

Distinct associations of peripheral mitochondrial DNA copy number and bioenergetic function with cognition in women with HIV

SUPPLEMENTARY MATERIALS

Supplementary Table 1 Primer sequences (5'→3') for qPCR amplification of the mitochondrial DNA gene *ND1* and reference genes (*RPPH1*, *β-Globin*) for normalization

Gene	Primer Sequences (5' to 3')
ND1	F: CCCTAAAACCCGCCACATCT R: GAGCGATGGTGAGAGCTAAGGT
RPPH1	F: CATGCCGTCCCGCGATATTGA R: GTTGATGACGTCAGCGTTCTGAATTC
β-Globin	F: GGGCCTTGAGCATCTGGATT R: ACTGACCTCCCACATTCCCT

Supplementary Table 2 Mitochondrial PCA—Rotated Component Matrix^a

Mitochondrial Metric	Component	
	1	2
ATP Production	0.938	0.092
Basal Respiration	0.918	0.222
Maximum Respiration	0.913	0.189
Non-Mitochondrial Respiration	0.891	-0.089
Spare Respiratory Capacity	0.848	0.172
Coupling Efficiency	0.764	-0.509
Proton Leak	0.189	0.946

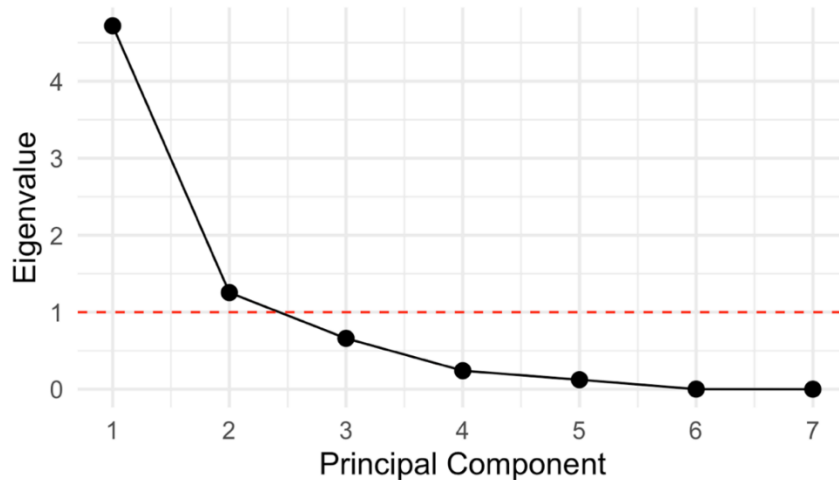
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in three iterations.

Supplementary Table 3 Mitochondrial PCA—Total Variance Explained

Initial Eigenvalues				Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	Percent of Variance	Cumulative Percent	Total	Percent of Variance	Cumulative Percent	Total	Percent of Variance	Cumulative Percent
1	4.718	67.406	67.406	4.718	67.406	67.406	4.689	66.979	66.979
2	1.255	17.928	85.335	1.255	17.928	85.335	1.285	18.355	85.335
3	0.660	9.435	94.770						
4	0.241	3.442	98.212						
5	0.123	1.763	99.975						
6	0.001	0.020	99.995						
7	0.000	0.005	100.000						

Extraction Method: Principal Component Analysis.



Supplementary Figure 1 Scree Plot of Mitochondrial PCA

Supplementary Table 4 Descriptive Statistics for Individual Seahorse Mitochondrial Metrics

Mitochondrial Outcome	Mean (SD)
ATP Production	79.79 (41.79)
Basal Respiration	90.34 (44.22)
Coupling Efficiency	85.41 (10.48)
Maximum Respiration	248.28 (191.87)
Non-Mitochondrial Respiration	34.16 (22.81)
Proton Leak	10.15 (5.90)
Spare Respiratory Capacity	162.12 (157.86)

Supplementary Table 5 Associations between mtDNA content and seahorse-derived mitochondrial respiration function measures

Outcome measures	mtDNA Content	
	<i>r</i>	<i>P</i> -value
ATP Production	-0.164	0.239
Basal Respiration	-0.167	0.231
Coupling Efficiency	-0.076	0.586
Maximum Respiration	-0.299	0.029*
Non-Mitochondrial Respiration	-0.263	0.057
Proton Leak	-0.044	0.755
Spare Respiratory Capacity	-0.314	0.022*

* $P < 0.05$ level (2-tailed).

Supplementary Figure 2 Higher mtDNAcn is associated with reduced maximum respiration and spare respiratory capacity in mitochondria Scatterplots depict Pearson correlations between mtDNAcn and two mitochondrial function outcomes: maximum respiration and spare respiratory capacity. Individual points represent participants (n=58) and shaded areas reflect 95% confidence intervals.

