

SUPPLEMENTAL MATERIAL

Table S1. Percentage of participants missing data on study covariates (n = 3,478).

	n	%
Variable		
Age at baseline	2	0.1
Sex	0	0.0
Race and ethnicity	0	0.0
Annual family income	733	21.1
Parent education	424	12.2
Parent marital status	411	11.8
Parent obesity	451	13.0
Parent diabetes	474	13.6
Body mass index	824	23.7
Negative affect	3	0.1
Psychological assets	14	0.4

Table S2. Φ coefficients for individual psychological assets.

	1	2	3	4	5
1. Happiness	--				
2. Optimism	0.37	--			
3. Self-Esteem	0.27	0.25	--		
4. Belongingness	0.23	0.17	0.54	--	
5. Feeling Loved	0.27	0.21	0.57	0.58	--

Table S3. Prevalence of psychological asset levels by study covariates.*

	n	0-1 Assets	2-3 Assets	4-5 Assets
		n (%)	n (%)	n (%)
Total Sample	3,478	1,852 (54.5)	1,013 (29.2)	599 (16.3)
Age at baseline				
11-15 Years	1,666	841 (51.1)	510 (32.0)	310 (16.9)
16-21 Years	1,810	1,011 (57.9)	502 (26.5)	288 (15.6)
Sex				
Female	2,103	1,156 (56.2)	591 (28.1)	347 (15.8)
Male	1,375	696 (52.8)	422 (30.4)	252 (16.8)
Race and ethnicity				
White	2,183	1,182 (55.6)	604 (28.1)	391 (16.3)
Black	597	248 (43.5)	224 (36.1)	123 (20.3)
Latinx	430	253 (55.6)	120 (31.1)	53 (13.3)
Other	268	169 (66.8)	65 (20.6)	32 (12.5)
Annual family income				
≤\$24,999	641	332 (50.5)	212 (34.9)	93 (14.6)
\$25,000-\$49,999	956	539 (59.9)	256 (24.7)	160 (15.5)
\$50,000-\$74,999	689	371 (55.2)	184 (26.5)	132 (18.4)
≥\$75,000	459	224 (50.2)	144 (31.0)	90 (18.8)
Parent education				
Less than college	2,159	1,191 (56.1)	611 (28.3)	349 (15.5)
College or higher	895	431 (50.0)	273 (29.6)	189 (20.4)
Parent marital status				
Single	803	444 (54.1)	242 (31.7)	116 (14.2)
Married	2,264	1,186 (54.7)	647 (27.7)	423 (17.6)
Parent obesity or diabetes				
Yes	842	460 (55.7)	237 (28.2)	142 (16.0)
No	2,636	1,392 (54.0)	776 (29.6)	457 (16.4)
Body mass index				
Underweight	364	185 (48.4)	105 (31.1)	73 (20.5)
Healthy	1,705	885 (54.0)	518 (29.2)	296 (16.7)
Overweight or obese	585	330 (58.8)	159 (26.0)	91 (15.3)
Negative affect				
Low or moderate	1,961	851 (44.5)	643 (33.6)	461 (21.9)
High	1,514	1,001 (68.5)	370 (23.1)	137 (8.4)

* n's may not sum to total sample size due to missing values. Prevalence estimates are population-weighted using imputed data.

Table S4. Associations between psychological assets in adolescence and the likelihood of maintaining cardiometabolic health (CMH) in young adulthood (N=3,478).*

	nCases [†]	CMH Maintenance			
		Model 1	Model 2	Model 3	Model 4
		OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Psychological Assets					
0 Assets	163	Reference	Reference	Reference	Reference
1 Asset	83	0.92 (0.62, 1.36)	0.97 (0.66, 1.43)	0.97 (0.65, 1.46)	0.97 (0.65, 1.46)
2 Assets	67	1.19 (0.75, 1.90)	1.26 (0.76, 2.07)	1.19 (0.71, 1.98)	1.19 (0.70, 2.04)
3 Assets	70	1.10 (0.69, 1.75)	1.27 (0.78, 2.06)	1.25 (0.76, 2.07)	1.26 (0.75, 2.13)
4 Assets	58	1.56 (0.93, 2.62)	1.70 (0.97, 2.98)	1.67 (0.93, 3.00)	1.68 (0.93, 3.04)
5 Assets	46	1.77 (1.01, 3.09)	1.77 (1.02, 3.09)	1.64 (0.92, 2.95)	1.66 (0.90, 3.05)
<i>Linear Trend</i>		1.11 (1.01, 1.22)*	1.13 (1.03, 1.24)**	1.12 (1.01, 1.24)*	1.12 (1.01, 1.25)*

* Model 1 is unadjusted. Model 2 adjusts for age, sex, race and ethnicity (in total sample), family annual income, parental education, and parent marital status. Model 3 further adjusts for parental obesity or diabetes, and participants' BMI in adolescence. Model 4 additionally adjusts for negative affect.

[†] Case counts refer to the number of study participants that maintained CMH within each asset category.

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table S5. Fully adjusted associations between total psychological assets in adolescence and the likelihood of maintaining cardiometabolic health (CMH) in young adulthood in the total sample compared to that (i) among participants with adolescent body mass index (BMI) ≥ 18.5 kg/m², and (ii) among participants with C-reactive protein (CRP) levels less than 3-SD above the sample mean at either follow-up assessment.*

	Total Sample		Adolescent BMI ≥ 18.5 kg/m ²		Adult CRP ≤ 3 -SD Above the Mean	
	nCases [†]	OR (95% CI)	nCases [†]	OR (95% CI)	nCases [†]	OR (95% CI)
	N=3,478		N=3,114		N=3,352	
Psychological Assets						
0-1 Assets	246	Reference	193	Reference	244	Reference
2-3 Assets	137	1.18 (0.82, 1.71)	109	1.24 (0.77, 1.99)	137	1.25 (0.81, 1.92)
4-5 Assets	104	1.69 (1.14, 2.51)**	87	2.12 (1.30, 3.48)**	104	1.70 (1.08, 2.69)*
Linear Trend		1.11 (1.01, 1.22)*		1.17 (1.04, 1.32)**		1.12 (1.01, 1.25)*

* Model 1 is unadjusted. Model 2 adjusts for age, sex, race and ethnicity, family annual income, parental education, and parent marital status. Model 3 further adjusts for parental obesity and diabetes, and participants' BMI in adolescence. Model 4 additionally adjusts for negative affect.

[†] Case counts refer to the number of study participants that maintained CMH within each racial and ethnic group category.

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table S6. Results from fully adjusted models examining associations between total psychological assets in adolescence and the likelihood of maintaining cardiometabolic health (CMH) in young adulthood defined using (i) information on biomarkers assessed at Waves 4 and 5 and cardiometabolic-related diagnoses at Wave 4, (ii) information on biomarkers assessed at Waves 4 and 5 only, and (iii) information on biomarkers (excluding lipid levels) and cardiometabolic-related diagnoses at Wave 4.*

	CMH Defined as ≥ 6 of 7 Biomarkers and No Diagnoses		CMH Defined as ≥ 6 of 7 Biomarkers Only		CMH Defined as ≥ 4 of 5 Biomarkers (Excluding Lipids) and No Diagnoses	
	nCases [†]	OR (95% CI)	nCases [†]	OR (95% CI)	nCases [†]	OR (95% CI)
Psychological Assets						
0-1 Assets	246	Reference	262	Reference	334	Reference
2-3 Assets	137	1.18 (0.82, 1.71)	142	1.22 (0.80, 1.84)	184	1.11 (0.79, 1.57)
4-5 Assets	104	1.69 (1.14, 2.51)**	110	1.69 (1.07, 2.67)*	124	1.46 (1.00, 2.13)*
Linear Trend		1.11 (1.01, 1.22)*		1.12 (1.01, 1.25)*		1.07 (0.98, 1.16)

* Model 1 is unadjusted. Model 2 adjusts for age, sex, race and ethnicity, family annual income, parental education, and parent marital status. Model 3 further adjusts for parental obesity and diabetes, and participants' BMI in adolescence. Model 4 additionally adjusts for negative affect.

[†] Case counts refer to the number of study participants that maintained CMH within each racial and ethnic group category.

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table S7. Associations between total psychological assets in adolescence and patterns in cardiometabolic health across young adulthood (n=3,478).^{a,b}

		Model 1	Model 2	Model 3	Model 4
	n	RRR (95% CI)	RRR (95% CI)	RRR (95% CI)	RRR (95% CI)
Maintained CMH	490	1.14 (1.01, 1.29)*	1.16 (1.03, 1.31)*	1.14 (1.01, 1.29)*	1.14 (1.00, 1.30)*
CMH Improved	471	1.01 (0.93, 1.10)	1.01 (0.93, 1.10)	1.01 (0.93, 1.10)	1.01 (0.86, 1.10)
CMH Declined	350	0.97 (0.90, 1.05)	0.97 (0.89, 1.05)	0.96 (0.89, 1.04)	0.96 (0.88, 1.04)
Persistently Poor CMH	2,167	Reference	Reference	Reference	Reference

^a Associations describe linear trends noted with each additional asset.

^b Model 1 is unadjusted. Model 2 adjusts for age, sex, race and ethnicity, family annual income, parental education, and parent marital status. Model 3 further adjusts for parental obesity and diabetes, and participants' BMI in adolescence. Model 4 additionally adjusts for negative affect.

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table S8. Associations between psychological assets in adolescence and the likelihood of maintaining cardiometabolic health (CMH) in young adulthood additionally adjusting for pubertal timing (N=3,478).*

	CMH Maintenance	
	Model 4	Model 4
	Original Analyses	+ Pubertal Timing
	OR (95% CI)	
Psychological Assets		
0-1 Assets	Reference	Reference
2-3 Assets	1.24 (0.81, 1.90)	1.23 (0.80, 1.89)
4-5 Assets	1.69 (1.07, 2.65)*	1.69 (1.07, 2.64)*
<i>Linear Trend</i>	1.12 (1.01, 1.25)*	1.12 (1.01, 1.25)*

* Model 4 adjusts for age, sex, race and ethnicity, family annual income, parental education, parent marital status, parental obesity or diabetes, participants' BMI in adolescence, negative affect.

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$