

**Table S1.** Individual data of carrier of Friedreich Ataxia (C-FRDA).

Subject N <sup>o</sup> <sub>a</sub>	Age (years)	Genger (M <sup>b</sup> /F <sup>c</sup> )	Number of GAA triplet ripetitions
C-FRDA #1	48	M <sup>b</sup>	822
C-FRDA #2	60	F <sup>c</sup>	843
C-FRDA #3	57	F <sup>c</sup>	1005
C-FRDA #4	48	F <sup>c</sup>	670
C-FRDA #5	51	F <sup>c</sup>	615
C-FRDA #6	65	M <sup>b</sup>	876
C-FRDA #7	65	M <sup>b</sup>	900
C-FRDA #8	58	M <sup>b</sup>	730
C-FRDA #9	55	M <sup>b</sup>	790
C-FRDA #10	53	M <sup>b</sup>	619

<sup>a</sup>N<sup>o</sup>= number of subject; <sup>b</sup>M = male; <sup>c</sup>F = female.

**Table S2.** Correlations between functional and morphological retinal and optic nerve values with number of GAA triplet repetitions.

	Number of GAA triplet repetitions (r <sup>a</sup> ; p <sup>b</sup> )
ffERG b-wave A <sup>c</sup> (μV) <sup>d</sup>	-0.651; 0.003
mfERG <sup>e</sup> R1 <sup>f</sup> RAD <sup>g</sup> (nV/deg <sup>2</sup> ) <sup>h</sup>	-0.082; 0.779
mfERG <sup>e</sup> R2 <sup>i</sup> RAD <sup>g</sup> (nV/deg <sup>2</sup> ) <sup>h</sup>	0.047; 0.873
mfERG <sup>e</sup> R3 <sup>j</sup> RAD <sup>g</sup> (nV/deg <sup>2</sup> ) <sup>h</sup>	-0.215; 0.480
mfERG <sup>e</sup> R4 <sup>k</sup> RAD <sup>g</sup> (nV/deg <sup>2</sup> ) <sup>h</sup>	-0.082; 0.781
mfERG <sup>e</sup> R5 <sup>l</sup> RAD <sup>g</sup> (nV/deg <sup>2</sup> ) <sup>h</sup>	-0.182; 0.534
15' <sup>m</sup> PERG <sup>n</sup> IT <sup>o</sup> (msec) <sup>p</sup>	-0.105; 0.700
15' <sup>m</sup> PERG <sup>n</sup> A <sup>q</sup> (μV) <sup>d</sup>	-0.505; 0.046
15' <sup>m</sup> VEP <sup>r</sup> IT <sup>o</sup> (msec) <sup>p</sup>	-0.252; 0.285
15' <sup>m</sup> VEP <sup>r</sup> A <sup>q</sup> (μV) <sup>d</sup>	0.120; 0.615
60' <sup>r</sup> VEP <sup>s</sup> IT <sup>t</sup> (msec) <sup>p</sup>	-0.238; 0.312
60' <sup>r</sup> VEP <sup>s</sup> A <sup>w</sup> (μV) <sup>d</sup>	-0.003; 0.992
MV <sup>x</sup> – WR <sup>y</sup> (mm3) <sup>z</sup>	0.372; 0.106
MV <sup>x</sup> – IR <sup>aa</sup> (mm3) <sup>z</sup>	-0.018; 0.940
MV <sup>x</sup> – OR <sup>ab</sup> (mm3) <sup>z</sup>	-0.086; 0.719
RNFL <sup>ac</sup> OT <sup>ad</sup> (μm) <sup>ae</sup>	-0.156; 0.512
RNFL <sup>ac</sup> ST <sup>af</sup> (μm) <sup>ae</sup>	-0.397; 0.083
RNFL <sup>ac</sup> IT <sup>ag</sup> (μm) <sup>ae</sup>	0.069; 0.774
RNFL <sup>ac</sup> NT <sup>ah</sup> (μm) <sup>ae</sup>	-0.210; 0.374
RNFL <sup>ac</sup> TT <sup>ai</sup> (μm) <sup>ae</sup>	0.225; 0.341

<sup>a</sup>r= Pearson correlation coefficient ; <sup>b</sup>p= p-value of correlation (less or equal ( $\leq$ ) to 0.01 was considered statistically significant); <sup>c</sup>ffERG b-wave A= amplitude of b-wave obtained by full field electroretinogram; <sup>d</sup>μV= microvolt; <sup>e</sup>mfERG = multifocal electroretinogram; <sup>f</sup>R1= ring 1 (circular retinal area centred on the fovea: from 0 to 2.5 degrees); <sup>g</sup>RAD=response amplitude density; <sup>h</sup>nV/deg<sup>2</sup>= nanoVolt/degrees<sup>2</sup> ; <sup>i</sup>R2=ring 2 (concentric annular retinal area centred on the fovea: from 2.5 to 5 degrees); <sup>j</sup>R3= ring 3 (concentric annular retinal area centred on the fovea: from 5 to 10 degrees); <sup>k</sup>R4=ring 4 (concentric annular retinal area centred on the fovea: from 10 to 15 degrees); <sup>l</sup>R5=ring 5 (concentric annular retinal area centred on the fovea: from 15 to 20 degrees); <sup>m</sup>15'=responses obtained with checks edges subtending 15 minutes of arc; <sup>n</sup> PERG= pattern electroretinogram; <sup>o</sup>IT= P50 implicit time; <sup>p</sup> msec= milliseconds; <sup>q</sup>A: P50-N95 amplitude;

<sup>r</sup>60'=responses obtained with checks edges subtending 60 minutes of arc; <sup>s</sup>VEP= visual evoked potential; <sup>t</sup>IT= P100 implicit time; <sup>w</sup>A: N75-P100 amplitude; <sup>x</sup>MV= macular volume; <sup>y</sup>WR= whole retina; <sup>z</sup> mm<sup>3</sup>= cubic millimeters; <sup>aa</sup> IR= inner retina; <sup>ab</sup> OR= outer retina; <sup>ac</sup> RNFL= retinal nerve fibers layer; <sup>ad</sup> OT= overall thickness; <sup>ae</sup>  $\mu$ m= micron; <sup>af</sup> ST= superior thickness; <sup>ag</sup> IT= inferior thickness; <sup>ah</sup> NT= nasal thickness; <sup>ai</sup> TT= temporal thickness .

**Figure S1.** Box plots of Multifocal Electroretinogram (mfERG) response amplitude density (RAD, measured in nanoVolt/degree<sup>2</sup>—nV/deg<sup>2</sup>) values detected in Controls and in carriers for Friedreich Ataxia (C-FRDA) obtained from five concentric annular retinal regions (RINGS) centred on the fovea.

