Infant

Primate ID	Age	Genotype	Sex	Imaging
150	3 months	Wildtype	Male	OCT/ERG
131	4 months	Wildtype	Female	OCT/ERG
762	4 months	Wildtype	Female	OCT/ERG
953	5 months	Wildtype	Male	ERG only
615	6 months	Wildtype	Male	OCT/ERG
419	10 months	Wildtype	Female	OCT/ERG
707	3 months	Homozygous	Female	OCT/ERG
593	3 months	Homozygous	Female	OCT/ERG
587	3 months	Homozygous	Male	OCT/ERG
425	4 months	Homozygous	Female	OCT only
968	4 months	Homozygous	Male	OCT/ERG
670	5 months	Homozygous	Female	OCT/ERG
817	5 months	Homozygous	Female	OCT/ERG
488	5 months	Homozygous	Female	OCT/ERG
496	5 months	Homozygous	Female	OCT/ERG
903	6 months	Homozygous	Female	OCT/ERG
912	6 months	Homozygous	Female	OCT/ERG
841	7 months	Homozygous	Male	OCT/ERG
753	2 months	Heterozygous	Female	ERG only
771	2 months	Heterozygous	Female	ERG only
637	4 months	Heterozygous	Male	ERG only
55	4 months	Heterozygous	Female	OCT/ERG
213	6 months	Heterozygous	Male	ERG only
232	6 months	Heterozygous	Male	ERG only
915	6 months	Heterozygous	Male	OCT/ERG
930	6 months	Heterozygous	Female	OCT/ERG
818	8 months	Heterozygous	Male	OCT/ERG
987	11 months	Heterozygous	Male	OCT/ERG
587	11 months	Heterozygous	Male	OCT/ERG

Adult

Primate ID	Age	Genotype	Sex	Imaging
767	3 years	Wildtype	Female	OCT/ERG
478	3 years	Wildtype	Female	OCT/ERG
10	4 years	Wildtype	Female	OCT/ERG
404	4 years	Wildtype	Male	OCT/ERG
210	5 years	Wildtype	Female	OCT only
524	6 years	Wildtype	Female	OCT/ERG
503	6 years	Wildtype	Male	OCT/ERG
421	12 years	Wildtype	Female	OCT/ERG
639	4 years	Homozygous	Female	OCT/ERG
888	5 years	Homozygous	Female	OCT/ERG
677	5 years	Homozygous	Female	OCT/ERG
952	6 years	Homozygous	Male	OCT/ERG
314	10 years	Homozygous	Female	OCT/ERG
997	3 years	Heterozygous	Female	OCT/ERG
309	3 years	Heterozygous	Male	OCT/ERG
388	7 years	Heterozygous	Female	OCT/ERG
486	7 years	Heterozygous	Female	OCT/ERG
108	7 years	Heterozygous	Female	OCT/ERG
785	10 years	Heterozygous	Female	OCT/ERG
732	11 years	Heterozygous	Female	OCT/ERG
17	11 years	Heterozygous	Female	OCT/ERG
271	16 years	Heterozygous	Male	OCT/ERG

Supplemental Table 1. Detailed table showing individual primate with age, genotype, sex, and imaging performed. The table is organized with infant data on the left and adult data on the right. Within each age group, data is grouped by genotype where wildtype data is presented at the top, followed by heterozygote data and homozygote data.

Supplemental Table 2. Detailed table showing every statistical test performed in every comparison. The table is organized in the order that it was mentioned in the paper.

Supplemental Table 1. Overview of statistical analysis performed

Comparison	Related Figure	Genotypes Compared	Statistical Test	F value and P value	Post Hoc Test	Groups Compared	*P* value	Mean Values
Infant genotype								
Amplitude Light Adapted 3.0 cd•s•m^{-2} a-wave	Figure 1a	Wildtype vs Heterozygotes vs Homozygotes	One way ANOVA	F (2,25) = 167.7 *P* <0.0001 Interaction between genotype and amplitude	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (27.6 ± 1.7µV) Homozygotes (0.01 ± 0.3 µV)
						Wildtype vs Heterozygotes	*P* =0.1439	Wildtype (27.6 ± 1.7µV) Heterozygote (31.5 ± 1.8µV)
Amplitude Light Adapted 3.0 cd•s•m^{-2} b-wave	Figure 1a	Wildtype vs Heterozygotes vs Homozygotes	One way ANOVA	F (2,25) = 91.70 *P* <0.0001 Interaction between genotype and amplitude	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (116.2 ± 11.2µV) Homozygote (0.1 ± 0.1 µV)
						Wildtype vs Heterozygotes	*P* =0.8459	Wildtype (116.2 ± 11.2µV) Heterozygote (121.4 ± 9.2)
Amplitude Light Adapted 3.0 cd•s•m^{-2} Flicker b-wave	Figure 1a	Wildtype vs Heterozygotes vs Homozygotes	One way ANOVA	F (2,25) = 82.11 *P* <0.0001 Interaction between genotype and amplitude	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (96.2 ± 9.3µV) Homozygote (0.8 ± 0.5 µV)
						Wildtype vs Heterozygotes	*P* =0.5881	Wildtype (96.2 ± 9.3µV) Heterozygote (88.4 ± 7.2 µV)
OCT Total Foveal Thickness	Figure 2a	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (14,160) = 7.407 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (204.3 ± 12 µm) Homozygotes (130.9 ± 3.6 µm)
						Wildtype vs Heterozygotes	*P* =0.8932	Wildtype (204.3 ± 12 µm) Heterozygote (200.8 ± 11.3 µm)
OCT ONL Foveal Thickness	Figure 2a	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (14,160) = 7.407 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (89.9 ± 6.5 µm) Homozygotes (40.5 ± 2.3 µm)
						Wildtype vs Heterozygotes	*P* =0.2730	Wildtype (89.9 ± 6.5 µm) Heterozygotes (77.2 ± 7.9 µm)
OCT Total Nasal Thickness	Supplemental Figure 3a	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22,240) = 5.309 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (356.3 ± 19.0 µm) Homozygotes (290.8 ± 4.9 µm)
						Wildtype vs Heterozygotes	*P* =0.9992	Wildtype (356.3 ± 19.0 µm) Heterozygotes (356.0 ± 18.5 µm)
OCT ONL Nasal Thickness	Supplemental Figure 3a	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22,240) = 6.291 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (71.6 ± 4.7 µm) Homozygotes (47.8 ± 1.9 µm)
						Wildtype vs Heterozygotes	*P* =0.4395	Wildtype (71.6 ± 4.7 µm) Heterozygotes (67.4 ± 3.3 µm)
OCT Total Temporal Thickness	Supplemental Figure 3b	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22, 240) = 6.292 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (340.3 ± 17.0 µm) Homozygotes (273.0 ± 4.9 µm)
						Wildtype vs Heterozygotes	*P* =0.8550	Wildtype (340.3 ± 17.0 µm) Heterozygotes (343.8 ± 15.9 µm)

OCT ONL Temporal Thickness	Supplemental Figure 3b	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22, 240) = 6.292 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (71.3 ± 5.6 µm) Homozygotes (42.9 ± 1.2 µm)
						Wildtype vs Heterozygotes	*P* =0.3209	Wildtype (71.3 ± 5.6 µm) Heterozygotes (61.4 ± 4.3 µm)
Adult genotype								
OCT Total Foveal Thickness	Figure 3a	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (14, 152) = 19.53 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (225.2 ± 10.0 µm) Homozygotes (116.7 ± 6.9 µm)
						Wildtype vs Heterozygotes	*P* =0.4513	Wildtype (225.2 ± 10.0 µm) Heterozygote (232.0 ± 7.8 µm)
OCT ONL Foveal Thickness	Figure 3a	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (14, 152) = 19.53 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (95.3 ± 6.6 µm) Homozygotes (18.16 ± 3.2 µm)
						Wildtype vs Heterozygotes	*P* =0.5030	Wildtype (95.3 ± 6.6 µm) Heterozygotes (89.0 ± 4.9 µm)
OCT Total Nasal Thickness	Supplemental Figure 3c	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22, 228) = 9.173 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (362.9 ± 12.0 µm) Homozygotes (261.5 ± 9.9 µm)
						Wildtype vs Heterozygotes	*P* =0.1091	Wildtype (362.9 ± 12.0 µm) Heterozygotes (375.8 ± 11.9 µm)
OCT ONL Nasal Thickness	Supplemental Figure 3c	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22, 228) = 9.173 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (71.0 ± 2.9 µm) Homozygotes (25.5 ± 3.5 µm)
						Wildtype vs Heterozygotes	*P* =0.4395	Wildtype (71.0 ± 2.9 µm) Heterozygotes (71.2 ± 2.6 µm)
OCT Total Temporal Thickness	Supplemental Figure 3d	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22, 228) = 6.308 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (349.0 ± 12.1 µm) Homozygotes (241.0 ± 10.1 µm)
						Wildtype vs Heterozygotes	*P* =0.8079	Wildtype (349.0 ± 12.1 µm) Heterozygotes (353.6 ± 14.8 µm)
OCT ONL Temporal Thickness	Supplemental Figure 3d	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (22, 228) = 6.308 *P* <0.0001 Interaction between genotype and retinal layer thickness	Dunnett's Multiple Comparisons	Wildtype vs Homozygotes	*P* <0.0001	Wildtype (63.5 ± 4.9 µm) Homozygotes (23.3 ± 3.3 µm)
						Wildtype vs Heterozygotes	*P* =0.8087	Wildtype (63.5 ± 4.9 µm) Heterozygotes (68.1 ± 4.4 µm)

Adult vs Infant								
OCT ONL Foveal Thickness	Figure 3b	Infant Homozygotes vs Adult Homozygotes	Two-way ANOVA	F (7,120) = 3.323 *P* =0.0029 Interaction between age and retinal layer thickness	Holm-Šídák	Infant vs Adult	*P* =0.003	Infant (40.5 ± 2.3 µm) Adult (18.2 ± 3.2 µm)
Amplitude Light Adapted 3.0 cd•s•m^{-2} Flicker b-wave	Figure 1b	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (2, 43) = 62.16 *P* <0.0001 Significance amongst genotype	Tukey's Analysis	*Infant* Wildtype vs Homozygotes	*P* <0.0001	Wildtype (96.2 ± 9.3 µV) Homozygotes (0.8 ± 0.5 µV)
						Infant Wildtype vs Heterozygotes	*P* =0.9799	Wildtype (96.2 ± 9.3 µV) Heterozygotes (88.4 ± 7.2 µV)
						Adult Wildtype vs Homozygotes	*P* <0.0001	Wildtype (66.7 ± 15.2 µV) Homozygotes (0.3 ± 0.0 µV)
						Adult Wildtype vs Heterozygotes	*P* >0.9999	Wildtype (66.7 ± 15.2 µV) Heterozygotes (64.2 ± 5.6 µV)
Amplitude Light Adapted 3.0 cd•s•m^{-2} a-wave	Figure 1b	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (2, 43) = 107.7 *P* <0.0001 Significance amongst genotype	Tukey's Analysis	*Infant* Wildtype vs Homozygotes	*P* <0.0001	Wildtype (27.6 ± 1.7 µV) Homozygotes (0.0 ± 0.3 µV)
						Infant Wildtype vs Heterozygotes	*P* =0.7724	Wildtype (27.6 ± 1.7 µV) Heterozygotes (31.5 ± 1.8 µV)
						Adult Wildtype vs Homozygotes	*P* <0.0001	Wildtype (25.2 ± 4.2 µV) Homozygotes (0.2 ± 0.2 µV)
						Adult Wildtype vs Homozygotes	*P* =0.9987	Wildtype (25.2 ± 4.2 µV) Heterozygotes (24.1 ± 1.7 µV)
Amplitude Light Adapted 3.0 cd•s•m^{-2} b-wave	Figure 1b	Wildtype vs Heterozygotes vs Homozygotes	Two-way ANOVA	F (2, 43) = 66.45 *P* <0.0001 Significance amongst genotype	Tukey's Analysis	*Infant* Wildtype vs Homozygotes	*P* <0.0001	Wildtype (116.2 ± 11.2 µV) Homozygotes (0.1 ± 0.1 µV)
						Infant Wildtype vs Heterozygotes	*P* =0.9989	Wildtype (116.2 ± 11.2 µV) Heterozygotes (121.4 ± 9.2 µV)
						Adult Wildtype vs Homozygotes	*P* <0.0001	Wildtype (96.2 ± 20.1 µV) Homozygotes (0.0 ± 0.0 µV)
						Adult Wildtype vs Heterozygotes	*P* =0.6854	Wildtype (96.2 ± 20.1 µV) Heterozygotes (75.9 ± 5.9 µV)

Implicit Time Light Adapted 3.0 cd•s•m^{-2} a-wave	Supplemental Figure 4a	Wildtype vs Heterozygotes	Two-way ANOVA	F (1, 29) = 3.296 *P*=0.0798 No Significance amongst genotype or age	Tukey's Analysis	*Infant* Wildtype vs Heterozygotes	*P* =0.4949	Wildtype (12.2 ± 0.3 ms) Heterozygotes (14.0 ± 0.4 ms)
						Adult Wildtype vs Heterozygotes	*P* =0.7531	Wildtype (14.1 ± 0.4 ms) Heterozygotes (13.5 ± 0.3 ms)
						Infant wildtype vs Adult wildtype	*P* =0.4286	Wildtype (12.2 ± 0.3 ms) Wildtype (14.1 ± 0.4 ms)
						Infant heterozygotes vs Adult heterozygotes	P =0.7591	Infant Heterozygotes (14.0 ± 0.4 ms) Adult Heterozygotes (13.5 ± 0.3 ms)
Implicit Time Light Adapted 3.0 cd•s•m^{-2} b-wave	Supplemental Figure 4b	Wildtype vs Heterozygotes	Two-way ANOVA	F (1,29) = 1.319 *P* =0.2601 No significance amongst genotype or age	Tukey's Analysis	*Infant* Wildtype vs Heterozygotes	*P* =0.9996	Wildtype (26.6 ± 0.6 ms) Heterozygotes (26.7 ± 0.5 ms)
						Adult Wildtype vs Heterozygotes	*P* =0.4345	Wildtype (29.0 ± 0.8 ms) Heterozygotes (27.5 ± 0.8 ms)
						Infant wildtype vs Adult wildtype	*P* =0.1330	Infant Wildtype (26.6 ± 0.6 ms) Adult Wildtype (29.0 ± 0.8 ms)
						Infant heterozygotes vs Adult heterozygotes	*P* =0.7721	Infant Heterozygotes (26.7 ± 0.5 ms) Adult Heterozygotes (27.5 ± 0.8 ms)
Implicit Time Light Adapted 3.0 cd•s•m^{-2} Flicker b-wave	Supplemental Figure 4c	Wildtype vs Heterozygotes	Two-way ANOVA	F (1,29) = 1.794 *P* =0.1908 No significance amongst genotype or age	Tukey's Analysis	*Infant* Wildtype vs Heterozygotes	*P* =0.7694	Wildtype (24.3 ± 0.3 ms) Heterozygotes (24.9 ± 0.4 ms)
						Adult Wildtype vs Heterozygotes	*P* =0.9218	Wildtype (25.1 ± 0.4 ms) Heterozygotes (24.6 ± 0.4 ms)
						Infant wildtype vs Adult wildtype	*P* =0.5578	Infant Wildtype (24.3 ± 0.3 ms) Adult Wildtype (25.1 ± 0.4 ms)
						Infant heterozygote vs Adult heterozygote	*P* =0.9591	Infant Heterozygotes (24.9 ± 0.4 ms) Adult Heterozygotes (24.6 ± 0.4 ms)