

**Supplementary Table 1. Chi-squared test comparing basic and constrained models.**

	Basic Model			Constrained Model			Chi-squared difference test			
	Chi-square	DF	Scaling factor	Chi-square	DF	Scaling factor	CD	TRd	Delta DF	p-value
Testing constant cross-lagged and autoregressive associations	136.886	21	1.6174	217.397	33	1.7976	2.113	80.169	12	< 0.001
Testing constant cross-lagged and autoregressive associations between sexes	156.979	42	1.5734	162.807	58	1.709	2.065	15.132	16	0.515
Testing constant cross-lagged and autoregressive associations between Black and White participants	168.224	42	1.6694	193.826	58	1.8349	2.269	32.969	16	0.007
Testing constant cross-lagged and autoregressive associations between the education groups	103.874	42	1.6602	123.002	58	1.7564	1.6897	21.698	16	0.153

DF = degree of freedom; CD = difference test scaling correction; TRd = Sattora-Bentler scaled chi-Square difference; Delta DF = difference is degrees of freedom.

**Supplementary Table 2. A summary table of unstandardized and standardized coefficients in the overall model**

	Unstd. Coef.	Std. Coef.	p-value
<b>Trait Factor Loadings</b>			
HOMA-IR Age 35	1	0.805	< 0.001
HOMA-IR Age 40	1	0.758	< 0.001
HOMA-IR Age 45	1	0.672	< 0.001
HOMA-IR Age 50	1	0.586	< 0.001
HOMA-IR Age 55	1	0.498	< 0.001
CES-D Age 35	1	0.695	< 0.001
CES-D Age 40	1	0.729	< 0.001
CES-D Age 45	1	0.752	< 0.001
CES-D Age 50	1	0.745	< 0.001
CES-D Age 55	1	0.726	< 0.001
<b>Trait Correlation</b>			
Intercept HOMA-IR with Intercept CES-D	0.656	0.081	0.002
<b>State Factor Variances</b>			
HOMA-IR Age 35	1	0.594	< 0.001
HOMA-IR Age 40	1	0.653	< 0.001
HOMA-IR Age 45	1	0.74	< 0.001
HOMA-IR Age 50	1	0.81	< 0.001
HOMA-IR Age 55	1	0.867	< 0.001
CES-D Age 35	1	0.719	< 0.001
CES-D Age 40	1	0.684	< 0.001
CES-D Age 45	1	0.659	< 0.001
CES-D Age 50	1	0.667	< 0.001
CES-D Age 55	1	0.688	< 0.001
<b>Autoregressive Coefficients</b>			
State HOMA-IR Age 35 -> Age 40	-0.016	-0.014	0.915
State HOMA-IR Age 40 -> Age 45	0.303	0.237	< 0.001
State HOMA-IR Age 45 -> Age 50	0.474	0.378	< 0.001
State HOMA-IR Age 50 -> Age 55	0.645	0.512	< 0.001
State CES-D Age 35 -> Age 40	0.11	0.122	0.002
State CES-D Age 40 -> Age 45	0.013	0.014	0.739
State CES-D Age 45 -> Age 50	0.068	0.066	0.112
State CES-D Age 50 -> Age 55	0.17	0.161	< 0.001
<b>Cross-Lagged Coefficients</b>			
State CES-D Age 35 -> State HOMA-IR Age 40	0.014	0.067	0.057
State CES-D Age 40 -> State HOMA-IR Age 45	0.01	0.032	0.268
State CES-D Age 45 -> State HOMA-IR Age 50	0	0	0.999
State CES-D Age 50 -> State HOMA-IR Age 55	0.006	0.013	0.649
State HOMA-IR Age 35 -> State CES-D Age 40	0.261	0.052	0.111
State HOMA-IR Age 40 -> State CES-D Age 45	0.263	0.065	0.055
State HOMA-IR Age 45 -> State CES-D Age 50	0.01	0.003	0.939
State HOMA-IR Age 50 -> State CES-D Age 55	0.069	0.025	0.389
<b>Occasion-Specific State Correlations</b>			
State HOMA-IR with State CES-D at Age 35	-0.012	-0.002	0.959
State HOMA-IR with State CES-D at Age 40	0.54	0.084	0.015
State HOMA-IR with State CES-D at Age 45	0.301	0.04	0.156
State HOMA-IR with State CES-D at Age 50	0.415	0.045	0.088
State HOMA-IR with State CES-D at Age 55	0.819	0.073	0.014

Unstd. Coef. = unstandardized coefficients; Std. Coef. = standardized coefficients.

**Supplementary Table 3. A summary table of model estimates stratified by Black and White participants.**

	Black Participants			White Participants		
	Unstd. Coef.	Std. Coef.	p-value	Unstd. Coef.	Std. Coef.	p-value
<b>Trait Factor Loadings</b>						
HOMA-IR Age 35	1	0.742	< 0.001	1	0.879	< 0.001
HOMA-IR Age 40	1	0.75	< 0.001	1	0.709	< 0.001
HOMA-IR Age 45	1	0.653	< 0.001	1	0.66	< 0.001
HOMA-IR Age 50	1	0.587	< 0.001	1	0.548	< 0.001
HOMA-IR Age 55	1	0.519	< 0.001	1	0.432	< 0.001
CES-D Age 35	1	0.673	< 0.001	1	0.715	< 0.001
CES-D Age 40	1	0.724	< 0.001	1	0.72	< 0.001
CES-D Age 45	1	0.74	< 0.001	1	0.742	< 0.001
CES-D Age 50	1	0.746	< 0.001	1	0.718	< 0.001
CES-D Age 55	1	0.728	< 0.001	1	0.702	< 0.001
<b>Trait Correlation</b>						
Intercept HOMA-IR with Intercept CES-D	0.16	0.018	0.629	0.32	0.053	0.208
<b>State Factor Variances</b>						
HOMA-IR Age 35	1	0.671	< 0.001	1	0.478	< 0.001
HOMA-IR Age 40	1	0.661	< 0.001	1	0.705	< 0.001
HOMA-IR Age 45	1	0.758	< 0.001	1	0.752	< 0.001
HOMA-IR Age 50	1	0.81	< 0.001	1	0.837	< 0.001
HOMA-IR Age 55	1	0.855	< 0.001	1	0.902	< 0.001
CES-D Age 35	1	0.74	< 0.001	1	0.699	< 0.001
CES-D Age 40	1	0.69	< 0.001	1	0.693	< 0.001
CES-D Age 45	1	0.672	< 0.001	1	0.671	< 0.001
CES-D Age 50	1	0.666	< 0.001	1	0.696	< 0.001
CES-D Age 55	1	0.685	< 0.001	1	0.712	< 0.001
<b>Autoregressive Coefficients</b>						
State HOMA-IR Age 35 -> Age 40	0.003	0.003	0.982	0.185	0.101	0.718
State HOMA-IR Age 40 -> Age 45	0.264	0.2	0.01	0.374	0.327	0.001
State HOMA-IR Age 45 -> Age 50	0.369	0.311	< 0.001	0.62	0.462	< 0.001
State HOMA-IR Age 50 -> Age 55	0.507	0.425	< 0.001	0.851	0.622	< 0.001
State CES-D Age 35 -> Age 40	0.12	0.138	0.012	0.064	0.065	0.244
State CES-D Age 40 -> Age 45	0.025	0.026	0.668	-0.003	-0.003	0.954
State CES-D Age 45 -> Age 50	0.105	0.107	0.071	0.061	0.057	0.324
State CES-D Age 50 -> Age 55	0.129	0.123	0.026	0.23	0.219	< 0.001
<b>Cross-Lagged Coefficients</b>						
State CES-D Age 35 -> State HOMA-IR Age 40	0.013	0.062	0.221	0.02	0.088	0.071
State CES-D Age 40 -> State HOMA-IR Age 45	0.019	0.059	0.169	-0.001	-0.003	0.936
State CES-D Age 45 -> State HOMA-IR Age 50	-0.005	-0.012	0.77	0.009	0.024	0.55
State CES-D Age 50 -> State HOMA-IR Age 55	-0.012	-0.024	0.571	0.024	0.049	0.125
State HOMA-IR Age 35 -> State CES-D Age 40	0.157	0.039	0.322	0.488	0.064	0.339
State HOMA-IR Age 40 -> State CES-D Age 45	0.336	0.085	0.096	0.289	0.073	0.081
State HOMA-IR Age 45 -> State CES-D Age 50	-0.077	-0.026	0.668	0.247	0.067	0.132
State HOMA-IR Age 50 -> State CES-D Age 55	0.006	0.002	0.962	0.219	0.076	0.038
<b>Occasion-Specific State Correlations</b>						
State HOMA-IR with State CES-D at Age 35	0.058	0.006	0.892	-0.218	-0.068	0.381
State HOMA-IR with State CES-D at Age 40	0.804	0.106	0.028	0.387	0.068	0.099
State HOMA-IR with State CES-D at Age 45	0.309	0.033	0.421	0.366	0.063	0.076
State HOMA-IR with State CES-D at Age 50	0.196	0.018	0.64	0.681	0.087	0.013
State HOMA-IR with State CES-D at Age 55	0.725	0.057	0.198	0.825	0.086	0.023

Unstd. Coef. = unstandardized coefficients; Std. Coef. = standardized coefficients

**Supplementary Table 4. A summary table of unstandardized and standardized coefficients in the overall model excluding observations using glucocorticoids, antipsychotics, antidepressants, weight-loss medications, statin, anti-inflammatory, and non-insulin diabetes medications**

	Unstd. Coef.	Std. Coef.	p-value
<b>Trait Factor Loadings</b>			
HOMA-IR Age 35	1	0.798	< 0.001
HOMA-IR Age 40	1	0.768	< 0.001
HOMA-IR Age 45	1	0.685	< 0.001
HOMA-IR Age 50	1	0.6	< 0.001
HOMA-IR Age 55	1	0.505	< 0.001
CES-D Age 35	1	0.696	< 0.001
CES-D Age 40	1	0.736	< 0.001
CES-D Age 45	1	0.743	< 0.001
CES-D Age 50	1	0.745	< 0.001
CES-D Age 55	1	0.719	< 0.001
<b>Trait Correlation</b>			
Intercept HOMA-IR with Intercept CES-D	0.997	0.115	< 0.001
<b>State Factor Variances</b>			
HOMA-IR Age 35	1	0.602	< 0.001
HOMA-IR Age 40	1	0.64	< 0.001
HOMA-IR Age 45	1	0.729	< 0.001
HOMA-IR Age 50	1	0.8	< 0.001
HOMA-IR Age 55	1	0.863	< 0.001
CES-D Age 35	1	0.718	< 0.001
CES-D Age 40	1	0.677	< 0.001
CES-D Age 45	1	0.67	< 0.001
CES-D Age 50	1	0.667	< 0.001
CES-D Age 55	1	0.695	< 0.001
<b>Autoregressive Coefficients</b>			
State HOMA-IR Age 35 -> Age 40	-0.013	-0.011	0.922
State HOMA-IR Age 40 -> Age 45	0.265	0.207	< 0.001
State HOMA-IR Age 45 -> Age 50	0.441	0.352	< 0.001
State HOMA-IR Age 50 -> Age 55	0.634	0.496	< 0.001
State CES-D Age 35 -> Age 40	0.102	0.114	0.002
State CES-D Age 40 -> Age 45	0.028	0.029	0.461
State CES-D Age 45 -> Age 50	0.106	0.106	0.003
State CES-D Age 50 -> Age 55	0.221	0.204	< 0.001
<b>Cross-Lagged Coefficients</b>			
State CES-D Age 35 -> State HOMA-IR Age 40	0.01	0.046	0.187
State CES-D Age 40 -> State HOMA-IR Age 45	0.011	0.037	0.163
State CES-D Age 45 -> State HOMA-IR Age 50	-0.002	-0.006	0.803
State CES-D Age 50 -> State HOMA-IR Age 55	0.003	0.007	0.765
State HOMA-IR Age 35 -> State CES-D Age 40	0.208	0.044	0.138
State HOMA-IR Age 40 -> State CES-D Age 45	0.035	0.008	0.785
State HOMA-IR Age 45 -> State CES-D Age 50	-0.009	-0.003	0.938
State HOMA-IR Age 50 -> State CES-D Age 55	0.04	0.014	0.568
<b>Occasion-Specific State Correlations</b>			
State HOMA-IR with State CES-D at Age 35	-0.05	-0.007	0.83
State HOMA-IR with State CES-D at Age 40	0.315	0.048	0.151
State HOMA-IR with State CES-D at Age 45	0.408	0.05	0.067
State HOMA-IR with State CES-D at Age 50	0.16	0.017	0.47
State HOMA-IR with State CES-D at Age 55	0.843	0.069	0.005

Unstd. Coef. = unstandardized coefficients; Std. Coef. = standardized coefficients.

Model fit indices: Chi-square = 129.761, DF = 21,  $p < 0.001$ ; RMSEA [90% CI] = 0.034 [0.029, 0.040]; SRMR = 0.028; CFI = 0.982.