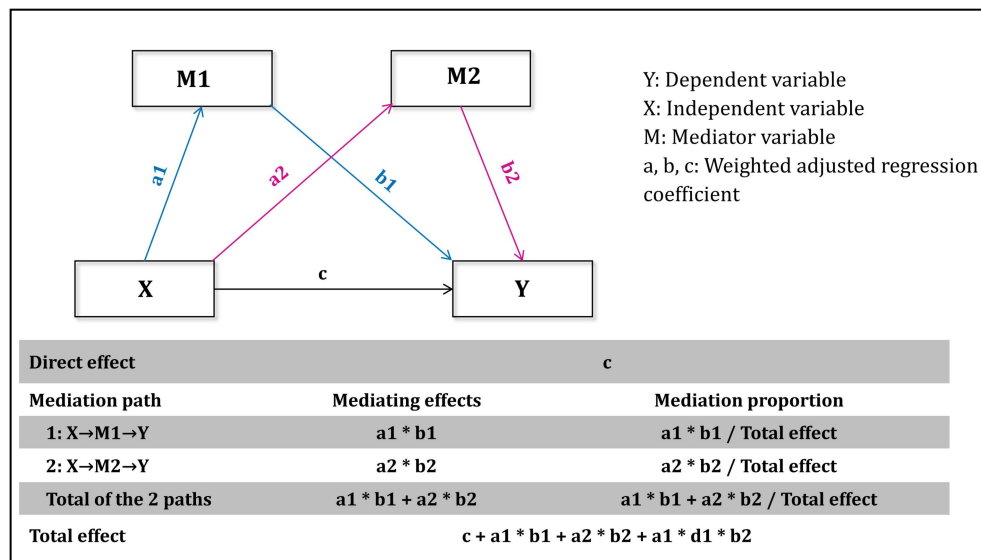


1. Detailed conceptual diagrams of the two-mediation analysis



2. Supplementary sensitivity analyses for the weighted-adjusted linear regressions [†]:Standardized z-score; KDM, Klemmera-Doubal Method ; MDS, Mediterranean diet score; DASHI, dietary approaches to stop hypertension index; HEI2020, healthy eating index 2020

Dietary quality scores	KDM biological age acceleration [†] OR (95%CI)	Phenotypic age acceleration [†] OR (95%CI)
MDS		
Continuous	-0.07 (-0.08, -0.05)	-0.08 (-0.09, -0.07)
Categories		
Tertiles 1	1.0	1.0
Tertiles 2	-0.09 (-0.12, -0.07)	-0.10 (-0.12, -0.08)
Tertiles 3	-0.16 (-0.19, -0.13)	-0.18 (-0.21, -0.15)
P for trend	< 0.001	< 0.001
DASHI		
Continuous	-0.06 (-0.07, -0.05)	-0.06 (-0.08, -0.05)
Categories		
Tertiles 1	1.0	1.0
Tertiles 2	-0.06 (-0.09, -0.03)	-0.06 (-0.08, -0.03)
Tertiles 3	-0.14 (-0.17, -0.11)	-0.16 (-0.19, -0.12)
P for trend	< 0.001	< 0.001
HEI2020		
Continuous	-0.006 (-0.007, -0.005)	-0.010 (-0.011, -0.009)
Categories		
Tertiles 1	1.0	1.0
Tertiles 2	-0.05 (-0.08, -0.02)	-0.13 (-0.15, -0.09)
Tertiles 3	-0.15 (-0.18, -0.12)	-0.26 (-0.29, -0.23)
P for trend	< 0.001	< 0.001