.37)	0.79(0.66,0.95)	0.001
	≥30	Ref	1.14(0.95,1.37)	1.14(0.93,1.39)	1.17(0.96,1.42)	0.390

	Cardiovascular disease						
		Yes	Ref	1.43(0.98,2.09)	1.31(0.89,1.93)	1.75(1.21,2.53)	0.032
		No	Ref	0.94(0.83,1.08)	1.09(0.93,1.28)	0.89(0.77,1.02)	0.026
	Folic acid supplement use						
		Yes	Ref	1.23(0.96,1.56)	1.44(1.04,1.98)	1.25(0.97,1.62)	0.177
		No	Ref	0.91(0.80,1.05)	1.02(0.87,1.20)	0.85(0.73,0.99)	0.043
KDM							
	Age						
		<65	Ref	0.97(0.77,1.22)	1.09(0.88,1.35)	1.03(0.83,1.29)	0.535
		≥65	Ref	1.25(0.86,1.81)	1.17(0.82,1.66)	0.83(0.58,1.19)	0.285
	Sex						
		Male	Ref	1.03(0.76,1.39)	0.90(0.69,1.18)	0.94(0.71,1.24)	0.414
		Female	Ref	1.01(0.78,1.31)	1.07(0.85,1.35)	1.11(0.86,1.45)	0.472
	Smoking						
		Yes	Ref	1.1(0.85,1.42)	1.06(0.83,1.35)	0.95(0.73,1.24)	0.715
		No	Ref	1.09(0.84,1.41)	0.97(0.77,1.22)	0.98(0.81,1.19)	0.950
	Drinking						
		None	Ref	1.06(0.86,1.32)	1.01(0.82,1.24)	1.28(0.81,2.02)	0.749
		Moderate	Ref	1.36(0.82,2.26)	1.19(0.74,1.93)	1.02(0.66,1.59)	0.453
		Heavy	Ref	0.90(0.54,1.50)	0.99(0.79,1.25)	1.15(0.92,1.44)	0.801
	Physical activity level						
		Mild	Ref	0.99(0.79,1.25)	1.15(0.92,1.44)	1.07(0.86,1.34)	0.331
		Moderate	Ref	1.06(0.78,1.45)	1.23(0.93,1.63)	0.84(0.61,1.16)	0.477
	BMI						
		<30	Ref	0.93(0.71,1.21)	1.03(0.80,1.32)	1.07(0.84,1.36)	0.422

	≥30	Ref	1.11(0.83,1.48)	1.17(0.88,1.54)	0.92(0.69,1.23)	0.691
Cardiovascular disease						
	Yes	Ref	0.93(0.62,1.38)	1.33(0.93,1.89)	1.13(0.75,1.7)	0.284
	No	Ref	1.00(0.81,1.23)	1.07(0.87,1.33)	1.00(0.81,1.23)	0.877
Folic acid supplement use						
	Yes	Ref	1.36(0.84,2.19)	1.31(0.79,2.16)	1.22(0.73,2.06)	0.493
	No	Ref	1.00(0.82,1.22)	1.08(0.89,1.32)	0.94(0.78,1.14)	0.680
HD						
Age						
	<65	Ref	0.97(0.82,1.14)	0.85(0.72,0.99)	0.92(0.78,1.10)	0.169
	≥65	Ref	0.86(0.69,1.07)	1.00(0.79,1.27)	0.76(0.59,0.99)	0.111
Sex						
	Male	Ref	0.81(0.67,0.98)	0.77(0.64,0.93)	0.70(0.59,0.83)	0.002
	Female	Ref	1.08(0.88,1.32)	0.91(0.76,1.09)	1.04(0.85,1.28)	0.356
Smoking						
	Yes	Ref	0.97(0.81,1.15)	0.78(0.65,0.94)	0.88(0.71,1.09)	0.033
	No	Ref	1.05(0.86,1.28)	1.00(0.82,1.21)	0.92(0.76,1.12)	0.628
Drinking						
	None	Ref	1.01(0.86,1.18)	0.91(0.78,1.05)	0.86(0.73,1.03)	0.226
	Moderate	Ref	1.12(0.80,1.58)	1.19(0.89,1.59)	1.20(0.88,1.62)	0.612
	Heavy	Ref	1.05(0.74,1.51)	0.93(0.63,1.38)	0.94(0.61,1.43)	0.875
Physical activity level						
	Mild	Ref	1.05(0.90,1.23)	0.92(0.77,1.09)	0.90(0.74,1.10)	0.308
	Moderate	Ref	0.91(0.73,1.13)	0.90(0.73,1.11)	0.80(0.63,1.02)	0.318
BMI						

		<30	Ref	0.98(0.82,1.17)	0.97(0.79,1.19)	0.92(0.75,1.13)	0.870
		≥30	Ref	1.05(0.85,1.30)	0.87(0.68,1.11)	0.98(0.79,1.21)	0.267
	Cardiovascular disease						
		Yes	Ref	0.90(0.65,1.23)	0.92(0.67,1.27)	1.07(0.75,1.54)	0.644
		No	Ref	0.97(0.83,1.13)	0.87(0.74,1.03)	0.88(0.75,1.04)	0.250
	Folic acid supplement use						
		Yes	Ref	0.99(0.78,1.26)	0.82(0.62,1.08)	0.95(0.71,1.26)	0.457
		No	Ref	1.00(0.86,1.17)	0.90(0.78,1.05)	0.83(0.69,0.99)	0.048
AL							
	Age						
		<65	Ref	0.89(0.76,1.03)	0.91(0.79,1.05)	0.87(0.75,1.01)	0.268
		≥65	Ref	0.98(0.78,1.21)	1.08(0.85,1.36)	0.81(0.64,1.03)	0.042
	Sex						
		Male	Ref	0.93(0.77,1.12)	0.98(0.81,1.17)	0.78(0.66,0.93)	0.031
		Female	Ref	0.99(0.83,1.19)	0.97(0.81,1.16)	0.88(0.72,1.06)	0.460
	Smoking						
		Yes	Ref	0.92(0.77,1.11)	0.95(0.79,1.14)	0.86(0.71,1.03)	0.404
		No	Ref	1.01(0.86,1.19)	1.00(0.82,1.24)	0.86(0.70,1.05)	0.207
	Drinking						
		None	Ref	1.00(0.85,1.18)	1.02(0.88,1.18)	0.85(0.73,0.99)	0.075
		Moderate	Ref	0.84(0.65,1.09)	0.87(0.67,1.13)	0.90(0.70,1.15)	0.532
		Heavy	Ref	0.84(0.58,1.22)	0.79(0.54,1.15)	0.74(0.52,1.06)	0.437
	Physical activity level						
		Mild	Ref	1.00(0.87,1.16)	1.01(0.85,1.20)	0.84(0.70,1.02)	0.152
		Moderate	Ref	1.01(0.81,1.25)	0.94(0.78,1.15)	0.81(0.66,1.01)	0.162

BMI						
	<30	Ref	0.94(0.79,1.11)	0.95(0.80,1.11)	0.81(0.68,0.97)	0.107
	≥30	Ref	1.01(0.83,1.24)	0.89(0.73,1.08)	0.91(0.73,1.12)	0.566
Cardiovascular disease						
	Yes	Ref	1.02(0.74,1.41)	1.17(0.84,1.63)	1.58(1.09,2.27)	0.049
	No	Ref	0.91(0.80,1.03)	0.92(0.80,1.06)	0.82(0.71,0.95)	0.052
Folic acid supplement use						
	Yes	Ref	0.87(0.69,1.10)	0.85(0.66,1.08)	0.77(0.58,1.02)	0.352
	No	Ref	0.90(0.77,1.04)	0.96(0.83,1.11)	0.79(0.67,0.93)	0.041

a Ref indicated the reference group.
b Q, quartile.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 15 Association of dietary folate co-exposure patterns with biological age indicators stratified by variables of interest.

			PA	P value	KDM	P value	HD	P value	AL	P value
Age										
	<65	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.87(0.76,1.00)	0.056	0.56(0.44,0.71)	<0.001	0.97(0.83,1.14)	0.714	0.95(0.85,1.07)	0.380
		Cluster 3	0.73(0.55,0.97)	0.032	0.98(0.83,1.15)	0.810	0.95(0.72,1.26)	0.736	1.00(0.75,1.33)	0.975
		Cluster 4	0.88(0.61,1.28)	0.504	0.76(0.49,1.16)	0.198	0.96(0.67,1.36)	0.794	0.88(0.63,1.24)	0.467
	≥65	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.80(0.64,1.00)	0.045	0.64(0.43,0.95)	0.028	0.79(0.62,1.00)	0.048	0.70(0.59,0.83)	<0.001
		Cluster 3	1.41(0.89,2.22)	0.142	0.67(0.47,0.95)	0.024	0.99(0.60,1.61)	0.952	0.87(0.59,1.31)	0.505
		Cluster 4	1.45(0.74,2.84)	0.279	1.03(0.49,2.17)	0.933	0.85(0.41,1.74)	0.65	0.86(0.49,1.53)	0.609
Sex										
	Male	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.81(0.69,0.94)	0.005	0.49(0.36,0.66)	<0.001	0.82(0.72,0.95)	0.008	0.82(0.69,0.96)	0.017
		Cluster 3	0.85(0.63,1.14)	0.278	0.85(0.7,1.03)	0.092	0.80(0.57,1.12)	0.196	0.86(0.56,1.32)	0.481
		Cluster 4	0.77(0.48,1.24)	0.274	0.49(0.29,0.83)	0.008	0.92(0.53,1.60)	0.759	0.78(0.42,1.44)	0.416
	Female	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.98(0.83,1.16)	0.793	0.64(0.48,0.84)	0.002	0.94(0.74,1.19)	0.584	0.95(0.78,1.16)	0.609
		Cluster 3	0.86(0.58,1.27)	0.444	1.14(0.91,1.43)	0.254	0.88(0.60,1.29)	0.511	0.80(0.60,1.08)	0.140
		Cluster 4	1.25(0.76,2.06)	0.383	1.07(0.66,1.72)	0.795	0.75(0.48,1.17)	0.199	0.69(0.43,1.12)	0.134
Smoking										
	Yes	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.85(0.72,1.01)	0.057	0.56(0.42,0.74)	<0.001	1.01(0.83,1.23)	0.901	0.86(0.72,1.01)	0.072
		Cluster 3	1.00(0.72,1.38)	0.999	0.96(0.78,1.18)	0.670	1.13(0.82,1.56)	0.446	1.26(0.84,1.89)	0.255
		Cluster 4	1.25(0.81,1.91)	0.307	0.88(0.48,1.60)	0.666	0.93(0.52,1.64)	0.789	0.96(0.50,1.82)	0.895
	No	Cluster 1	Ref		Ref		Ref		Ref	

		Cluster 2	0.89(0.74,1.08)	0.237	0.58(0.45,0.76)	<0.001	0.82(0.68,0.98)	0.031	0.87(0.74,1.02)	0.081
		Cluster 3	0.73(0.50,1.08)	0.116	0.93(0.77,1.14)	0.482	0.81(0.59,1.11)	0.183	0.71(0.50,1.00)	0.047
		Cluster 4	0.82(0.52,1.31)	0.405	0.77(0.48,1.23)	0.274	0.82(0.53,1.26)	0.356	0.79(0.51,1.21)	0.277
Drinking										
	None	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.87(0.75,1.00)	0.042	0.57(0.46,0.69)	<0.001	0.83(0.71,0.97)	0.019	0.81(0.70,0.94)	0.005
		Cluster 3	0.95(0.72,1.26)	0.721	0.97(0.82,1.15)	0.737	0.85(0.64,1.14)	0.271	0.83(0.62,1.13)	0.235
		Cluster 4	1.05(0.69,1.59)	0.828	0.90(0.57,1.40)	0.624	0.98(0.64,1.52)	0.943	0.88(0.57,1.36)	0.571
	Moderate	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	1.04(0.79,1.36)	0.796	0.51(0.30,0.86)	0.012	1.16(0.85,1.59)	0.335	1.00(0.79,1.28)	0.975
		Cluster 3	0.56(0.30,1.04)	0.065	1.09(0.77,1.56)	0.622	0.81(0.51,1.29)	0.373	0.66(0.36,1.18)	0.156
		Cluster 4	0.68(0.36,1.27)	0.223	0.58(0.23,1.45)	0.241	0.77(0.34,1.74)	0.523	0.75(0.37,1.53)	0.430
	Heavy	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.69(0.50,0.94)	0.021	0.72(0.43,1.21)	0.211	0.89(0.63,1.25)	0.485	0.68(0.50,0.94)	0.021
		Cluster 3	0.97(0.55,1.71)	0.921	0.81(0.53,1.25)	0.336	1.10(0.65,1.88)	0.724	1.67(0.96,2.93)	0.071
		Cluster 4	1.29(0.63,2.62)	0.480	0.64(0.23,1.73)	0.372	0.51(0.22,1.18)	0.112	1.02(0.47,2.18)	0.969
Physical activity level										
	Mild	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.96(0.82,1.12)	0.605	0.60(0.47,0.77)	<0.001	0.92(0.76,1.12)	0.416	0.86(0.72,1.01)	0.070
		Cluster 3	0.98(0.73,1.33)	0.909	1.01(0.85,1.20)	0.920	0.95(0.70,1.28)	0.718	0.86(0.61,1.20)	0.357
		Cluster 4	0.65(0.40,1.03)	0.068	0.70(0.42,1.15)	0.157	0.99(0.65,1.50)	0.945	0.94(0.58,1.51)	0.786
	Moderate	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.74(0.61,0.91)	0.005	0.52(0.38,0.72)	<0.001	0.83(0.68,1.01)	0.066	0.83(0.70,0.99)	0.035
		Cluster 3	0.66(0.43,1.00)	0.050	0.87(0.66,1.14)	0.294	0.63(0.45,0.88)	0.008	1.01(0.68,1.51)	0.950
		Cluster 4	1.60(0.99,2.57)	0.054	0.97(0.55,1.73)	0.924	0.65(0.38,1.11)	0.109	0.91(0.54,1.54)	0.726

BMI										
	<30	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.75(0.64,0.88)	<0.001	0.54(0.41,0.71)	<0.001	0.94(0.79,1.11)	0.445	0.84(0.72,0.98)	0.030
		Cluster 3	1.07(0.79,1.45)	0.672	1.07(0.89,1.29)	0.468	1.01(0.76,1.35)	0.929	1.10(0.82,1.49)	0.512
		Cluster 4	1.13(0.73,1.76)	0.585	1.03(0.66,1.61)	0.895	0.99(0.66,1.49)	0.967	0.90(0.60,1.34)	0.588
	≥30	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	1.07(0.88,1.30)	0.483	0.63(0.49,0.82)	0.001	0.92(0.74,1.16)	0.485	0.97(0.82,1.16)	0.734
		Cluster 3	0.67(0.44,1.02)	0.063	0.83(0.66,1.04)	0.105	0.80(0.55,1.15)	0.228	0.89(0.59,1.35)	0.584
		Cluster 4	0.84(0.49,1.44)	0.524	0.63(0.32,1.24)	0.178	0.98(0.63,1.52)	0.929	0.83(0.48,1.44)	0.496
Cardiovascular disease										
	Yes	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	1.10(0.79,1.53)	0.561	0.65(0.42,1.02)	0.061	1.33(0.96,1.86)	0.089	1.44(1.03,2.01)	0.034
		Cluster 3	0.74(0.34,1.63)	0.451	1.08(0.73,1.59)	0.717	1.05(0.57,1.93)	0.868	0.92(0.43,1.95)	0.823
		Cluster 4	1.58(0.69,3.59)	0.274	0.65(0.29,1.49)	0.308	1.50(0.62,3.65)	0.363	1.14(0.44,2.99)	0.786
	No	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.85(0.75,0.97)	0.018	0.57(0.45,0.71)	<0.001	0.88(0.76,1.01)	0.065	0.86(0.77,0.97)	0.011
		Cluster 3	0.86(0.67,1.11)	0.244	0.93(0.80,1.09)	0.384	0.92(0.70,1.22)	0.550	0.89(0.69,1.16)	0.388
		Cluster 4	0.94(0.65,1.37)	0.758	0.85(0.56,1.30)	0.450	0.91(0.64,1.29)	0.588	0.77(0.53,1.12)	0.170
Folic acid supplement use										
	Yes	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.97(0.66,1.41)	0.864	0.76(0.50,1.16)	0.200	0.80(0.48,1.30)	0.357	0.68(0.47,0.98)	0.039
		Cluster 3	0.87(0.66,1.16)	0.340	0.90(0.53,1.55)	0.707	0.90(0.65,1.24)	0.508	0.88(0.68,1.12)	0.285
		Cluster 4	1.03(0.71,1.48)	0.882	1.09(0.66,1.80)	0.727	0.94(0.63,1.40)	0.768	0.82(0.58,1.16)	0.258
	No	Cluster 1	Ref		Ref		Ref		Ref	
		Cluster 2	0.86(0.76,0.97)	0.011	1.94(1.70,2.21)	<0.001	0.86(0.75,0.98)	0.028	0.83(0.73,0.95)	0.007

Cluster 3	--	--	--	--	--	--	--	--
Cluster 4	2.28(0.31,16.78)	0.415	0.96(0.82,1.11)	0.569	0.93(0.20,4.37)	0.927	0.60(0.09,4.03)	0.593

a Ref indicated the reference group.
b Q, quartile.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 16 The association of the intake of folate from diverse sources with biological aging indicators after excluding participants with extreme values (> 99% and/or < 1%) of the Total folate.

	PA		KDM		HD		AL	
	[b]Case/N	OR (95%CI)	Case/N	OR (95%CI)	Case/N	OR (95%CI)	Case/N	OR (95%CI)
Total folate (DFE, mcg/d)								
[c]Q1(≤350.00)	2113/4633	Ref	889/4633	Ref	2650/4633	Ref	1723/4633	Ref
Q2(350.01 - <521.00)	2035/4624	1.02(0.90,1.16)	778/4624	0.97(0.83,1.12)	2324/4624	0.87(0.77,0.98)	1520/4624	0.98(0.85,1.12)
Q3(521.01 - <844.00)	1955/4627	0.90(0.79,1.02)	703/4627	0.94(0.78,1.12)	2173/4627	0.86(0.74,1.01)	1378/4627	0.91(0.78,1.06)
Q4(≥844.01)	1747/4627	0.75(0.64,0.88)	521/4627	0.65(0.54,0.77)	2108/4627	0.68(0.55,0.83)	1357/4627	0.69(0.58,0.82)
P trend		<0.001		0.001		0.001		<0.001
Dietary folate (DFE, mcg/d)								
Q1(<319.50)	2144/4643	Ref	842/4643	Ref	2587/4643	Ref	1706/4643	Ref
Q2(319.51 - <445.00)	2017/4654	0.92(0.81,1.06)	751/4654	0.91(0.76,1.08)	2433/4654	0.83(0.72,0.95)	1591/4654	0.83(0.73,0.95)
Q3(445.01 - <623.00)	1916/4620	0.91(0.80,1.03)	670/4620	0.90(0.74,1.09)	2253/4620	0.87(0.75,1.01)	1459/4620	0.89(0.77,1.04)
Q4(≥623.01)	1773/4594	0.79(0.67,0.94)	628/4594	0.83(0.68,0.98)	1982/4594	0.79(0.67,0.94)	1222/4594	0.74(0.64,0.86)
P trend		0.001		0.048		0.021		0.002
Food natural folate (DFE, mcg/d)								
Q1(<136.50)	1931/4651	Ref	881/4651	Ref	2506/4651	Ref	1631/4651	Ref
Q2(136.51 - <189.00)	1960/4628	0.87(0.77,0.99)	782/4628	0.91(0.78,1.07)	2397/4628	0.87(0.77,0.99)	1511/4628	0.91(0.81,1.03)
Q3(189.01- <259.00)	2051/4620	0.74(0.64,0.86)	660/4620	0.77(0.64,0.93)	2272/4620	0.85(0.74,0.98)	1503/4620	0.88(0.76,1.02)
Q4(≥259.01)	1908/4612	0.65(0.56,0.75)	568/4612	0.63(0.51,0.77)	2080/4612	0.76(0.65,0.88)	1333/4612	0.76(0.63,0.91)
P trend		<0.001		<0.001		<0.001		0.003
Food synthetic folic acid (DFE, mcg/d)								

Q1(<82.50)	2043/4655	Ref	751/4655	Ref	2581/4655	Ref	1674/4655	Ref
Q2(82.51- <138.50)	2054/4613	0.98(0.86,1.11)	713/4613	1.04(0.85,1.27)	2350/4613	1.00(0.87,1.15)	1503/4613	0.94(0.83,1.08)
Q3(138.51 - <224.00)	1986/4617	1.14(0.98,1.33)	779/4617	1.17(0.95,1.44)	2170/4617	0.90(0.78,1.04)	1412/4617	0.99(0.86,1.14)
Q4(≥224.01)	1767/4626	0.94(0.82,1.08)	648/4626	1.05(0.87,1.28)	2154/4626	0.90(0.77,1.06)	1389/4626	0.83(0.73,0.96)
P trend		0.802		0.403		0.111		0.028

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as odds risk and 95% confidence intervals.
e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 17 The association of dietary folate co-exposure patterns with biological age indicators after excluding participants with extreme values (> 99% and/or < 1%) of the intake of total folate.

			Model 1		Model 2		Model 3		Model 4	
		[b]Case/N	[c]OR (95%CI)	P value	OR (95%CI)	P value	OR (95%CI)	P value	OR (95%CI)	P value
PA	Cluster 1	5343/12088	[a]Ref		Ref		Ref		Ref	
	Cluster 2	1343/3282	0.75(0.68,0.84)	<0.001	0.79(0.71,0.88)	<0.001	0.81(0.72,0.90)	<0.001	0.87(0.77,0.98)	0.021
	Cluster 3	1025/2765	0.67(0.59,0.76)	<0.001	0.79(0.69,0.90)	<0.001	0.95(0.77,1.18)	0.638	0.83(0.66,1.05)	0.115
	Cluster 4	139/376	0.67(0.49,0.92)	0.015	0.81(0.59,1.09)	0.162	0.99(0.69,1.41)	0.936	0.84(0.57,1.23)	0.360
KDM	Cluster 1	2091/12088	Ref		Ref		Ref		Ref	
	Cluster 2	469/3282	0.54(0.45,0.65)	<0.001	0.60(0.50,0.71)	<0.001	0.62(0.52,0.75)	<0.001	0.58(0.47,0.7)	<0.001
	Cluster 3	282/2765	0.80(0.70,0.92)	0.002	0.84(0.73,0.97)	0.020	0.87(0.75,1.00)	0.049	0.95(0.83,1.10)	0.483
	Cluster 4	47/376	0.72(0.50,1.04)	0.076	0.80(0.55,1.15)	0.223	0.86(0.60,1.26)	0.440	0.82(0.55,1.22)	0.326
HD	Cluster 1	6319/12088	Ref		Ref		Ref		Ref	
	Cluster 2	1400/3282	0.76(0.69,0.85)	<0.001	0.79(0.71,0.88)	<0.001	0.81(0.73,0.89)	<0.001	0.85(0.75,0.97)	0.016
	Cluster 3	1357/2765	0.80(0.69,0.91)	0.002	0.91(0.79,1.04)	0.158	1.03(0.81,1.32)	0.791	0.81(0.62,1.06)	0.121
	Cluster 4	179/376	0.79(0.60,1.04)	0.087	0.91(0.70,1.19)	0.485	1.04(0.76,1.43)	0.805	0.80(0.55,1.15)	0.222
AL	Cluster 1	4089/12088	Ref		Ref		Ref		Ref	
	Cluster 2	885/3282	0.73(0.65,0.83)	<0.001	0.78(0.69,0.87)	<0.001	0.77(0.68,0.87)	<0.001	0.81(0.72,0.93)	0.002
	Cluster 3	887/2765	0.80(0.71,0.91)	0.001	0.91(0.80,1.05)	0.192	1.10(0.86,1.41)	0.451	0.93(0.71,1.22)	0.592
	Cluster 4	117/376	0.79(0.57,1.09)	0.150	0.92(0.67,1.26)	0.583	1.11(0.75,1.63)	0.593	0.92(0.59,1.45)	0.724

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 18 The association of the intake of folate from diverse sources with biological age indicators after further adjusting the indices of liver and kidney function.

	PA		KDM		HD		AL	
	[b]Case/N	[d]OR (95%CI)	Case/N	OR (95%CI)	Case/N	OR (95%CI)	Case/N	OR (95%CI)
Total folate (DFE, mcg/d)								
[b]Q1(≤347.00)	2172/4728	[a]Ref	930/4728	Ref	2708/4728	Ref	1774/4728	Ref
Q2(347.01 - <521.01)	2071/4720	1.00(0.88,1.13)	789/4720	0.64(0.54,0.76)	2369/4720	0.86(0.76,0.97)	1546/4720	0.94(0.82,1.08)
Q3(521.01 - <853.00)	1994/4727	0.89(0.78,1.02)	715/4727	0.90(0.76,1.07)	2213/4727	0.85(0.73,0.99)	1404/4727	0.89(0.76,1.03)
Q4(≥853.01)	1784/4714	0.76(0.66,0.89)	538/4714	0.93(0.80,1.07)	2154/4714	0.69(0.56,0.84)	1397/4714	0.69(0.58,0.83)
P trend		0.004		<0.001		0.022		0.003
Dietary folate (DFE, mcg/d)								
Q1(<316.00)	1977/4744	Ref	777/4744	Ref	2551/4744	Ref	1661/4744	Ref
Q2(316.51 - <444.00)	1998/4703	0.95(0.83,1.09)	734/4703	0.81(0.66,0.99)	2442/4703	0.84(0.73,0.96)	1546/4703	0.85(0.74,0.97)
Q3(444.01 - <624.50)	2104/4738	0.91(0.80,1.04)	795/4738	0.88(0.73,1.07)	2334/4738	0.87(0.75,1.02)	1542/4738	0.91(0.78,1.06)
Q4(≥624.51)	1942/4704	0.83(0.72,0.95)	666/4704	0.90(0.75,0.98)	2117/4704	0.80(0.68,0.94)	1354/4704	0.75(0.64,0.88)
P trend		0.001		0.044		0.002		<0.001
Food natural folate (DFE, mcg/d)								
Q1(<135.00)	2084/4732	Ref	845/4732	Ref	2625/4732	Ref	1712/4732	Ref
Q2(135.01 - <188.00)	2108/4727	0.85(0.75,0.98)	833/4727	0.62(0.50,0.77)	2409/4727	0.90(0.78,1.03)	1542/4727	0.87(0.77,1.00)
Q3(188.01- <258.50)	2018/4708	0.73(0.62,0.84)	738/4708	0.75(0.62,0.90)	2210/4708	0.86(0.75,0.99)	1437/4708	0.86(0.75,1.00)
Q4(≥258.51)	1811/4722	0.66(0.57,0.77)	556/4722	0.91(0.78,1.06)	2200/4722	0.78(0.68,0.91)	1412/4722	0.75(0.62,0.90)
P trend		<0.001		<0.001		<0.001		0.004
Food synthetic folic acid (DFE, mcg/d)								

Q1(<81.00)	2097/4730	Ref	881/4730	Ref	2667/4730	Ref	1768/4730	Ref
Q2(81.01- <137.50)	2029/4722	0.99(0.88,1.12)	766/4722	1.02(0.85,1.25)	2413/4722	0.99(0.87,1.14)	1545/4722	0.96(0.83,1.10)
Q3(137.51 - <224.50)	1974/4719	1.16(0.99,1.35)	685/4719	1.13(0.93,1.38)	2303/4719	0.90(0.78,1.04)	1509/4719	1.01(0.88,1.16)
Q4(≥224.51)	1921/4718	0.96(0.84,1.10)	640/4718	1.03(0.83,1.25)	2061/4718	0.90(0.77,1.05)	1281/4718	0.84(0.73,0.97)
P trend		0.989		0.583		0.095		0.049

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Q, quartile.
d Data were listed as odds risk and 95% confidence intervals.
e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, diet quality, ALT, AST, and eGRP.

Supplementary Table 19 The association of dietary folate co-exposure patterns with biological age indicators after further adjusting the indices of liver and kidney function.

	Dietary folate co-exposure patterns			
		[b]Case/N	[c]OR (95%CI)	P value
PA	Cluster 1	5438/12279	[a]Ref	
	Cluster 2	1344/3285	0.88(0.78,0.99)	0.039
	Cluster 3	1025/2765	0.88(0.69,1.11)	0.263
	Cluster 4	214/560	1.02(0.73,1.44)	0.895
KDM	Cluster 1	2143/12279	Ref	
	Cluster 2	470/3285	0.58(0.48,0.70)	<0.001
	Cluster 3	282/2765	0.83(0.56,1.24)	0.353
	Cluster 4	77/560	0.95(0.83,1.10)	0.496
HD	Cluster 1	6421/12279	Ref	
	Cluster 2	1400/3285	0.86(0.75,0.98)	0.020
	Cluster 3	1357/2765	0.82(0.63,1.06)	0.130
	Cluster 4	266/560	0.81(0.58,1.12)	0.192
AL	Cluster 1	4166/12279	Ref	
	Cluster 2	885/3285	0.82(0.72,0.94)	0.004
	Cluster 3	887/2765	0.93(0.70,1.24)	0.626
	Cluster 4	165/560	0.88(0.60,1.30)	0.520

a Ref indicated the reference group.
b Case/N, the number of case subjects/total.
c Data were listed as odds risk and 95% confidence intervals.
d Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.

Supplementary Table 20 The Association of the intake of total folate with biological age indicators after further dividing the intake of total folate into group according to the Dietary Guidelines for Americans 2020-2025.

			Total folate (DFE, mcg/d)			
			Insufficient group (<400)	Normal group (400-1000)	Over-supplementary group (>1000)	P trend
PA						
	[b]Case/N		2877/6270	4449/10770	695/1849	
	[d]OR(95%CI)	Model 1	[a]Ref	0.73(0.67,0.79)	0.59(0.50,0.70)	<0.001
		Model 2	Ref	0.80(0.74,0.87)	0.72(0.61,0.85)	<0.001
		Model 3	Ref	0.85(0.76,0.94)	0.81(0.68,0.98)	0.002
		Model 4	Ref	0.88(0.79,0.98)	0.85(0.69,1.05)	0.054
KDM						
	Case/N		1202/6270	1564/10770	206/1849	
	OR (95%CI)	Model 1	Ref	0.74(0.65,0.84)	0.49(0.40,0.61)	<0.001
		Model 2	Ref	0.81(0.71,0.92)	0.57(0.46,0.71)	<0.001
		Model 3	Ref	0.83(0.72,0.95)	0.59(0.47,0.75)	<0.001
		Model 4	Ref	0.85(0.74,0.99)	0.58(0.45,0.75)	<0.001
HD						
	Case/N		3495/6270	5106/10770	843/1849	
	OR (95%CI)	Model 1	Ref	0.79(0.72,0.87)	0.66(0.56,0.78)	<0.001
		Model 2	Ref	0.85(0.77,0.93)	0.76(0.64,0.90)	<0.001
		Model 3	Ref	0.86(0.78,0.96)	0.76(0.63,0.91)	0.001
		Model 4	Ref	0.88(0.79,0.99)	0.73(0.59,0.91)	0.004
AL						
	Case/N		2274/6270	3289/10070	540/1849	

OR (95%CI)	Model 1	Ref	0.81(0.73,0.91)	0.66(0.55,0.80)	<0.001
	Model 2	Ref	0.89(0.80,0.97)	0.78(0.64,0.95)	0.006
	Model 3	Ref	0.89(0.79,0.97)	0.78(0.63,0.97)	0.021
	Model 4	Ref	0.93(0.82,0.99)	0.80(0.64,1.05)	0.058

a Ref indicated the reference group.

b Case/N, the number of case subjects/total.

c Q, quintile.

d Data were listed as odds risk and 95% confidence intervals.

e Adjustments included age, sex, race/ethnicity, PIR, education level, physical activity level, drinking, smoking, BMI, disease history of diabetes, disease history of hypertension, disease history of dyslipidemia, disease history of cardiovascular disease, energy, vitamin B12, and diet quality.