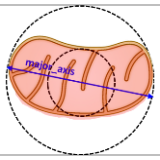
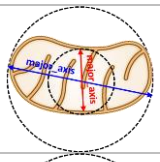
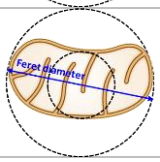
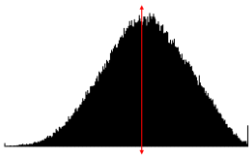
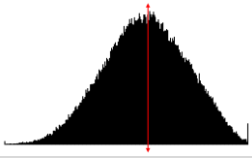
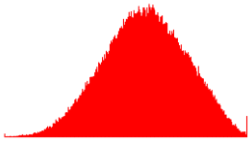
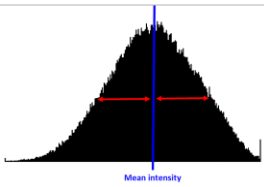
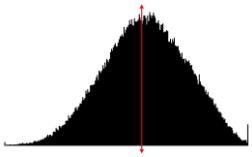
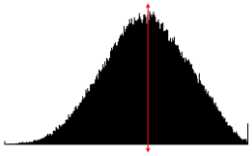
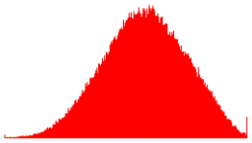
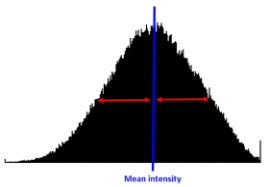
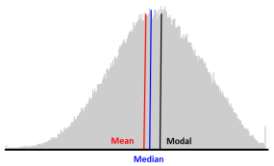
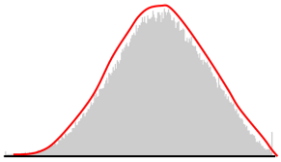
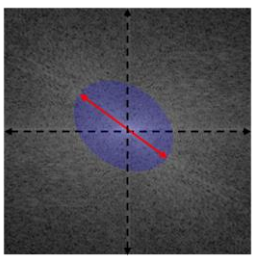
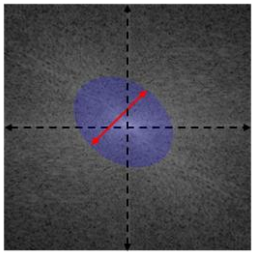
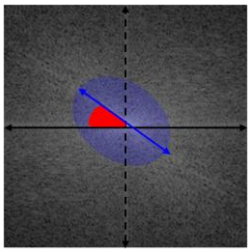
Supplementary Table 1: Description of Mitochondria morphometrics.

METRIC NAME	DEFINITION	Illustration
MORPHOLOGY MEASUREMENTS		
Mito_Area	Area of the mitochondria	
Mito_Perimeter	The length of the outside boundary of the mitochondria.	
AreaPerimeter_Ratio	Ratio between Perimeter and Area	
Mito_CentroidX and Mito_CentroidY	X and Y coordinates of the center point of the mitochondria.	
Mito_Circularity	Shape of the mitochondria defined as ***(4 π *area/perimeter^2)***. A value of 1.0 indicates a perfect circle. As the value approaches 0.0, it indicates an increasingly elongated shape	
Mito_Roundness	Shape of the mitochondria defined as ***(4*area/(π*major_axis^2))***, or the inverse of the aspect ratio.	
Mito_Solidity	Ratio between area and convex area	
Mito_AR	Aspect Ratio : Ratio between major axis and minor axis	
Mito_Feret_Diameter	The longest distance between any two points along the mitochondria boundary, also known as maximum caliper	
Mito_FeretX and Mito_FeretY	Starting coordinates of the Feret's diameter	
TEXTURE MEASUREMENTS		
Mito_MeanInt	Average intensity calculated from mitochondria's gray values	
Mito_MedianInt	Median intensity calculated from mitochondria's gray values.	

Mito_TotalInt	Sum of the mitochondria's gray values	
Intensity_SD	Standard deviation of the mitochondria's gray values used to generate the mean intensity. Measure of crista's density within the mitochondria	
Intensity_SD_percent	Ratio between Intensity_SD and MeanInt. Measure of crista's density within the mitochondria	
TEXTURE MEASUREMENTS - CORRECTED		
Mito_MeanInt_CORR	Average intensity calculated from mitochondria's gray values after High frequency filtering (FFT noise correction)	
Mito_MedianInt_CORR	Median intensity calculated from mitochondria's gray values after High frequency filtering (FFT noise correction)	
Mito_TotalInt_CORR	Sum of the mitochondria's gray values, after High frequency filtering (FFT noise correction)	
Intensity_SD_CORR	Standard deviation of the mitochondria's gray values used to generate the mean, after High frequency filtering (FFT noise correction). Measure of crista's density within the mitochondria	
Intensity_SD_percent_CORR	Ratio between Intensity_SD_CORR and MeanInt_CORR. Measure of crista's density within the mitochondria	
CRISTA MEASUREMENTS		
Skewness	Third order moment about the mean. Measure of the asymmetry of the mitochondria's gray values about the mean intensity	
Kurtosis	The fourth order moment about the mean. Measure of the "tailedness" of the mitochondria's gray values about the mean intensity.	
CristaOrientation_Major	Primary axis of the best fitting ellipse calculated from the frequency spectrum of the mitochondria's gray values. Measure of the Crista's orientation, alignment and number within the mitochondria.	

CristaOrientation_Minor	Secondary axis of the best fitting ellipse calculated from the frequency spectrum of the mitochondria's gray values. Measure of the Crista's orientation, alignment and number within the mitochondria.	
CristaOrientation_Angle	Angle (between the primary axis and a **line parallel to the x-axis** of the image) of the best fitting ellipse calculated from the frequency spectrum of the mitochondria's gray values. Measure of the Crista's orientation, alignment and number within the mitochondria.	
CristaOrientation_Area	Area of the best fitting ellipse calculated from the frequency spectrum of the mitochondria's gray values. Measure of the Crista's orientation, alignment and number within the mitochondria.