

Appendix A: Low dose DNA damage and repair response across four murine strains.

Table A.1: Sham irradiated control mice

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – G6100	0	0	151	145
C57 – G6155	0.009	0	108	142
C57 – G6101	0.006	0	146	139
C57 – G6154	0	0.006	151	158
CBA – SB70	0.027	0.013	146	146
CBA – SB71	0.058	0	120	172
129S – SB133	0.088	0.022	79	132
129S – SB134	0	0	170	117
BALB/c – Balb1L	0.005	0.019	177	256
BALB/c – Balb1R	0.015	0.035	199	252

Table A.1: Control/sham irradiated mice used for strain dependency chapter of results. Mean values of 53BP1 foci/cell for each region of the lens epithelium, with total number of cells scored for each mouse and region.

Table A.2: Means of four inbred mouse strains exposed to 10 mGy X-radiation

Strain	Time post-exposure (hours)	Central region mean foci/cell	Peripheral region mean foci/cell	Central region standard error	Peripheral region standard error
C57BL/6	1	0.045	0.026	0.014	0.008
C57BL/6	2	0.018	0.017	0.006	0.008
C57BL/6	4	0.035	0.015	0.01	0.008
C57BL/6	24	0.01	0	0.007	0
CBA/Ca	1	0.105	0.01	0.028	0.006
CBA/Ca	2	0.073	0.001	0.03	0.001
CBA/Ca	4	0.079	0.02	0.035	0.004
CBA/Ca	24	0.110	0.003	0.055	0.003
129S2	1	0.116	0.002	0.008	0.003
129S2	2	0.063	0.013	0.053	0.014
129S2	4	0.021	0.005	0.014	0.001
BALB/c	1	0.049	0.067	0.001	0.001
BALB/c	2	0.066	0.049	0.015	0.003
BALB/c	4	0.024	0.026	0.009	0.01
BALB/c	24	0.024	0.013	0.01	0.005

Table A.2: Mean 53BP1 foci/cell in both central and peripheral region LECs 1, 2, 4 and 24 hours post-exposure to 10 mGy IR in four inbred mouse strains.

Table A.3: Means of four inbred mouse strains exposed to 10 mGy X-radiation 1 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 - C5790L	0.023	0.045	173	174
C57 – C5790R	0.069	0.047	188	146
C57 – C5791L	0.099	0.023	181	167
C57 – C5791R	0.04	0.041	175	143
C57 – G6115	0	0	167	149
C57 – G6123	0.04	0	150	140
CBA – SB23	0.156	0.023	147	173
CBA – CBA1	0.059	0.003		
CBA – CBA2	0.102	0.004		
129S – SB120	0.138	NA	144	NA
129S – SB121	0.1006	0.005	159	188
129S – SB122	0.124	0	129	147
BALB/c – Balb2L	0.053	0.066	75	210
BALB/c – Balb2R	0.047	0.069	167	272
BALB/c – Balb3R	0.049	0.066	141	165

Table A.3: Mice exposed to 10mGy X-radiation and sacrificed and analysed 1 hour post-exposure. Number of cells scored in each region are also stated.

Table A.4: Means of four inbred mouse strains exposed to 10 mGy X-radiation 2 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – 92L	0.018	0.037	160	135
C57 – 92R	0.037	0.027	237	182
C57 – G6111	0.007	0.006	139	154
C57 – G6124	0.012	0	166	171
CBA – SB60	0.186	NA	198	NA
CBA – SB61(R)	0.09	0.005	209	
CBA – SB26	0.057	0	174	71
CBA – R18R	0.024	0	124	65
CBA – R18L	0.019	0	157	67
129S – SB123	0.028	0.013	106	149
129S – SB124	0	0	191	151
129S – SB125	0.173	0.029	202	137
BALB/c – 6L	0.038	0.043	180	92
BALB/c – 6R	0.042	0.056	142	160
BALB/c – 7L	0.091	0.045	165	109
BALB/c – 7R	0.095	0.055	94	144

Table A.4: Mean 53BP1 foci/cell in both central and peripheral regions LECs following 10 mGy x-radiation 2 hours post-exposure. Number of cells scored in each region are also stated.

Table A.5: Means of four inbred mouse strains exposed to 10 mGy X-radiation 4 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – 93L	0.023	0.029	173	170
C57 – 93R	0.056	0.018	194	166
C57 - G6125	0.027	0	179	180
CBA – SB63	0.206	0.025	63	157
CBA – SB64	0.104	NA	153	NA
CBA – 4L	0.049	0.005	183	169
CBA – 4R	0.013	0.024	153	124
CBA – R19L	0.025	0.025	154	155
129S – SB126	0.011	0.006	178	162
129S – SB127	0.005	0.005	181	191
129S – SB128	0.05	NA	132	NA
BALB/c – 1	NA	0.0205	NA	146
BALB/c – 2	0.041	0.038	551	411
BALB/c – 3	0.017	0.021	626	279
BALB/c – 4	0.0203	0.023	346	478
BALB/c – 5	0.016	0.0205	648	389
BALB/c - 6	0.025	0.031	436	251

Table A.5: Mean 53 BP1 foci/cell in both central and peripheral region LECs following 10 mGy x-radiation 4 hours post-exposure. Number of cells scored in each region are also stated.

Table A.6: Means of four inbred mouse strains exposed to 10 mGy X-radiation 24 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – G6113	0	0	172	98
C57 – G6117	0.006	0	146	71
C57 – G6121	0.024	0	161	148
CBA – SB66	0.224	NA	178	NA
CBA – SB68	0.194	NA	113	NA
CBA – R20R	0.025	0	159	219
CBA – R20L	0.007	0.006	138	158
BALB/c – 1	0.034	0.022	381	361
BALB/c – 2	0.014	0.009	633	311
BALB/c – 3	0.058	0.011	51	91
BALB/c – 4	0.006	0.025	478	678
BALB/c – 5	0.009	0.004	514	222
BALB/c – 6	0.023	0.005	418	176

Table A.6: Mean 53BP1 foci/cell in both central and peripheral regions LECs following 10 mGy x-radiation 24 hours post-exposure. No 129S2 mice. Number of cells scored in each region are also stated.

Table A.7: Four inbred mouse strains exposed to 25 mGy X-radiation

Strain	Time post-exposure (hours)	Central region mean foci/cell	Peripheral region mean foci/cell	Central region standard error	Peripheral region standard error
C57BL/6	1	0.105625	0.064666667	0.025936693	0.017537895
C57BL/6	2	0.026	0.052	0.013	0.026
C57BL/6	4	0.058142857	0.016333333	0.019976687	0.008815391
C57BL/6	24	0.033636364	0.013	0.00591035	0.003278719
CBA/Ca	1	0.117666667	0.081	0.043739126	0.013053735
CBA/Ca	2	0.1558	0.05975	0.029608107	0.030194853
CBA/Ca	4	0.0662	0.034	0.046426716	0.019460216
CBA/Ca	24	N/A	N/A	N/A	N/A
129S2	1	0.177666667	0.011333333	0.049011337	0.007310571
129S2	2	0.155	0.019	0.035	N/A
129S2	4	0.124	0.0225	0.031240999	0.0225
129S2	24	N/A	N/A	N/A	N/A
BALB/c	1	0.1055	0.1435	0.020192821	0.016997549
BALB/c	2	0.049333333	0.0595	0.010493384	0.014361407
BALB/c	4	0.028582482	0.03604935	0.011668749	0.016121759
BALB/c	24	0.018793533	0.016567149	0.007672428	0.007409054

Table A.7: Mean 53BP1 foci/cell in both central and peripheral region LECs 1, 2, 4 and 24 hours post-exposure to 10 mGy IR in four inbred mouse strains.

Table A.8: Means of four inbred mouse strains exposed to 25 mGy X-radiation 1 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – G6009	0	0.011	98	171
C57 – G6106	0.175	0.131	171	144
C57 – 2R	0.142	N/A	175	N/A
C57 – 2L	0.181	0.070	171	157
C57 – 3R	0.155	N/A	129	N/A
C57 – 3L	0.131	0.056	130	71
C57 – R9R	0.075	0.038	158	103
C57 – R9L	0	0.092	110	195
CBA – SB45	0.241	0.075	207	120
CBA – SB46	0.278	0.042	147	167
CBA – 1L	0.064	0.068	156	58
CBA – 1R	0.039	0.110	152	152
CBA – R10R	0.043	N/A	185	N/A
CBA – R10L	0.053	0.113	167	159
129S – SB108	0.169	0.025	124	160
129S – SB109	0.103	0.009	184	215
129S – SB110	0.274	0	102	158
BALB/c – 4L	0.110	0.094	136	179
BALB/c – 4R	0.085	0.178	200	191
BALB/c – 5L	0.067	0.159	148	213
BALB/c – 5R	0.160	0.147	175	102

Table A.8: Mean 53BP1 foci per cell in mice exposed to 25 mGy X-irradiation 1 hour post-exposure. Number of cells scored in each region are also stated.

Table A.9: Means of four inbred mouse strains exposed to 25 mGy X-radiation 2 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – G6107	0.041	0.078	167	115
C57 – 7	0.008	N/A	119	N/A
C57 – 72	0.040	N/A	162	N/A
C57 – R11R	0.015	0.026	129	187
CBA – 1L	0.049	0.137	201	178
CBA – SB48	0.195	0.005	143	169
CBA – SB49	0.180	0.014	158	142
CBA – R12R	0.140	N/A	129	N/A
CBA – R12L	0.220	0.090	118	177
129S – SB111	0.129	0.045	154	208
129S – SB113	0.190	N/A	113	N/A
BALB/c – 8L	0.029	0.084	137	248
BALB/c – 8R	0.055	0.066	127	299
BALB/c – 9L	0.064	0.070	171	242
BALB/c – 9R	N/A	0.018	N/A	221

Table A.9: Mean 53BP1 foci/cell in mice exposed to 25 mGy X-irradiation 2 hours post-exposure.

Number of cells scored in each region are also stated.

Table A.10: Means of four inbred mouse strains exposed to 25 mGy X-radiation 4 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – G6103	0.013	0.006	222	164
C57 – G6108	N/A	0	N/A	161
C57 – 9L	0.055	0.046	145	215
C57 – 9R	0.021	0.042	93	142
C57 – 10L	0.052	N/A	228	N/A
C57 – 10R	0.065	N/A	198	N/A
C57 – R13R	0.170	0	176	257
C57 – R13L	0.031	0.004	161	219
CBA – 3L	0.086	0.007	115	139
CBA – SB51	0	0.016	128	119
CBA - SB52(r)	0.240	0.107	154	178
CBA – R14R	0.005	0.040	199	196
CBA – R14L	0	0	144	147
129S – SB114	0.121	0.045	140	176
129S – SB115	0.180	0	82	92
129S – SB116	0.072	N/A	162	N/A
BALB/c – 1	0.039	0.042	405	422
BALB/c – 2	0.016	0.009	303	217
BALB/c – 3	0.038	0.028	210	209
BALB/c – 4	0.037	0.051	431	176
BALB/c – 5	0.026	0.057	224	278
BALB/c – 6	0.013	0.027	445	148

Table A.10: Mean 53BP1 foci/cell in mice exposed to 25 mGy X-irradiation 4 hours post-exposure. Number of cells scored in each region are also stated.

Table A.11: Means of four inbred mouse strains exposed to 25 mGy X-radiation 24 hour post-exposure

Strain and mouse ID	Central region mean foci/cell	Peripheral region mean foci/cell	Central region cells scored	Peripheral region cells scored
C57 – G6104	0.036	0	136	147
C57 – G6105	0.021	0.014	139	136
C57 – G6109	0.014	0.012	141	154
C57 – 13L	0.041	N/A	167	N/A
C57 – 13R	0.065	0.017	169	114
C57 – 14L	0.044	0.006	156	159
C57 – 14R	0.032	N/A	153	N/A
C57 – 15L	0.017	0.027	278	219
C57 – 15R	0	0	116	228
C57 – R15R	0.068	0.026	117	113
C57 – R15L	0.048	0.015	124	192
129S – SB117	0.048	0.010	166	186
129S – SB118	0.041	0	146	162
129S – SB119	0.086	N/A	151	N/A
BALB/C – 1	0.022	0.020	179	650
BALB/c – 2	0.018	0	378	46
BALB/c – 3	0.012	0.021	394	901
BALB/c – 4	0.016	N/A	558	N/A
BALB/c – 5	0.008	0.022	225	271
BALB/c – 6	0.034	0.019	117	255

Table A.11: Mean 53BP1 foci/cell in LECs from mice exposed to 25 mGy X-irradiation 24 hours post-exposure. Number of cells scored in each region are also stated.

Appendix B: Dose and dose-rate response of DNA damage and repair in the lens epithelium

Table B.1: Mean 53BP1 foci/cell from peripheral lymphocytes at 24 hours post-exposure.

ID	Dose (Gy)	Dose-rate (Gy/min)	Total cells scored	Mean foci/cell	Standard error
C1	0	Sham	400	0.03	0.01
C2	0	Sham	400	0.02	0.01
A1	0.5	0.3	200	0.40	0.04
A2	0.5	0.3	200	0.38	0.04
A3	0.5	0.3	200	0.36	0.04
B1	0.5	0.063	200	0.24	0.03
B2	0.5	0.063	200	0.29	0.04
B3	0.5	0.063	200	0.30	0.04
1_24h	0.5	0.014	200	0.26	0.04
2_24h	0.5	0.014	200	0.22	0.03
3_24h	0.5	0.014	200	0.21	0.03
A1	1	0.3	200	0.81	0.06
A2	1	0.3	200	0.72	0.06
A3	1	0.3	200	0.79	0.06
B1	1	0.063	200	0.62	0.06
B2	1	0.063	200	0.66	0.06
B3	1	0.063	200	0.65	0.06

Table B.1: Mean 53BP1 foci/cell in the peripheral lymphocytes of C57BL/6 mice 24 hours post exposure to 0.5 and 1 Gy ⁶⁰Co delivered at 0.3, 0.063 and 0.014 Gy/min. Total cells scored and standard error are given.

Table B.2: All mean 53BP1 foci/cell from mice exposed during dose and dose-rate investigations.

Mouse ID	Dose (Gy)	Dose-rate (Gy/min)	Time (hours)	Central region mean foci/cell	Peripheral region mean foci/cell
D4H0.5GY1	0.5	0.063	4	1.706	1.594936709
	0.5	0.063	4	1.758503401	1.463709677
D4H0.5GY2	0.5	0.063	4	1.903225806	1.763608087
	0.5	0.063	4	1.816239316	1.585106383
D4H0.5GY3	0.5	0.063	4	1.844339623	1.418539326
	0.5	0.063	4	1.623824451	1.424572317
D4H0.5GY4	0.5	0.063	4	1.526992288	1.355140187
	0.5	0.063	4	1.485193622	1.309090909
A4H0.5GY1	0.5	0.3	4	1.424929178	1.127753304
	0.5	0.3	4	1.31002331	1.191011236
A4H0.5GY2	0.5	0.3	4	1.469544648	1.193853428
	0.5	0.3	4	1.383194829	1.393728223
A4H0.5GY3	0.5	0.3	4	1.347305389	1.219330855
	0.5	0.3	4	1.385022026	1.107594937
A4H0.5GY4	0.5	0.3	4	1.457076566	1.134770889

	0.5	0.3	4	1.327850877	
A4HControl1	Sham for 0.5	0.3	4	0.040224509	0.042513863
	Sham for 0.5	0.3	4	0.028548771	0.010676157
D4Hcontrol1	Sham for 0.5	0.063	4	0.039240506	0.034883721
	Sham for 0.5	0.063	4	0.037275064	0.046692607
D4Hcontrol2	Sham for 0.5	0.063	4	0.042410714	0.026041667
	Sham for 0.5	0.063	4	0.044554455	0.039387309
A24H0.5GY1	0.5	0.3	24	0.206677266	0.176156584
	0.5	0.3	24	0.26507019	0.18226601
A24H0.5GY2	0.5	0.3	24	0.184713376	0.131782946
	0.5	0.3	24	0.234732824	
A24H0.5GY3	0.5	0.3	24	0.115981119	
	0.5	0.3	24	0.159859977	0.077380952
A24H0.5GY4	0.5	0.3	24	0.175	0.148275862
	0.5	0.3	24	0.180055402	0.154255319
D24H0.5GY2	0.5	0.063	24	0.25975976	0.364140481
	0.5	0.063	24	0.317507418	0.318232044
D24H0.5GY3	0.5	0.063	24	0.314830876	0.302325581
	0.5	0.063	24	0.201754386	0.241735537
D24H0.5GY4	0.5	0.063	24	0.410828025	0.323974082
	0.5	0.063	24	0.360465116	0.290167866
D24HControl1	Sham for 0.5	0.063	24	0.04040404	0.037593985
	Sham for 0.5	0.063	24	0.040564374	0.03373494
D24HControl2	Sham for 0.5	0.063	24	0.062397373	0.028089888
	Sham for 0.5	0.063	24	0.027484144	0.046052632
A24HControl1	Sham for 0.5	0.3	24	0.058577406	0.039397451
	Sham for 0.5	0.3	24	0.036175711	0.031007752
A24HControl2	Sham for 0.5	0.3	24	0.047976012	0.050473186
	Sham for 0.5	0.3	24	0.06097561	0.046413502
B4H1GY1	1	0.3	4	1.418512397	1.431154658
	1	0.3	4	1.627191582	1.3170074
B4H1GY2	1	0.3	4	1.63133159	1.4222619
	1	0.3	4	1.496579494	1.356792996
B4H1GY3	1	0.3	4		1.12012012
	1	0.3	4	1.300925926	1.087179487
B4H1GY4	1	0.3	4	1.006622517	0.521186441
	1	0.3	4	0.931129477	1.353535354
E4H1GY1	1	0.063	4	2.296137339	1.993377483
	1	0.063	4	2.504132231	2.196930946
E4H1GY2	1	0.063	4	2.340501792	2.152119701
	1	0.063	4	2.641891892	2.151162791
E4H1GY3	1	0.063	4	2.684659091	2.08566108
	1	0.063	4	2.245647969	2.253968254
E4H1GY4	1	0.063	4	2.782152231	2.269662921

	1	0.063	4	2.278969957	1.897727273
E4Hcontrol1	Sham for 1	0.063	4	0.025270758	0.032894737
	Sham for 1	0.063	4	0.026252983	0.040650407
E4Hcontrol2	Sham for 1	0.063	4	0.020242915	0.025104603
	Sham for 1	0.063	4	0.010471204	0.035343035
B4HControl1	Sham for 1	0.3	4	0.039215686	0.038321168
	Sham for 1	0.3	4	0.029227557	0.042168675
B4HControl2	Sham for 1	0.3	4	0.058823529	0.053610503
	Sham for 1	0.3	4	0.046092184	0.017721519
B24HControl1	Sham for 1	0.3	24	0.020408163	0.021551724
	Sham for 1	0.3	24	0.045958796	0.081818182
B24HControl2	Sham for 1	0.3	24	0.015267176	0.002380952
	Sham for 1	0.3	24	0.019650655	
B24H1GY1	1	0.3	24	0.167752443	0.177142857
	1	0.3	24	0.099415205	0.106518283
B24H1GY2	1	0.3	24	0.466925047	0.24137931
	1	0.3	24	0.308735755	0.289831357
B24H1GY3	1	0.3	24	0.361240885	0.285237505
	1	0.3	24	0.344129223	0.307017544
B24H1GY4	1	0.3	24	0.248777509	0.20094086
	1	0.3	24	0.290588366	0.312876207
E24HControl1	Sham for 1	0.063	24	0.028645833	0.032315978
	Sham for 1	0.063	24	0.042253521	0.020373514
E24HControl2	Sham for 1	0.063	24	0.041666667	0.036363636
	Sham for 1	0.063	24	0.034188034	0.019230769
E24H1GY1	1	0.063	24	0.341666667	0.339130435
	1	0.063	24	0.325	0.32
E24H1GY2	1	0.063	24	0.349264706	0.432071269
	1	0.063	24	0.421276596	0.403314917
E24H1GY3	1	0.063	24	0.433962264	0.465306122
	1	0.063	24	0.435460993	0.370629371
E24H1GY4	1	0.063	24	0.384072581	0.253521127
	1	0.063	24	0.352941176	0.35483871
C4H2GY1	2	0.3	4	2.803921569	2.427272727
	2	0.3	4	2.574766355	2.34502924
C4H2GY2	2	0.3	4	2.637096774	2.165829146
	2	0.3	4	2.814016173	2.3125
C4H2GY3	2	0.3	4	2.387096774	2.145118734
	2	0.3	4	3.086419753	2.446153846
C4H2GY4	2	0.3	4	2.794871795	2.481481481
	2	0.3	4	3.029411765	2.583577713
C4HControl1	Sham for 2	0.3	4	0.029010239	0.026109661
	Sham for 2	0.3	4	0.029739777	0.045212766
C4HControl2	Sham for 2	0.3	4	0.025518341	0.036608863

	Sham for 2	0.3	4	0.029032258	0.025974026
F4H2GY1	2	0.063	4	4.098865478	3.522193211
	2	0.063	4	3.867256637	3.364516129
F4H2GY2	2	0.063	4	3.579281184	2.919753086
	2	0.063	4	3.783393502	3.147928994
F4H2GY3	2	0.063	4	3.994117647	3.169491525
	2	0.063	4	3.96369637	3.290030211
F4H2GY4	2	0.063	4	4.41503268	3.126436782
	2	0.063	4	4.113970588	3.263513514
F4HControl1	Sham for 2	0.063	4	0.037475345	0.049479167
	Sham for 2	0.063	4	0.034722222	0.034188034
F4HControl2	Sham for 2	0.063	4	0.046997389	0.035202086
	Sham for 2	0.063	4	0.018987342	0.037257824
C4H2GY1	2	0.3	24	0.81030445	0.355677155
	2	0.3	24	0.50779896	0.426048565
C4H2GY2	2	0.3	24	0.444259567	0.455580866
	2	0.3	24	0.526752072	0.36097561
C4H2GY3	2	0.3	24	0.462871287	0.395833333
	2	0.3	24	0.479289941	0.379591837
C4H2GY4	2	0.3	24	0.42384106	0.326829268
	2	0.3	24	0.472527473	0.408064516
F24H2GY1	2	0.063	24	0.892578125	0.706521739
	2	0.063	24	0.781045752	0.825980392
F24H2GY2	2	0.063	24	0.677777778	0.46122449
	2	0.063	24	0.931216931	0.555837563
F24H2GY3	2	0.063	24	0.622372372	0.528265107
	2	0.063	24	0.58224163	0.492333901
F24H2GY4	2	0.063	24	0.745098039	0.577981651
	2	0.063	24	0.890814558	0.742616034
C24HControl1	Sham for 2	0.3	24	0.043613707	0.02866242
	Sham for 2	0.3	24	0.033854167	0.023319616
C24HControl2	Sham for 2	0.3	24	0.032667877	0.033057851
	Sham for 2	0.3	24	0.033033033	0.034870641
F24HControl1	Sham for 2	0.063	24	0.037313433	0.018581081
	Sham for 2	0.063	24	0.025735294	0.034552846
F24HControl2	Sham for 2	0.063	24	0.044481054	0.025957973
	Sham for 2	0.063	24	0.044534413	0.03871577

Table B.2: All female C57BL/6 mice exposed during dose and dose-rate investigations. Mice were exposed to 0.5, 1 or 2 Gy (along with sham exposed mice) at either 0.3 or 0.063 Gy/min and sacrificed at either 4 or 24 hours post-exposure. Mean number of 53BP1 foci/cell were calculated and analysed within both the central and peripheral region of the lens epithelium.

Table B.3: Mean percentage Ki67 positive LECs in mice exposed during dose and dose-rate investigations.

Mouse ID	Dose (Gy)	Dose-rate (Gy/min)	Time (hours)	Central region Ki67 positive cells (%)	Peripheral region Ki67 positive cells (%)
D4H0.5GY1	0.5	0.063	4	0	5.06
	0.5	0.063	4	0.34	6.45
D4H0.5GY2	0.5	0.063	4	0	3.42
	0.5	0.063	4	0	5.31
D4H0.5GY3	0.5	0.063	4	0	4.77
	0.5	0.063	4	0	2.33
D4H0.5GY4	0.5	0.063	4	0	3.73
	0.5	0.063	4	0.22	3.63
A4H0.5GY1	0.5	0.3	4	1.13	0.88
	0.5	0.3	4	2.09	3.37
A4H0.5GY2	0.5	0.3	4	0.23	1.18
	0.5	0.3	4	0	3.13
A4H0.5GY3	0.5	0.3	4	1.34	3.34
	0.5	0.3	4	0.35	3.006
A4H0.5GY4	0.5	0.3	4	0	2.42
	0.5	0.3	4	0.1	
A4HControl1	Sham for 0.5	0.3	4	0.65	3.69
	Sham for 0.5	0.3	4	0.32	5.69
D4Hcontrol1	Sham for 0.5	0.063	4	0.37	5.23
	Sham for 0.5	0.063	4	0	4.86
D4Hcontrol2	Sham for 0.5	0.063	4	0.22	1.6
	Sham for 0.5	0.063	4	0	4.15
A24H0.5GY1	0.5	0.3	24	0.15	4.09
	0.5	0.3	24	0.41	3.44
A24H0.5GY2	0.5	0.3	24	0	3.87
	0.5	0.3	24	0.38	
A24H0.5GY3	0.5	0.3	24	0.87	
	0.5	0.3	24	0.29	2.97
A24H0.5GY4	0.5	0.3	24	0	4.31
	0.5	0.3	24	1.108	7.44
D24H0.5GY2	0.5	0.063	24	0	2.95
	0.5	0.063	24	0.29	4.64
D24H0.5GY3	0.5	0.063	24	0.087	3.48
	0.5	0.063	24	0	4.75
D24H0.5GY4	0.5	0.063	24	0.31	4.1
	0.5	0.063	24	0	5.27
D24HControl1	Sham for 0.5	0.063	24	0	3.5
	Sham for 0.5	0.063	24	0.017	4.57
D24HControl2	Sham for 0.5	0.063	24	0	5.05

	Sham for 0.5	0.063	24	0	3.28
A24HControl1	Sham for 0.5	0.3	24	0	5.91
	Sham for 0.5	0.3	24	1.29	3.1
A24HControl2	Sham for 0.5	0.3	24	1.05	3.47
	Sham for 0.5	0.3	24	0	4.64
B4H1GY1	1	0.3	4	2	6.15
	1	0.3	4	0	1.48
B4H1GY2	1	0.3	4	0	2.06
	1	0.3	4	0.66	1.92
B4H1GY3	1	0.3	4		3.15
	1	0.3	4	0	2.39
B4H1GY4	1	0.3	4	1.32	2.11
	1	0.3	4	0.59	1.51
E4H1GY1	1	0.063	4	0	4.415
	1	0.063	4	0.27	4.09
E4H1GY2	1	0.063	4	0.35	2.99
	1	0.063	4	0	2.47
E4H1GY4	1	0.063	4	0	2.62
	1	0.063	4	0	1.13
E4Hcontrol1	Sham for 1	0.063	4	0.36	4.76
	Sham for 1	0.063	4	0	4.39
E4Hcontrol2	Sham for 1	0.063	4	0	2.51
	Sham for 1	0.063	4	0	2.91
B4HControl1	Sham for 1	0.3	4	0.39	4.015
	Sham for 1	0.3	4	0.42	3.012
B4HControl2	Sham for 1	0.3	4	0.35	4.814
	Sham for 1	0.3	4	0.401	4.56
B24HControl1	Sham for 1	0.3	24	0	3.44
	Sham for 1	0.3	24	0.317	4.54
B24HControl2	Sham for 1	0.3	24	0.38	1.42
	Sham for 1	0.3	24	0.218	
B24H1GY1	1	0.3	24	0.48	3.43
	1	0.3	24	0	1.75
B24H1GY2	1	0.3	24	0.14	2.29
	1	0.3	24	0	4.39
B24H1GY3	1	0.3	24	0	5.24
	1	0.3	24	0.46	1.75
B24H1GY4	1	0.3	24	0	5.31
	1	0.3	24	0.3	2.27
E24HControl1	Sham for 1	0.063	24	0	3.05
	Sham for 1	0.063	24	0.704	4.41
E24H1GY1	1	0.063	24	0	4.34
	1	0.063	24	0	3.11
E24H1GY2	1	0.063	24	0	3.78

	1	0.063	24	0	3.13
E24H1GY3	1	0.063	24	0	3.26
	1	0.063	24	0	4.19
E24H1GY4	1	0.063	24	0	7.04
	1	0.063	24	0	3.49
C4H2GY1	2	0.3	4	0	2.27
	2	0.3	4	0	2.92
C4H2GY2	2	0.3	4	0	3.76
	2	0.3	4	0.26	4.68
C4H2GY3	2	0.3	4	0	3.166
	2	0.3	4	0	3.73
C4H2GY4	2	0.3	4	0.85	3.7
	2	0.3	4	0	4.12
C4HControl1	Sham for 2	0.3	4	0	3.916
	Sham for 2	0.3	4	0.37	6.38
C4HControl2	Sham for 2	0.3	4	0	2.69
	Sham for 2	0.3	4	0.64	3.03
F4H2GY1	2	0.063	4	0.16	2.61
	2	0.063	4	0	3.22
F4H2GY2	2	0.063	4	0	3.08
	2	0.063	4	0	2.95
F4H2GY3	2	0.063	4	0	6.77
	2	0.063	4	0	3.32
F4H2GY4	2	0.063	4	0	3.44
	2	0.063	4	0.36	2.71
F4HControl1	Sham for 2	0.063	4	0	3.91
	Sham for 2	0.063	4	0	3.42
F4HControl2	Sham for 2	0.063	4	0.26	3.91
	Sham for 2	0.063	4	0	3.27
C4H2GY1	2	0.3	24	0	3.42
	2	0.3	24	0	4.26
C4H2GY2	2	0.3	24	0.16	4.55
	2	0.3	24	0.075	2.92
C4H2GY3	2	0.3	24	0	4.16
	2	0.3	24	0	2.85
C4H2GY4	2	0.3	24	0.082	2.11
	2	0.3	24	0	1.61
F24H2GY1	2	0.063	24	0	1.81
	2	0.063	24	0	2.45
F24H2GY2	2	0.063	24	0.079	3.06
	2	0.063	24	0	3.29
F24H2GY3	2	0.063	24	0	2.53
	2	0.063	24	0.14	1.87
F24H2GY4	2	0.063	24	0	1.46

	2	0.063	24	0	2.53
C24HControl1	Sham for 2	0.3	24	0.62	4.29
	Sham for 2	0.3	24	1.04	5.48
C24HControl2	Sham for 2	0.3	24	0	2.47
	Sham for 2	0.3	24	0	4.72
F24HControl1	Sham for 2	0.063	24	0.249	3.04
	Sham for 2	0.063	24	0.368	5.69
F24HControl2	Sham for 2	0.063	24	0	4.57
	Sham for 2	0.063	24	0	2.93

Table B.3: Mean percentage Ki67 positive LECs in mice exposed during dose and dose-rate investigations. Mice were exposed to 0.5, 1 or 2 Gy (along with sham exposed mice) at either 0.3 or 0.063 Gy/min and sacrificed at either 4 or 24 hours post-exposure. Percentage (%) of Ki67 were calculated and analysed within both the central and peripheral region of the lens epithelium.

Appendix C: The effects of IR on LEC proliferation

Table C.1: Mean percentage of Ki67 positive LECs up to 24 hours post-exposure

Time post-exposure (hours)	Region of lens epithelium	Mean Ki67 positive cells (%)	Standard error
0	Central	0.48	0.16
0	Peripheral	4.69	1
0.5	Central	0.24	0.20
0.5	Peripheral	3.31	0.25
4	Central	0.65	0.27
4	Peripheral	2.47	0.39
24	Central	0.40	0.14
24	Peripheral	4.35	0.64

Table C.1: Mean percentage of Ki67 positive LECs in both the central and peripheral region of the lens epithelia 0.5, 4 and 24 hours post-exposure (plus sham-irradiated controls) to 0.5 Gy (0.3 Gy/min ^{60}Co irradiation). Standard error are also given.

Table C.2: Low dose response of Ki67 positive LECs

Mouse ID	Strain	Dose (Gy)	Total LECs central region	Ki67 positive central LECs	Total LECs Peripheral region	Ki67 positive peripheral LECs
1L	BALB/C	Control	63	1	572	21
2L	BALB/C	Control	327	23	350	20
2R	BALB/C	Control	373	25	341	5
3L	BALB/C	Control	122	11	205	11
3R	BALB/C	Control	480	17	246	17
4L	C57BL6	Control	988	16	517	7
4R	C57BL6	Control	913	19	420	3
5R	C57BL6	Control	274	1	234	8
6R	C57BL6	Control	641	22	468	6
6L	C57BL6	Control	453	6	39	2
5L	C57BL6	Control	228	4	151	7
10mGy 24 hour 1	C57BL6	10	836	3	338	8
10mGy 24 hour 2	C57BL6	10	700	4	254	4
10mGy 24hr 3	C57BL6	10	2550	4	130	1
10mGy 24hr 4	C57BL6	10	754	2	364	14
10mGy 24hr 5	C57BL6	10	1408	6	44	1
10mGy 24hr 6	C57BL6	10	729	9	754	19
10mGy 24hr 7	C57BL6	10	2000	5	252	6
10mGy 24hr 8	C57BL6	10	546	9	397	0
10mGy 24hr 1	BALB/C	10	912	5	808	16
10mGy 24hr 2	BALB/C	10	1017	3	277	6
10mGy 24hr 3	BALB/C	10	746	5	202	5
10mGy 24hr 4	BALB/C	10	503	3	705	16

10mGy 24hr 5	BALB/C	10	558	2	1194	30
10mGy 24hr 6	BALB/C	10	683	5	754	19
19L	BALB/C	25	422	0		
19R	BALB/C	25	330	0	350	1
20L	BALB/C	25	636	2	175	2
20R	BALB/C	25	529	9	754	11
21L	BALB/C	25	168	0	40	1
21R	BALB/C	25	640	3	547	16
22L	C57BL6	25	84	1	100	3
22R	C57BL6	25	1328	9	550	5
23L	C57BL6	25	783	9	389	3
23R	C57BL6	25	954	0		
24L	C57BL6	25	820	0	320	0
24R	C57BL6	25	582	3	444	6
13L	C57BL6	50	1330	42	90	1
13R	C57BL6	50	933	2	258	15
14L	C57BL6	50	1060	0		
14R	C57BL6	50	901	2	260	9
15L	C57BL6	50	404	7	200	11
15R	C57BL6	50	2180	14	71	0
16L	BALB/C	50	714	10	363	13
16R	BALB/C	50	785	11	237	7
17L	BALB/C	50	658	18	268	6
17R	BALB/C	50	112	0	497	17
18L	BALB/C	50	869	18	100	6
18R	BALB/C	50	714	17	304	8
8R	BALB/C	100	370	21	200	13
9R	BALB/C	100	284	0	383	2
7L	BALB/C	100	171	5	490	21
7R	BALB/C	100	431	10	330	15
9L	BALB/C	100	75	0	292	4
10L	C57BL6	100	228	3	370	17
10R	C57BL6	100	387	0	0	0
11L	C57BL6	100	280	1	190	3
11R	C57BL6	100	660	13	0	0
12L	C57BL6	100	240	7		
12R	C57BL6	100	304	5	206	3
25L	C57BL6	1000	423	12	220	5
25R	C57BL6	1000	1182	10	230	11
26L	C57BL6	1000	484	0	81	0
26R	C57BL6	1000	1000	0	60	1
27L	C57BL6	1000	195	0		
27R	C57BL6	1000	1030	12	620	15
1	BALB/C	1000	739	2	110	2

2	BALB/C	1000	372	1	510	9
3	BALB/C	1000	375	6	207	1
4	BALB/C	1000	292	4	105	4
5	BALB/C	1000	225	4	875	31
6	BALB/C	1000	834	23	30	2

Table C.2: Low dose x-radiation exposed lenses analysed for Ki67 positive LECs from the lens epithelia of two strains of mice exposed to 10, 25, 50, 100 and 1000 mGy analysed 24 hours post-exposure.

Table C.3: Non-normalised mean Ki67 positive LECs 24 hours post-exposure

Strain	Dose (mGy)	Region of lens epithelium	Mean % Ki67 positive LEC	Standard error
C57BL/6	0	Central	0.83	0.11
C57BL/6	10	Central	0.61	0.19
C57BL/6	25	Central	0.59	0.21
C57BL/6	50	Central	0.99	0.50
C57BL/6	100	Central	1.36	0.44
C57BL/6	1000	Central	0.81	0.45
C57BL/6	0	Peripheral	1.76	0.33
C57BL/6	10	Peripheral	1.96	0.42
C57BL/6	25	Peripheral	1.20	0.50
C57BL/6	50	Peripheral	3.18	1.16
C57BL/6	100	Peripheral	2.54	1.03
C57BL/6	1000	Peripheral	2.22	0.77
BALB/c	0	Central	0.61	0.17
BALB/c	10	Central	0.53	0.07
BALB/c	25	Central	0.41	0.27
BALB/c	50	Central	1.66	0.40
BALB/c	100	Central	2.18	1.05
BALB/c	1000	Central	1.34	0.39
BALB/c	0	Peripheral	2.55	0.76
BALB/c	10	Peripheral	2.32	0.09
BALB/c	25	Peripheral	1.66	0.48
BALB/c	50	Peripheral	3.47	0.55
BALB/c	100	Peripheral	3.44	1.10
BALB/c	1000	Peripheral	3.01	0.89

Table C.3: Non-normalised mean Ki67 positive LECs 24 hours post exposure to 10, 25, 50, 100 and 1000 mGy x-radiation. Standard error are given.

Table C.4: Normalised mean Ki67 positive LECs exposed 24 hours post-exposure

Strain	Dose (mGy)	Region of lens epithelium	Mean % Ki67 positive LEC	Standard error
C57BL/6	0	Central	0.83	N/A
C57BL/6	10	Central	-0.22	0.22
C57BL/6	25	Central	-0.24	0.24
C57BL/6	50	Central	0.16	0.51
C57BL/6	100	Central	0.53	0.45
C57BL/6	1000	Central	-0.03	0.47
C57BL/6	0	Peripheral	1.76	N/A
C57BL/6	10	Peripheral	0.21	0.53
C57BL/6	25	Peripheral	-0.55	0.60
C57BL/6	50	Peripheral	1.42	1.20
C57BL/6	100	Peripheral	0.78	1.08
C57BL/6	1000	Peripheral	0.47	0.84
BALB/c	0	Central	0.61	N/A
BALB/c	10	Central	-0.08	0.19
BALB/c	25	Central	-0.20	0.32
BALB/c	50	Central	1.05	0.43
BALB/c	100	Central	1.57	1.07
BALB/c	1000	Central	0.72	0.43
BALB/c	0	Peripheral	2.55	N/A
BALB/c	10	Peripheral	-0.23	0.76
BALB/c	25	Peripheral	-0.88	0.90
BALB/c	50	Peripheral	0.92	0.93
BALB/c	100	Peripheral	0.89	1.33
BALB/c	1000	Peripheral	0.46	1.17

Table C.4: Normalised mean Ki67 positive percentage of LECs exposed to 10, 25, 50, 100 and 1000 mGy x-radiation 24 hours post-exposure. Standard error are also given

Table C.5: Mean percentage of Ki67 positive LECs exposed to two dose-rates

Time post-exposure (hours)	Dose (Gy)	Dose-rate (Gy/min)	Region of the lens epithelium	Mean Ki67 % positive LECs	Standard error	Mean Ki67 % positive LECs (control)	Standard error (control)
4	0.5	0.3	Central	0.66	0.27	0.49	0.17
4	1	0.3	Central	0.65	0.29	0.39	0.01
4	2	0.3	Central	0.14	0.11	0.25	0.16
4	0.5	0.063	Central	0.07	0.05	0.15	0.09
4	1	0.063	Central	0.10	0.07	0.23	0.09
4	2	0.063	Central	0.07	0.07	0.07	0.07
24	0.5	0.3	Central	0.40	0.14	0.59	0.34
24	1	0.3	Central	0.17	0.07	0.09	0.08
24	2	0.3	Central	0.04	0.02	0.42	0.25
24	0.5	0.063	Central	0.11	0.06	0.00	0.00
24	1	0.063	Central	0.00	0.00	0.35	0.35
24	2	0.063	Central	0.03	0.02	0.15	0.09
4	0.5	0.3	Peripheral	2.48	0.39	4.69	1.00
4	1	0.3	Peripheral	2.60	0.54	4.10	0.40
4	2	0.3	Peripheral	3.54	0.26	4.00	0.83
4	0.5	0.063	Peripheral	4.34	0.46	3.96	0.82
4	1	0.063	Peripheral	2.95	0.49	3.13	0.55
4	2	0.063	Peripheral	3.51	0.67	3.63	0.17
24	0.5	0.3	Peripheral	4.35	0.65	4.28	0.63
24	1	0.3	Peripheral	3.30	0.53	3.64	0.91
24	2	0.3	Peripheral	3.24	0.37	4.24	0.64
24	0.5	0.063	Peripheral	4.20	0.35	4.10	0.42
24	1	0.063	Peripheral	4.04	0.46	3.73	0.68
24	2	0.063	Peripheral	2.38	0.22	4.06	0.66

Table C.5: LDLensRad data: Mean percentage of Ki67 positive LECs exposed to 0.5, 1 and 2 Gy at dose-rates of 0.3 and 0.063 Gy/min 4 and 24 hours post exposure to ^{60}Co radiation

Table C.6: Mean Ki67 percentage of LECs in all variables

Time (hours)	Dose (Gy)	Dose-rate Gy/min)	Central region Ki67 positive LEC (%)	Central region SE (%)	Peripheral region Ki67 positive LEC (%)	Peripheral region SE (%)
4	0.5	0.3	0.655	0.273	2.475	0.392
4	Sham	0.3	0.485	0.165	4.69	1
4	0.5	0.063	0.07	0.047	4.337	0.46
4	Sham	0.063	0.147	0.09	3.96	0.817
24	0.5	0.3	0.401	0.141	4.353	0.647
24	Sham	0.3	0.585	0.341	4.28	0.634
24	0.5	0.063	0.114	0.06	4.198	0.352
24	Sham	0.063	0.004	0.004	4.1	0.423
4	1	0.3	0.652	0.29	2.596	0.54
4	Sham	0.3	0.39	0.014	4.1	0.399
4	1	0.063	0.103	0.066	2.952	0.486
4	Sham	0.063	0.09	0.09	3.642	0.549
24	1	0.3	0.172	0.074	3.303	0.532
24	Sham	0.3	0.228	0.083	3.133	0.913
24	1	0.063	0	0	4.042	0.458
24	Sham	0.063	0.352	0.352	3.73	0.68
4	2	0.3	0.14	0.106	3.54	0.263
4	Sham	0.3	0.252	0.155	4.004	0.833
4	2	0.063	0.065	0.065	3.512	0.673
4	Sham	0.063	0.065	0.065	3.627	0.165
24	2	0.3	0.039	0.021	3.235	0.373
24	Sham	0.3	0.415	0.254	4.24	0.639
24	2	0.063	0.027	0.018	2.375	0.222
24	Sham	0.063	0.154	0.092	4.057	0.66

Table .6: Mean percentage (%) of Ki67 positive LEC in both the central and peripheral region of the lens epithelium of female C57Bl/6 mice exposed to 0.5, 1 and 2 Gy Co-60 IR delivered at 0.3 and 0.063 Gy/min (plus sham irradiated controls). Mice were sacrificed at 4 or 24 hours post-exposure.

Table C.7: All lenses analysed at 4 and 24 hours post-exposure

ID	Time post-exposure	Dose-rate (Gy/min)	Dose (Gy)	Total cells in central region	Central Ki67 positive	Total cells in peripheral region	Peripheral Ki67 positive
4h1A	4	0.014	0.5	89	0	548	14
4h1B	4	0.014	0.5	512	0	424	9
4h2A	4	0.014	0.5	262	0	249	5
4h2B	4	0.014	0.5	328	0	336	11
4h3A	4	0.014	0.5	329	0	146	2
4h3B	4	0.014	0.5	227	1	140	3
24h1A	24	0.014	0.5	455	0	285	16
24h1B	24	0.014	0.5			471	19
24h2A	24	0.014	0.5	229	2	295	15
24h2B	24	0.014	0.5	352	0	332	11
24h3A	24	0.014	0.5	206	0	463	16
24h3B	24	0.014	0.5	631	0	180	4
D4H0.5GY1A	4	0.063	0.5	500	0	79	4
D4H0.5GY1B	4	0.063	0.5	294	1	248	16
D4H0.5GY2A	4	0.063	0.5	217	0	643	22
D4H0.5GY2B	4	0.063	0.5	468	0	188	10
D4H0.5GY3A	4	0.063	0.5	424	0	356	17
D4H0.5GY3B	4	0.063	0.5	319	0	643	15
D4H0.5GY4A	4	0.063	0.5	389	0	107	4
D4H0.5GY4B	4	0.063	0.5	439	1	55	2
D4HCONTROL1A	4	0.063	N/A	790	3	172	9
D4HCONTROL1B	4	0.063	N/A	778	0	514	25
D4HCONTROL2A	4	0.063	N/A	448	1	192	8
D4HCONTROL2B	4	0.063	N/A	202	0	457	19
D24H0.5GY1A	24	0.063	0.5	1332	0	541	16
D24H0.5GY1B	24	0.063	0.5	674	2	905	42
D24H0.5GY3A	24	0.063	0.5	1153	1	86	3
D24H0.5GY3B	24	0.063	0.5	114	0	484	23
D24H0.5GY4A	24	0.063	0.5	314	1	463	19
D24H0.5GY4B	24	0.063	0.5	860	0	417	22
D24HCONTROL1A	24	0.063	N/A	297	0	798	28
D24HCONTROL1B	24	0.063	N/A	567	1	415	19
D24HCONTROL2A	24	0.063	N/A	609	0	178	9
D24HCONTROL2B	24	0.063	N/A	473	0	152	5
A4H0.5GY1A	4	0.3	0.5	353	4	227	2
A4H0.5GY1B	4	0.3	0.5	429	9	89	3
A4H0.5GY2A	4	0.3	0.5	1691	4	423	6
A4H0.5GY2B	4	0.3	0.5	1083	0	287	9
A4H0.5GY3A	4	0.3	0.5	668	9	269	9
A4H0.5GY3B	4	0.3	0.5	1135	4	632	19

A4H0.5GY4A	4	0.3	0.5	431	0	371	9
A4H0.5GY4B	4	0.3	0.5	912	1		
A4HCONTROL1A	4	0.3	N/A	1069	7	541	20
A4HCONTROL1B	4	0.3	N/A	1261	4	281	16
A24H0.5GY1A	24	0.3	0.5	629	1	562	23
A24H0.5GY1B	24	0.3	0.5	1211	5	203	7
A24H0.5GY2A	24	0.3	0.5	785	0	129	5
A24H0.5GY2B	24	0.3	0.5	1048	4		
A24H0.5GY3A	24	0.3	0.5	1483	13		
A24H0.5GY3B	24	0.3	0.5	1714	5	168	5
A24H0.5GY4A	24	0.3	0.5	160	0	580	20
A24H0.5GY4B	24	0.3	0.5	722	8	376	28
A24HCONTROL1A	24	0.3	N/A	239	0	863	51
A24HCONTROL1B	24	0.3	N/A	387	5	129	4
A24HCONTROL2A	24	0.3	N/A	667	7	317	11
A24HCONTROL2B	24	0.3	N/A	82	0	237	11
E4H1GY1A	4	0.063	1	233	0	453	20
E4H1GY1B	4	0.063	1	363	1	391	16
E4H1GY2A	4	0.063	1	279	1	401	12
E4H1GY2B	4	0.063	1	148	0	688	17
E4H1GY4A	4	0.063	1	381	0	267	7
E4H1GY4B	4	0.063	1	466	0	88	1
E4HCONTROL1A	4	0.063	N/A	277	1	608	29
E4HCONTROL1B	4	0.063	N/A	419	0	615	27
E4HCONTROL2A	4	0.063	N/A	247	0	239	6
E4HCONTROL2B	4	0.063	N/A	191	0	481	14
E24H1GY1A	24	0.063	1	360	0	460	20
E24H1GY1B	24	0.063	1	80	0	225	7
E24H1GY2A	24	0.063	1	544	0	898	34
E24H1GY2B	24	0.063	1	470	0	543	17
E24H1GY3A	24	0.063	1	212	0	490	16
E24H1GY3B	24	0.063	1	705	0	429	18
E24H1GY4A	24	0.063	1	992	0	71	5
E24H1GY4B	24	0.063	1	68	0	372	13
E24HCONTROL1A	24	0.063	N/A	768	0	557	17
E24HCONTROL1B	24	0.063	N/A	142	1	589	26
B4H1GY1A	4	0.3	1	196	3	479	22
B4H1GY1B	4	0.3	1	201	0	336	6
B4H1GY2A	4	0.3	1	493	0	365	8
B4H1GY2B	4	0.3	1	251	1	558	12
B4H1GY3A	4	0.3	1			666	21
B4H1GY3B	4	0.3	1	216	0	585	14
B4H1GY4A	4	0.3	1	302	4	236	5
B4H1GY4B	4	0.3	1	363	2	198	3

B4HCONTROL1A	4	0.3	N/A	255	1	548	22
B4HCONTROL1B	4	0.3	N/A	479	2	498	15
B4HCONTROL2A	4	0.3	N/A	289	1	914	44
B4HCONTROL2B	4	0.3	N/A	499	2	395	18
B24H1GY1A	24	0.3	1	614	3	350	12
B24H1GY1B	24	0.3	1	513	0	629	11
B24H1GY2A	24	0.3	1	696	6	87	2
B24H1GY2B	24	0.3	1	707	0	323	14
B24H1GY3A	24	0.3	1	266	0	728	44
B24H1GY3B	24	0.3	1	556	2	114	2
B24H1GY4A	24	0.3	1	643	0	55	3
B24H1GY4B	24	0.3	1	423	1	567	16
B24HCONTROL1A	24	0.3	N/A	294	0	232	8
B24HCONTROL1B	24	0.3	N/A	631	2	110	5
B24HCONTROL2A	24	0.3	N/A	524	2	420	6
B24HCONTROL2B	24	0.3	N/A	916	2		
F4H2GY1A	4	0.063	2	617	1	383	10
F4H2GY1B	4	0.063	2	452	0	310	10
F4H2GY2A	4	0.063	2	473	0	162	5
F4H2GY2B	4	0.063	2	554	0	169	5
F4H2GY3A	4	0.063	2	340	0	177	12
F4H2GY3B	4	0.063	2	303	0	392	11
F4H2GY4A	4	0.063	2	306	0	435	17
F4H2GY4B	4	0.063	2	272	1	444	12
F4HCONTROL1A	4	0.063	N/A	507	0	384	15
F4HCONTROL1B	4	0.063	N/A	432	0	234	8
F4HCONTROL2A	4	0.063	N/A	383	1	767	30
F4HCONTROL2B	4	0.063	N/A	158	0	671	22
F24H2GY1A	24	0.063	2	512	0	276	5
F24H2GY1B	24	0.063	2	612	0	408	10
F24H2GY2A	24	0.063	2	1260	1	490	15
F24H2GY2B	24	0.063	2	378	0	394	13
F24H2GY3A	24	0.063	2	1332	0	513	13
F24H2GY3B	24	0.063	2	687	1	587	11
F24H2GY4A	24	0.063	2	459	0	545	8
F24H2GY4B	24	0.063	2	577	0	474	12
F24HCONTROL1A	24	0.063	N/A	402	1	592	18
F24HCONTROL1B	24	0.063	N/A	272	1	492	28
F24HCONTROL2A	24	0.063	N/A	607	0	809	37
F24HCONTROL2B	24	0.063	N/A	494	0	1059	31
C4H2GY1A	4	0.3	2	612	0	220	5
C4H2GY1B	4	0.3	2	214	0	171	5
C4H2GY2A	4	0.3	2	124	0	398	15
C4H2GY2B	4	0.3	2	371	1	192	9

C4H2GY3A	4	0.3	2	403	0	379	12
C4H2GY3B	4	0.3	2	81	0	455	17
C4H2GY4A	4	0.3	2	117	1	243	9
C4H2GY4B	4	0.3	2	136	0	341	14
C4HCONTROL1A	4	0.3	N/A	586	0	766	30
C4HCONTROL1B	4	0.3	N/A	269	1	376	24
C4HCONTROL2A	4	0.3	N/A	627	0	519	14
C4HCONTROL2B	4	0.3	N/A	310	2	231	7
C24H2GY1A	24	0.3	2	427	0	731	25
C24H2GY1B	24	0.3	2	577	0	453	12
C24H2GY2A	24	0.3	2	601	1	439	20
C24H2GY2B	24	0.3	2	1327	1	205	6
C24H2GY3A	24	0.3	2	404	0	240	10
C24H2GY3B	24	0.3	2	169	0	245	7
C24H2GY4A	24	0.3	2	1208	1	615	13
C24H2GY4B	24	0.3	2	182	0	620	10
C24HCONTROL1A	24	0.3	N/A	321	2	628	27
C24HCONTROL1B	24	0.3	N/A	384	4	729	40
C24HCONTROL2A	24	0.3	N/A	551	0	121	3
C24HCONTROL2B	24	0.3	N/A	333	0	889	42

Table C.7: LDLensRad data: All lenses analysed at 4 and 24 hours post-exposure following exposure to 0.5, 1 and 2 Gy delivered at dose-rates of 0.014, 0.063 and 0.3 Gy/min ⁶⁰Co radiation.

Appendix D: Lifespan imaging of the lens

Table D.1: Scheimpflug imaging data from C57BL/6 mice exposed to 0.5 Gy at 0.3 Gy/min (L = Left eye, R = right eye)

0.5 Gy at 0.3 Gy/min									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Mean	Max	Min	Std dev
1	1	4.9	6.7	4.3	0.7	4.9	7.8	3.9	0.9
	2	4.8	7.1	3.1	0.6	5.6	8.2	3.9	1.4
	3	5.3	6.3	4.7	0.6	5.0	7.1	3.9	0.5
	4	4.4	7.1	3.5	0.7	5.6	9.8	5.1	0.6
	5					5.5	7.1	4.7	0.4
	6	4.9	7.8	4.3	0.7	5.0	7.1	3.9	0.6
	7	4.9	9.0	3.9	1.0	5.0	6.3	4.3	0.6
	8	4.6	7.8	3.1	1.0	4.8	7.1	3.9	0.7
	9	5.6	7.1	3.9	1.0	5.3	7.1	4.7	0.5
	10	5.1	7.8	3.9	0.8	5.4	7.5	3.9	0.5
	Average	4.94	7.41	3.86		5.21	7.51	4.22	
	SE	0.12	0.26	0.18		0.10	0.30	0.14	
	Av L+R	5.08	7.46	4.05	0.73				
SE	0.08	0.20	0.12						
2	1	4.8	6.3	4.3	0.3	6.0	9.0	4.7	1.4
	2	4.8	6.7	4.3	0.4	5.3	8.2	3.9	0.8
	3	4.2	7.5	3.1	0.8	4.5	7.1	3.1	0.7
	4	4.6	7.5	3.1	0.8	5.4	7.8	4.7	0.6
	5	4.9	7.1	4.7	0.5	5.2	7.8	4.3	0.6
	6	4.6	6.7	3.9	0.5	5.1	8.2	3.9	1.0
	7	4.5	7.5	3.6	0.7	5.5	7.8	3.9	0.8
	8	4.7	7.1	3.9	0.6	5.4	8.2	4.3	1.0
	9	4.8	7.1	3.9	0.6	5.7	7.5	4.7	0.6
	10	4.8	7.1	3.9	0.6	5.3	7.8	3.9	0.8
	Average	4.67	7.06	3.87		5.34	7.94	4.14	
	SE	0.07	0.13	0.16		0.12	0.16	0.16	
	Av L+R	5.01	7.50	4.01	0.71				
SE	0.10	0.14	0.11						
3	1	4.8	8.2	3.9	1.0	5.1	7.5	4.3	0.7
	2	6.3	9.0	5.1	1.1				
	3	4.5	7.1	3.9	0.7	5.8	10.2	4.7	1.1
	4	4.5	7.1	3.9	0.6	5.0	7.5	4.3	0.7
	5	5.8	10.2	4.3	1.2	4.5	6.7	3.9	0.7
	6	4.8	7.8	3.9	0.7	5.7	8.2	4.3	0.7
	7	4.9	7.5	4.3	0.7	5.4	7.5	3.5	1.1
	8	4.8	7.5	3.9	0.6	5.3	6.7	4.3	0.4

	9	5.4	8.2	4.7	0.9	5.4	7.1	3.9	0.5
	10	5.0	7.5	4.3	0.6	5.2	7.8	3.1	1.0
	Average	5.08	8.01	4.22		5.27	7.69	4.03	
	SE	0.18	0.30	0.13		0.13	0.35	0.16	
	Av L+R	5.17	7.86	4.13					
	SE	0.11	0.23	0.10					
4	1	5.3	7.0	4.3	0.6	5.1	7.1	3.9	0.9
	2	5.5	7.8	4.7	0.7	5.3	7.5	4.7	0.7
	3	4.6	7.5	3.5	0.6	5.2	8.2	4.7	0.8
	4	5.4	7.8	4.7	0.5	5.2	7.8	4.7	0.7
	5	4.8	7.1	3.9	0.5	5.7	7.8	4.7	0.6
	6	5.5	8.2	3.9	0.7	5.3	7.1	3.9	0.6
	7	5.2	7.5	4.7	0.5	5.5	8.2	4.3	0.8
	8	4.8	7.5	3.9	0.8	5.0	7.1	4.3	0.5
	9	4.7	7.1	3.9	0.8	5.0	7.1	3.9	0.6
	10	4.6	6.7	3.5	0.6	5.0	7.1	3.9	0.6
	Average	5.04	7.42	4.10		5.23	7.50	4.30	
	SE	0.12	0.14	0.15		0.07	0.15	0.12	
	Av L+R	5.14	7.46	4.20					
	SE	0.07	0.10	0.10					
5	1	5.8	9.0	4.7	1.2	4.6	6.3	3.9	0.4
	2	5.0	7.5	3.9	0.6	5.5	7.8	4.3	0.8
	3	4.9	7.5	4.3	0.5	4.9	7.1	4.3	0.5
	4	4.9	7.8	4.3	0.6	5.6	7.8	5.1	0.5
	5	5.6	8.2	4.7	0.7				
	6	5.3	7.1	4.7	0.5	5.6	7.8	4.7	0.6
	7	4.9	7.5	3.9	0.9	5.5	7.1	4.7	0.6
	8	6.1	8.6	5.5	0.7	4.9	7.5	3.9	0.7
	9	4.9	7.5	4.7	0.5	5.3	7.5	4.7	0.6
	10	4.8	6.3	4.3	0.3	5.0	7.8	4.3	0.6
	Average	5.22	7.70	4.50		5.21	7.41	4.43	
	SE	0.15	0.24	0.15		0.12	0.17	0.13	
	Av L+R	5.22	7.56	4.47					
	SE	0.09	0.15	0.10					
6	1	4.7	8.2	3.9	0.9	5.6	9.0	4.7	1.0
	2	4.4	7.8	3.9	0.9	5.7	8.2	4.7	0.6
	3	5.1	7.1	3.9	0.7	5.1	7.8	4.7	0.6
	4	6.4	9.8	5.1	0.8	5.6	9.4	4.3	1.0
	5	5.0	7.5	4.7	0.5	4.6	6.7	3.9	0.5
	6	4.8	7.1	4.3	0.4	5.6	9.0	4.3	0.8
	7	4.9	7.5	4.3	0.7	5.7	8.6	5.1	0.7
	8	4.8	7.1	3.9	0.5	5.9	8.6	4.3	0.8
	9	5.0	7.5	4.7	0.6	5.3	8.2	4.7	0.6
	10	5.0	6.3	4.3	0.5	5.7	8.6	5.1	0.6

	Average	5.01	7.59	4.30		5.48	8.41	4.58		
	SE	0.17	0.29	0.13		0.12	0.24	0.12		
	Av L+R	5.25	8.00	4.44						
	SE	0.11	0.21	0.09						
7	1	5.7	8.6	5.1	0.6	5.2	7.8	4.3	0.7	
	2	5.2	7.5	4.3	0.7	4.6	6.7	3.9	0.6	
	3	4.9	7.1	3.9	0.5	6.3	8.6	5.5	0.7	
	4	5.3	8.6	4.3	0.8	5.8	8.6	5.1	0.7	
	5	4.9	7.5	4.3	0.5	5.2	6.7	4.7	0.5	
	6	5.0	7.1	4.3	0.5	5.8	9.0	3.5	1.0	
	7	5.0	7.1	3.9	0.6	5.5	7.8	4.7	0.7	
	8	4.9	7.1	3.9	0.7	5.8	7.8	4.7	0.8	
	9	5.5	7.5	4.3	0.6	6.1	8.2	5.1	0.8	
	10	5.7	8.2	5.1	0.6	5.3	7.8	3.5	0.9	
		Average	5.21	7.63	4.34		5.56	7.90	4.50	
		SE	0.10	0.19	0.14		0.16	0.24	0.22	
		Av L+R	5.39	7.77	4.42					
		SE	0.10	0.15	0.13					
8	1	5.5	8.2	4.7	0.7	5.3	7.1	4.7	0.5	
	2	5.3	7.1	4.7	0.4	5.6	7.8	4.7	0.5	
	3	6.3	9.0	5.1	1.0	5.7	7.8	3.9	0.9	
	4	6.4	8.2	5.5	0.7	5.4	9.0	4.3	0.9	
	5	5.4	7.1	4.7	0.5	5.6	8.2	3.9	0.8	
	6	5.3	7.5	4.7	0.7	5.7	7.8	4.7	0.6	
	7	5.4	8.2	4.7	0.8	5.2	7.8	4.7	0.7	
	8	5.5	7.1	4.7	0.5	5.5	7.8	4.7	0.8	
	9	5.9	8.2	4.7	0.5	5.5	7.8	4.7	0.7	
	10	5.5	7.8	4.7	0.7	5.2	7.8	4.7	0.6	
		Average	5.65	7.84	4.82		5.47	7.89	4.50	
		SE	0.13	0.20	0.09		0.06	0.15	0.11	
		Av L+R	5.56	7.87	4.66					
		SE	0.32	0.55	0.34					
9	1	5.5	7.5	4.7	0.6	5.8	7.1	5.5	0.4	
	2	5.9	7.8	5.1	0.6	5.3	7.5	4.7	0.7	
	3	5.7	8.2	3.5	1.1	5.1	7.8	3.5	0.8	
	4	5.5	7.5	4.7	0.7	5.1	7.8	4.7	0.7	
	5	4.9	7.1	4.3	0.5	5.9	7.8	5.1	0.6	
	6	5.2	7.5	4.3	0.6	5.4	7.1	4.7	0.5	
	7	5.5	7.1	3.9	0.5	5.5	7.1	4.7	0.6	
	8	5.4	7.1	4.3	0.4	5.1	7.1	3.9	0.7	
	9	5.0	7.1	4.3	0.6	5.6	7.1	4.3	0.6	
	10	5.3	9.8	4.3	1.2	6.4	9.4	5.1	0.8	
		Average	5.39	7.67	4.34		5.52	7.58	4.62	
		SE	0.10	0.26	0.14		0.13	0.23	0.19	

	Av L+R	5.46	7.63	4.48	0.66				
	SE	0.08	0.17	0.12					
10	1	5.8	7.8	5.5	0.5	5.5	7.1	4.7	0.5
	2	5.1	7.5	4.3	0.6	6.0	9.0	5.5	0.9
	3	5.8	7.5	5.1	0.5	5.1	7.1	3.1	0.6
	4	5.7	7.8	4.7	0.7	6.4	10.6	4.7	1.1
	5	4.9	7.1	4.3	0.6	5.6	7.8	4.7	0.6
	6	5.6	7.8	4.7	0.6	6.7	13.3	5.5	1.2
	7	5.3	7.5	4.7	0.6	6.4	9.0	5.1	1.0
	8	5.5	11.0	3.9	1.5	6.1	7.8	4.3	1.0
	9					5.7	7.5	4.7	0.7
	10	5.8	9.0	4.7	1.2	6.0	7.8	5.1	0.6
	Average	5.50	8.11	4.66		5.95	8.70	4.74	
	SE	0.11	0.40	0.16		0.15	0.61	0.22	
	Av L+R	5.74	8.42	4.70	0.79				
	SE	0.11	0.37	0.13					
11	1	6.1	7.8	5.1	0.6	6.8	9.4	5.5	0.8
	2	6.3	7.8	5.5	0.7	6.4	8.6	4.3	1.0
	3	6.7	8.6	5.9	0.5	6.2	9.8	4.7	0.9
	4	6.0	7.8	4.7	0.6	5.4	9.0	3.5	1.5
	5	5.6	7.5	4.7	0.4	5.8	7.1	4.7	0.7
	6	5.6	7.5	4.7	0.6	5.8	7.8	4.7	0.6
	7	6.6	8.6	5.1	0.8	5.5	7.1	4.7	0.5
	8	5.7	7.8	5.1	0.5	5.1	6.7	3.9	0.6
	9	6.5	7.8	5.5	0.6	6.8	10.2	5.1	1.1
	10	6.4	8.2	5.5	0.6	6.3	9.0	5.5	0.6
	Average	6.15	7.94	5.18		6.01	8.47	4.66	
	SE	0.13	0.13	0.13		0.18	0.39	0.20	
	Av L+R	6.08	8.21	4.92					
	SE	0.11	0.21	0.13					
12	1	5.1	7.5	4.3	0.6	6.2	9.0	4.7	1.0
	2	5.7	7.5	4.7	0.5	6.4	8.2	5.5	0.6
	3	5.9	10.2	4.7	1.4	5.7	8.2	4.7	0.7
	4	6.1	8.6	5.1	0.8	6.6	11.0	4.3	1.2
	5	5.8	7.5	5.1	0.5	6.5	9.4	4.7	1.2
	6	5.3	7.5	4.7	0.7	6.7	9.4	5.1	0.8
	7	7.0	9.0	5.5	1.1	6.5	8.2	5.5	0.8
	8	5.4	7.5	4.7	0.8	6.9	10.2	3.9	1.5
	9	7.0	9.0	5.5	0.9	6.3	8.2	4.7	1.1
	10	5.3	7.8	4.7	0.6	6.3	7.8	3.5	0.9
	Average	5.86	8.21	4.90		6.41	8.96	4.66	
	SE	0.21	0.30	0.12		0.10	0.33	0.20	
	Av L+R	6.14	8.59	4.78					
	SE	0.13	0.23	0.12					

13	1	6.3	8.6	5.5	0.9	6.8	9.8	5.9	0.9	
	2	6.1	7.5	5.5	0.6	6.4	7.8	5.1	0.5	
	3	5.5	8.6	4.3	0.7	6.3	8.6	3.9	1.1	
	4	5.7	8.6	5.1	0.9	6.7	13.3	4.3	1.9	
	5	5.3	7.5	4.7	0.4	6.0	7.8	5.1	0.5	
	6	5.4	6.7	4.3	0.5	6.4	8.6	5.5	0.8	
	7	5.8	9.0	4.7	1.1	5.9	9.0	4.3	1.3	
	8	6.1	8.2	4.7	0.8	6.9	11.0	5.5	1.2	
	9	5.9	7.8	4.7	0.7	7.1	10.2	5.1	1.3	
	10	6.0	7.5	4.7	0.8	5.4	7.5	3.9	0.6	
	Average	5.81	8.00	4.82		6.39	9.36	4.86		
	SE	0.10	0.23	0.13		0.16	0.56	0.22		
	Av L+R	6.10	8.68	4.84						
	SE	0.12	0.33	0.13						
14	1	5.7	8.2	4.7	0.5					
	2	5.3	7.8	4.7	0.8					
	3	6.6	10.2	4.7	1.3					
	4	5.9	12.2	4.7	1.6					
	5	5.7	7.8	4.7	0.7					
	6	5.5	8.6	3.9	0.9					
	7	5.3	6.7	3.9	0.7					
	8	6.7	11.8	5.5	1.4					
	9	5.7	7.5	4.7	0.7					
	10	5.4	7.5	3.9	0.8					
	Average	5.78	8.83	4.54						
	SE	0.16	0.60	0.16						
	15	1					6.8	11.4	5.5	1.3
		2					5.4	8.2	3.1	1.0
3						6.0	8.2	3.9	1.0	
4						6.5	8.2	5.5	0.7	
5						5.5	7.8	3.9	0.6	
6										
7						5.8	7.8	5.1	0.6	
8						5.8	8.2	4.7	0.9	
9						6.3	9.8	5.1	0.9	
10						7.1	9.4	4.7	1.1	
Average						6.13	8.78	4.61		
SE						0.19	0.40	0.27		
16		1	5.8	9.4	4.3	0.9	5.8	7.8	4.3	1.1
		2	5.9	9.8	4.7	1.4	6.6	8.2	5.5	0.8
	3	6.5	9.8	5.5	0.8	8.0	12.2	6.3	1.3	
	4	5.4	7.5	4.3	0.6	5.6	7.1	4.7	0.5	
	5	5.5	7.5	4.7	0.6	5.6	8.2	4.7	0.9	
	6	6.2	8.6	5.5	0.9	6.7	10.6	5.9	1.0	

	7	6.1	7.8	5.5	0.7	5.7	7.5	4.7	0.7
	8	6.8	8.2	5.5	0.7	7.8	12.9	6.3	1.4
	9	6.1	9.4	5.5	0.9	5.9	8.2	4.7	1.1
	10	6.3	7.8	5.5	0.7	7.2	11.4	5.5	1.6
	Average	6.06	8.58	5.10		6.49	9.41	5.26	
	SE	0.14	0.30	0.17		0.29	0.68	0.23	
	Av L+R	6.28	9.00	5.18					
	SE	0.16	0.37	0.14					
17	1	5.6	7.1	3.5	0.8	5.2	7.1	4.3	0.8
	2	6.9	9.8	5.9	0.9	6.0	8.2	4.3	0.8
	3	5.8	8.2	4.7	0.8	7.2	13.3	5.9	1.6
	4	5.5	7.1	4.3	0.8	7.2	10.6	3.5	2.0
	5	5.1	7.1	3.9	0.5	7.2	10.6	4.3	1.3
	6	5.6	9.0	4.7	0.9	6.9	9.8	5.9	1.0
	7	5.4	7.1	4.7	0.6	5.7	9.0	4.3	1.0
	8	5.5	7.8	4.7	0.8	6.1	9.8	4.7	1.2
	9	5.7	7.5	3.9	0.9	6.7	12.2	4.7	1.9
	10	6.1	7.8	5.1	0.7	7.8	12.5	4.7	1.8
	Average	5.72	7.85	4.54		6.60	10.31	4.66	
	SE	0.15	0.29	0.22		0.26	0.62	0.23	
	Av L+R	6.16	9.08	4.60	1.06				
	SE	0.18	0.44	0.16					
18	1	6.5	10.2	5.5	1.0	5.7	7.5	4.7	0.7
	2	6.9	8.6	5.5	0.8	5.8	7.5	5.1	0.5
	3	6.3	7.8	5.5	0.7	5.5	7.1	4.3	0.6
	4	6.4	7.8	5.5	0.7	6.7	8.6	5.1	0.9
	5	6.2	8.2	5.5	0.7	6.7	7.8	5.5	0.6
	6	6.5	7.8	5.5	0.6	6.5	9.0	5.9	0.7
	7	6.9	8.6	5.5	0.8	5.9	7.5	5.1	0.5
	8	7.0	8.2	5.1	0.8	6.3	7.5	5.5	0.6
	9	6.5	10.2	4.7	1.1	5.9	7.8	4.7	0.7
	10	6.8	9.8	4.7	1.5	6.3	8.2	5.1	0.7
	Average	6.60	8.72	5.30		6.13	7.85	5.10	
	SE	0.09	0.31	0.11		0.14	0.18	0.15	
	Av L+R	6.37	8.29	5.20	0.76				
	SE	0.10	0.20	0.09					

Table D.1: Data from Scheimpflug of female C57BL/6 mice irradiated with 0.5 Gy ^{60}Co radiation delivered at 0.3 Gy/min over an 18 month period.

Table D.2: Scheimpflug imaging data from C57BL/6 mice exposed to 1 Gy at 0.3 Gy/min (L = Left eye, R = right eye)

1.0 Gy at 0.3 Gy/min									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	1	4.8	6.7	4.3	0.5	5.0	7.1	3.9	0.6
	2	4.8	6.7	3.9	0.4	5.3	7.5	4.3	0.5
	3	5.1	7.1	3.1	0.9	5.0	7.1	3.9	0.6
	4	4.8	7.5	3.5	0.6	4.6	6.7	3.5	0.5
	5	4.2	5.9	3.9	0.4	4.9	7.1	3.9	1.0
	6	4.8	7.5	3.5	1.0	4.6	6.3	3.9	0.6
	7	5.2	7.1	4.3	0.8	5.5	7.5	4.7	0.7
	8	4.1	6.7	3.1	0.7				
	9	4.8	7.5	4.3	0.5	5.0	7.8	4.3	0.8
	10	5.0	6.3	4.3	0.4	5.1	7.8	4.7	0.7
	Average	4.76	6.90	3.82		5.00	7.21	4.12	
	SE	0.11	0.17	0.16		0.29	0.50	0.41	
	Av L+R	4.87	7.05	3.96					
	SE	0.08	0.12	0.11					
2	1	5.6	7.8	4.7	0.7	5.4	7.5	4.7	0.5
	2	5.1	7.5	4.3	0.6	5.0	7.8	3.9	0.7
	3	5.0	7.8	4.3	0.7	4.7	7.1	3.9	0.6
	4	5.0	7.1	3.9	0.6	5.3	7.8	4.3	0.7
	5	4.8	6.7	3.9	0.5	5.1	9.0	4.7	0.9
	6	5.4	9.0	4.7	1.1	5.6	8.2	4.7	0.9
	7	5.3	7.1	4.7	0.4	4.9	7.5	3.5	0.8
	8	5.0	7.1	4.3	0.6	5.5	7.5	4.7	0.6
	9	5.2	9.0	4.3	1.0	5.1	7.8	3.9	0.8
	10	5.1	7.5	4.7	0.6	3.8	4.7	3.1	0.3
	Average	5.15	7.66	4.38		5.04	7.49	4.14	
	SE	0.07	0.25	0.10		0.16	0.35	0.18	
	Av L+R	5.10	7.58	4.26					
	SE	0.09	0.21	0.10					
3	1	4.6	7.1	3.9	0.6	5.5	8.2	4.7	0.6
	2	4.7	7.1	3.9	0.7	4.9	7.8	3.9	0.9
	3	5.5	7.5	3.9	0.6	5.5	7.8	4.7	0.7
	4	5.1	7.1	3.9	0.6	5.1	7.8	4.7	0.6
	5	5.5	7.8	3.9	0.6	5.4	7.8	4.7	0.7
	6	4.9	7.5	4.7	0.6	5.1	7.1	3.9	0.5
	7	4.9	7.1	4.7	0.5	5.7	7.8	4.7	0.5
	8	4.9	7.1	4.7	0.4	4.6	6.7	3.9	0.6
	9	5.1	7.5	4.7	0.5	5.0	7.5	3.9	0.6
	10	4.8	7.5	4.7	0.5	5.3	8.6	4.3	0.7

	Average	5.00	7.33	4.30		5.21	7.71	4.34		
	SE	0.10	0.08	0.13		0.10	0.17	0.13		
	Av L+R	5.11	7.52	4.32						
	SE	0.07	0.10	0.09						
4	1	5.3	7.8	4.7	0.6	5.2	6.3	4.3	0.4	
	2	4.2	6.7	3.5	0.5	6.0	7.8	5.5	0.5	
	3					5.5	8.2	3.9	0.6	
	4	5.0	7.8	4.7	0.6	5.7	11.0	4.7	1.2	
	5	4.9	7.5	4.7	0.6	5.4	7.8	4.7	0.7	
	6	4.5	7.1	3.9	0.7	5.8	8.2	4.3	1.0	
	7	4.9	7.5	4.3	0.7	5.3	7.8	4.7	0.7	
	8	5.0	7.8	4.7	0.7	5.3	7.8	3.9	0.8	
	9	5.7	9.4	4.7	0.8	4.9	7.1	3.9	0.6	
	10	4.8	7.1	3.9	0.6	4.7	7.1	3.9	0.6	
		Average	4.92	7.63	4.34		5.4	7.9	4.4	
		SE	0.14	0.25	0.16		0.13	0.39	0.17	
		Av L+R	5.16	7.78	4.36					
		SE	0.11	0.23	0.11					
5	1	4.7	7.1	3.9	0.6	5.3	7.8	4.7	0.6	
	2	5.1	7.1	4.7	0.6	5.0	7.8	3.9	0.6	
	3	4.9	7.8	4.3	0.7	5.4	8.2	4.7	0.8	
	4	4.8	7.1	4.3	0.4	5.0	8.6	4.3	0.8	
	5	5.0	7.8	4.7	0.6	5.3	7.8	4.7	0.7	
	6	4.8	6.7	4.3	0.3	4.9	6.3	3.9	0.5	
	7	5.1	7.8	4.7	0.6	4.7	7.8	3.9	0.7	
	8	4.7	7.8	3.9	0.6	5.8	8.2	5.1	0.6	
	9	4.9	7.5	4.3	0.5	5.2	7.1	4.7	0.5	
	10	4.7	6.7	3.9	0.4	5.2	7.1	4.7	0.5	
		Average	4.87	7.34	4.30		5.18	7.67	4.46	
		SE	0.05	0.14	0.10		0.10	0.21	0.14	
		Av L+R	5.03	7.51	4.38					
		SE	0.06	0.13	0.09					
6	1	4.9	6.7	4.3	0.5	5.6	7.1	5.1	0.5	
	2	4.9	7.1	4.3	0.4	5.5	7.1	4.7	0.4	
	3	4.6	7.1	3.9	0.7	5.2	8.2	3.9	0.8	
	4	4.8	6.7	4.3	0.4	5.5	7.1	4.7	0.5	
	5	4.9	7.5	4.3	0.5	5.2	7.5	4.3	0.5	
	6	5.7	8.6	4.7	0.9	5.7	7.5	4.7	0.5	
	7	6.1	10.2	4.7	1.0	5.5	7.8	4.3	0.5	
	8	4.8	7.1	3.9	0.5	5.6	8.2	4.3	0.8	
	9	5.1	7.1	4.7	0.5	5.4	8.2	3.9	0.7	
	10	5.4	8.6	4.7	0.8	5.6	7.5	4.3	0.6	
		Average	5.12	7.67	4.38		5.48	7.62	4.42	
		SE	0.15	0.35	0.10		0.05	0.15	0.12	

	Av L+R	5.30	7.65	4.40					
	SE	0.09	0.19	0.08					
7	1	5.7	7.8	5.1	0.4	5.4	8.2	4.7	0.8
	2	5.2	7.8	4.7	0.6	5.0	7.5	4.7	0.6
	3	4.8	7.1	3.5	1.1	6.1	9.0	5.1	0.7
	4	7.4	9.8	6.3	1.2	5.2	7.8	4.3	0.6
	5	5.6	7.1	4.7	0.4	5.6	9.8	4.3	1.1
	6	5.2	7.1	3.9	0.6	5.3	7.1	4.3	0.5
	7	5.8	9.0	4.3	0.8	4.7	7.1	3.9	0.7
	8	5.2	5.9	4.3	0.4	5.3	7.1	4.7	0.6
	9	4.8	7.1	3.9	0.6	6.0	8.2	4.3	0.9
	10	5.0	7.1	4.3	0.5	4.9	7.1	3.9	0.5
	Average	5.47	7.58	4.50		5.35	7.89	4.42	
	SE	0.24	0.35	0.25		0.14	0.29	0.12	
	Av L+R	5.41	7.74	4.46					
	SE	0.14	0.22	0.13					
8	1	5.9	7.8	4.7	0.6	6.2	9.4	5.1	0.9
	2	6.0	8.2	4.7	0.8	5.7	7.5	4.7	0.6
	3	5.5	7.8	4.7	0.8	5.3	7.5	4.7	0.6
	4	5.3	8.2	4.7	1.0	5.0	7.1	4.3	0.5
	5	5.1	7.8	4.7	0.6	5.5	8.6	4.7	0.9
	6	5.4	7.8	4.7	0.7	5.8	10.6	4.7	1.3
	7	5.9	8.2	4.7	0.6	5.3	8.2	4.7	0.7
	8	5.4	7.8	4.7	0.9	7.2	13.7	5.9	1.8
	9	5.8	8.6	4.7	0.9	6.1	8.6	4.7	0.7
	10	5.4	7.8	4.7	0.6	6.4	11.8	5.5	1.3
	Average	5.57	8.00	4.70		5.85	9.30	4.90	
	SE	0.10	0.09	0.00		0.21	0.67	0.15	
	Av L+R	5.71	8.65	4.80					
	SE	0.11	0.36	0.08					
9	1	5.8	7.8	4.7	0.8	5.6	7.5	4.3	0.7
	2	5.4	7.5	4.7	0.5	6.3	8.2	5.5	0.6
	3	5.6	7.1	4.3	0.4	5.8	8.6	5.1	0.7
	4	5.5	7.1	5.1	0.4	5.9	8.6	4.3	0.8
	5	5.6	7.5	5.1	0.5	4.7	7.1	3.9	0.7
	6	6.4	8.6	5.5	0.7	6.2	8.2	4.3	0.9
	7	5.3	7.5	4.7	0.6	5.4	7.5	4.7	0.5
	8	5.6	8.2	5.1	0.5	5.8	7.5	5.1	0.6
	9	5.7	7.5	5.1	0.6	5.4	7.1	4.7	0.5
	10	5.0	7.1	4.3	5.0	5.2	7.5	3.9	0.6
	Average	5.59	7.59	4.86		5.63	7.78	4.58	
	SE	0.11	0.16	0.12		0.15	0.18	0.17	
	Av L+R	5.61	7.69	4.72					
	SE	0.41	0.53	0.48					

10	1	5.5	7.5	4.7	0.7	5.9	7.8	4.3	0.7
	2	6.0	8.6	4.7	0.8	6.6	8.4	5.1	0.9
	3	6.8	8.6	5.5	1.0	5.4	7.1	4.7	0.5
	4	5.8	8.2	5.1	0.6	6.1	7.5	5.1	0.7
	5	6.1	10.2	4.7	1.3	5.2	7.8	4.3	0.8
	6	5.5	7.5	4.7	0.7	6.5	8.2	5.5	0.8
	7	5.3	7.5	4.7	0.6	6.3	8.2	5.1	0.7
	8	5.8	8.6	5.5	0.7	7.0	9.4	6.3	0.7
	9	5.9	7.8	5.1	0.5	5.7	8.6	5.1	0.6
	10	5.5	7.8	4.7	0.5	5.5	8.2	4.7	0.7
	Average	5.82	8.23	4.94		6.02	8.12	5.02	
	SE	0.14	0.26	0.11		0.18	0.20	0.19	
	Av L+R	5.92	8.18	4.98					
	SE	0.11	0.16	0.11					
11	1	5.9	8.6	4.7	0.9	6.4	10.2	5.1	0.9
	2	5.7	9.8	4.7	1.1	6.3	8.6	5.5	0.6
	3	5.9	7.5	5.1	0.6	6.0	8.6	5.5	0.7
	4					5.4	8.2	4.7	0.8
	5	5.0	7.5	3.9	0.9	5.8	7.8	4.7	0.7
	6	5.7	7.8	4.7	0.7	6.6	9.0	4.3	1.2
	7	6.2	10.6	5.1	1.5	6.0	8.6	4.3	0.9
	8	6.0	7.8	4.7	0.8	6.3	9.0	5.5	1.2
	9	6.0	7.8	4.7	0.8	6.3	11.0	5.1	1.3
	10	5.8	7.5	4.7	0.5	5.1	6.7	3.9	0.5
	Average	5.80	8.32	4.70		6.02	8.77	4.86	
	SE	0.11	0.38	0.12		0.15	0.38	0.18	
	Av L+R	5.92	8.56	4.78					
	SE	0.10	0.26	0.11					
12	1	7.1	11.8	5.5	1.7	5.8	9.0	4.3	1.1
	2	5.6	7.5	4.3	0.6	6.1	9.4	3.9	1.3
	3	6.0	7.8	5.1	0.5	5.8	7.8	5.1	0.6
	4	6.4	8.2	4.7	1.4	6.5	8.6	5.5	0.8
	5	5.8	8.6	4.3	1.1	5.5	6.7	4.7	0.6
	6	6.4	8.6	5.5	0.7	6.5	8.6	5.1	0.8
	7	5.8	8.2	3.9	0.7	5.5	7.5	3.9	0.9
	8	5.7	7.8	5.1	0.5	5.9	9.4	5.1	0.9
	9	6.4	8.2	4.7	0.8	5.7	7.1	4.7	0.5
	10	6.1	9.4	3.9	1.2	5.4	7.1	4.7	0.4
	Average	6.13	8.61	4.70		5.87	8.12	4.70	
	SE	0.14	0.39	0.19		0.12	0.32	0.17	
	Av L+R	6.00	8.37	4.70					
	SE	0.10	0.25	0.12					
13	1	6.5	8.2	5.5	0.7	5.4	7.5	4.7	0.5
	2	6.0	8.2	5.1	0.8	6.5	8.6	5.1	0.8

	3	5.2	7.5	4.7	0.8	7.2	11.0	5.9	1.3
	4	5.4	7.5	4.7	0.7	6.1	8.6	4.7	0.7
	5	5.8	7.1	4.7	0.5	6.1	9.4	3.9	1.1
	6	6.4	10.2	5.5	1.1	6.1	7.8	5.5	0.7
	7	5.9	8.2	4.7	0.9	5.6	7.1	5.1	0.4
	8	6.3	7.5	5.5	0.6	6.4	7.8	5.5	0.4
	9	6.3	8.2	5.5	0.7				
	10	6.1	8.2	5.1	0.5	7.4	10.2	5.1	1.1
	Average	5.99	8.08	5.10		6.31	8.67	5.06	
	SE	0.14	0.27	0.12		0.22	0.44	0.19	
	Av L+R	6.14	8.36	5.08					
	SE	0.13	0.25	0.11					
14	1	6.2	9.4	4.3	1.0				
	2	5.5	7.8	5.1	0.5				
	3	5.5	7.5	4.7	0.7				
	4	6.3	11.4	5.5	1.2				
	5	6.3	8.6	5.5	0.6				
	6	6.2	8.2	5.5	0.6				
	7	5.9	7.8	5.1	0.7				
	8	5.6	7.5	5.1	0.5				
	9								
	10	5.8	7.5	4.3	0.5				
	Average	5.92	8.41	5.01					
	SE	0.11	0.43	0.16					
15	1					6.1	7.5	5.1	0.5
	2					6.7	9.0	5.5	0.8
	3					7.8	9.8	6.3	1.2
	4					6.1	9.8	4.7	1.0
	5					6.1	7.8	3.9	0.9
	6					6.7	8.6	5.1	0.8
	7					6.3	7.5	5.5	0.5
	8					7.0	12.2	4.7	1.5
	9								
	10					5.3	9.4	3.1	1.2
	Average					6.46	9.07	4.88	
	SE					0.23	0.50	0.31	
16	1	6.5	7.8	5.5	0.8	7.0	10.2	6.3	0.8
	2	6.4	12.2	5.1	1.5	5.8	7.8	4.7	0.6
	3	5.6	9.8	4.7	1.3	6.0	7.1	5.1	0.6
	4	6.4	10.2	5.1	1.2	6.3	9.8	5.1	1.3
	5	5.6	7.1	4.7	0.4	5.5	7.1	4.7	0.4
	6	6.1	8.2	5.5	0.6	6.1	9.4	4.7	1.3
	7	6.1	7.8	4.3	0.7	5.9	7.8	4.7	0.9
	8	6.3	10.6	5.5	0.9	6.5	9.0	5.5	0.8

	9								
	10	6.6	12.9	5.5	1.7	6.1	7.8	3.9	0.9
	Average	6.18	9.62	5.10		6.13	8.44	4.97	
	SE	0.37	2.05	0.45		0.43	1.17	0.66	
	Av L+R	6.16	9.03	5.03					
	SE	0.09	0.41	0.13					
17	1	5.6	7.1	4.7	0.8	6.0	7.8	4.7	0.8
	2	6.2	7.8	5.1	0.8	6.0	9.0	5.5	0.7
	3	5.6	7.1	3.9	0.7	6.2	7.8	5.5	0.8
	4	5.4	8.6	4.7	0.9	6.1	7.8	4.7	0.8
	5	7.4	14.5	5.5	1.9	6.6	9.0	5.9	0.7
	6	6.6	9.4	4.3	1.2	6.8	9.4	5.5	1.1
	7	5.5	8.2	4.7	0.9	7.5	10.6	5.9	1.2
	8	6.2	7.8	4.7	0.7	6.5	8.6	5.5	0.7
	9								
	10	5.1	6.3	4.7	0.6	8.1	13.7	5.1	2.8
	Average	5.96	8.53	4.70		6.64	9.30	5.37	
	SE	0.24	0.80	0.15		0.24	0.63	0.15	
	Av L+R	6.30	8.92	5.03					
	SE	0.19	0.50	0.13					
18	1	5.7	8.6	4.7	0.9	6.4	10.2	5.1	0.9
	2	6.3	9.4	5.5	0.7	5.4	7.1	4.7	0.7
	3	6.6	8.6	4.3	1.0	5.4	6.7	4.7	0.7
	4	7.1	8.6	5.5	0.7	6.2	8.2	4.3	0.6
	5	7.2	14.5	5.5	1.9	5.8	7.8	4.7	0.8
	6	6.3	8.2	5.5	0.7	6.1	8.2	4.7	0.7
	7	6.7	8.2	5.1	0.6	5.8	7.5	4.7	0.6
	8	5.7	7.8	4.7	0.7	6.0	10.6	3.5	1.1
	9								
	10	5.3	7.1	4.3	0.7	7.6	11.8	5.5	1.2
	Average	6.32	9.00	5.01		6.08	8.68	4.66	
	SE	0.22	0.72	0.17		0.22	0.59	0.18	
	Av L+R	6.20	8.84	4.83					
	SE	0.15	0.45	0.13					

Table D.2: Data from Scheimpflug of female C57BL/6 mice irradiated with 1 Gy ^{60}Co radiation delivered at 0.3 Gy/min over an 18 month period.

Table D.3: Scheimpflug imaging data from C57BL/6 mice exposed to 2 Gy at 0.3 Gy/min (L = Left eye, R = right eye)

2.0 Gy at 0.3 Gy/min									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	1					6.6	10.6	5.1	1.4
	2					4.6	6.7	3.9	0.7
	3	4.8	7.1	3.9	0.7	4.7	6.7	3.9	0.6
	4	5.4	8.2	4.7	0.8	5.1	7.8	4.3	1.0
	5	4.4	6.7	3.5	1.0	5.2	8.2	4.7	0.8
	6	5.0	8.2	3.9	1.1				
	7	5.5	7.1	4.7	0.5	5.5	7.5	4.7	0.7
	8	4.5	7.1	3.5	0.9	5.1	6.3	4.3	0.5
	9	5.2	7.8	4.3	0.9	5.2	7.1	4.3	0.6
	10					5.4	7.1	4.7	0.7
	Average	4.97	7.46	4.07		5.27	7.56	4.43	
	SE	0.16	0.23	0.19		0.19	0.43	0.13	
	Av L+R	5.14	7.51	4.28	0.81				
	SE	0.13	0.25	0.12					
2	1	5.2	7.8	4.7	0.7	5.1	7.8	3.9	0.8
	2	5.4	7.8	4.7	0.5	5.1	8.2	4.7	0.8
	3	5.0	7.8	4.7	0.7	5.1	7.8	4.7	0.7
	4	5.4	7.8	4.7	0.7	5.0	7.8	4.3	0.8
	5	5.7	8.2	4.7	0.7	5.0	7.5	3.5	0.7
	6	5.1	8.6	4.7	0.9	5.5	11.0	4.7	1.2
	7	4.9	7.5	3.5	0.6	4.8	8.2	3.9	1.1
	8	4.5	5.9	3.9	0.5	5.2	9.0	4.3	1.0
	9	4.8	7.8	4.7	0.4	5.7	7.8	4.7	0.7
	10	5.0	7.5	4.3	0.7	4.5	7.1	3.9	0.7
	Average	5.10	7.67	4.46		5.10	8.22	4.26	
	SE	0.11	0.22	0.14		0.11	0.35	0.14	
	Av L+R	5.10	7.95	4.36					
	SE	0.07	0.21	0.10					
3	1	4.6	6.7	3.9	0.5	5.5	7.8	4.3	0.7
	2	4.8	6.7	4.3	0.4	5.6	7.8	5.1	0.4
	3	5.4	9.0	4.7	0.9	5.4	8.2	4.7	0.7
	4	6.0	8.6	4.7	0.8	5.1	7.1	4.3	0.5
	5	5.1	7.1	4.7	0.5	5.3	8.2	4.3	0.6
	6	5.0	7.1	4.7	0.6	5.5	7.1	4.7	0.5
	7	4.9	7.5	4.7	0.6	5.4	7.1	4.3	0.5
	8	4.8	7.5	4.3	0.6	5.7	9.0	4.7	0.8
	9	4.4	7.1	3.9	0.6	5.2	6.3	3.9	0.5
	10	4.9	7.5	3.9	0.6	5.5	8.2	5.1	0.6

	Average	4.99	7.48	4.38		5.42	7.68	4.54		
	SE	0.14	0.24	0.12		0.06	0.25	0.12		
	Av L+R	5.21	7.58	4.46						
	SE	0.09	0.17	0.08						
4	1	4.2	6.3	3.9	0.5	5.6	8.2	4.3	0.8	
	2	4.9	7.8	3.8	0.7	6.2	9.4	4.3	1.3	
	3	4.7	7.5	3.9	0.8	5.1	7.5	4.3	0.5	
	4	4.6	7.1	3.9	0.6	5.3	7.1	4.7	0.4	
	5	4.5	7.1	3.9	0.6	5.2	7.1	3.9	0.5	
	6	5.2	8.2	4.3	0.8	5.0	7.1	4.7	0.6	
	7	5.2	7.5	4.3	0.6	5.8	9.8	4.7	0.9	
	8	5.0	7.5	3.9	0.7	7.0	9.0	5.1	1.1	
	9	4.5	7.1	3.9	0.6	5.7	8.6	5.1	0.6	
	10	5.4	7.5	4.3	0.5	5.4	8.2	4.3	0.9	
		Average	4.82	7.36	4.01		5.63	8.20	4.54	
		SE	0.12	0.16	0.06		0.19	0.31	0.12	
		Av L+R	5.23	7.78	4.28					
		SE	0.14	0.20	0.09					
5	1	5.3	7.1	4.7	0.4	5.6	8.2	5.1	0.5	
	2	5.3	8.6	4.3	0.8	5.2	7.1	4.7	0.6	
	3	4.8	7.1	4.3	0.4	4.9	7.5	4.7	0.6	
	4	5.5	7.1	4.3	0.5	5.1	8.6	4.7	0.9	
	5	5.1	7.5	3.9	0.7	5.8	8.2	5.1	0.7	
	6	5.5	11.4	4.3	1.5	4.9	7.1	3.9	0.6	
	7	5.4	8.2	4.3	0.9	5.1	9.4	3.9	1.1	
	8	6.4	9.0	5.1	0.9	5.4	9.8	4.3	1.1	
	9	5.4	7.1	3.9	0.6	5.1	7.5	3.9	0.7	
	10	5.3	7.5	3.9	0.7	5.1	7.5	3.9	0.7	
		Average	5.40	8.06	4.30		5.22	8.09	4.42	
		SE	0.13	0.43	0.12		0.09	0.30	0.16	
		Av L+R	5.31	8.08	4.36					
		SE	0.08	0.25	0.10					
6	1	4.9	6.7	4.3	0.4	4.5	7.1	3.5	1.2	
	2	6.0	7.8	4.7	0.7	6.4	14.5	5.1	2.1	
	3	5.3	8.2	4.3	0.7	4.9	6.7	4.3	0.4	
	4	6.1	9.8	4.3	1.4	5.6	7.8	5.1	0.4	
	5	5.0	7.5	4.3	0.5	5.8	8.2	5.1	0.7	
	6	4.8	7.1	3.9	0.6	5.5	8.2	4.7	0.6	
	7	5.1	9.0	3.9	1.1	5.7	7.8	5.1	0.6	
	8	5.0	7.1	4.3	0.5	5.9	9.8	5.5	1.0	
	9	5.3	8.6	4.3	0.8	5.7	8.6	4.7	0.8	
	10	4.7	6.3	4.3	0.4	5.4	7.1	4.7	0.4	
		average	5.22	7.81	4.26		5.54	8.58	4.78	
		SE	0.15	0.35	0.07		0.17	0.71	0.18	

	Av L+R	5.38	8.20	4.52					
	SE	0.12	0.40	0.11					
7	1	6.0	8.6	4.7	0.7	5.5	7.5	4.7	0.6
	2	5.8	9.8	4.7	1.1	5.4	8.6	4.3	0.8
	3	4.9	7.8	4.3	0.6	5.0	7.8	4.3	0.6
	4	5.0	7.8	3.1	0.7	5.0	7.8	4.3	0.7
	5	4.9	7.1	4.3	0.5	5.5	7.5	4.7	0.5
	6	6.1	11.4	4.7	1.5	5.4	7.8	4.3	0.6
	7	5.6	8.2	4.7	0.7	5.2	7.8	4.3	0.8
	8	5.2	6.7	4.7	0.5	5.7	9.8	4.7	0.9
	9	5.0	7.5	4.7	0.6	4.9	7.5	3.9	0.7
	10	5.1	7.5	4.3	0.6	5.7	7.5	4.7	0.6
	Average	5.36	8.24	4.42		5.33	7.96	4.42	
	SE	0.15	0.44	0.16		0.09	0.23	0.09	
	Av L+R	5.35	8.10	4.42					
	SE	0.09	0.25	0.09					
8	1	5.7	7.8	4.7	0.6	5.3	7.8	4.7	0.7
	2	5.8	8.2	4.7	0.7				
	3	5.0	7.1	3.9	0.7	6.5	10.6	5.5	1.1
	4	4.9	7.1	4.3	0.5	6.0	9.0	5.5	0.7
	5	5.3	7.8	4.3	0.6	5.9	7.8	4.7	1.1
	6	5.4	8.2	4.3	0.9	5.9	8.2	5.1	0.6
	7	5.7	7.5	5.1	0.5	6.5	10.6	5.5	1.1
	8	5.7	8.2	4.7	0.6	5.7	7.8	4.7	0.7
	9	5.9	7.5	5.5	0.5	5.2	7.5	3.9	0.6
	10	5.6	7.5	4.7	0.8	5.0	7.1	3.5	0.7
	Average	5.50	7.69	4.62		5.78	8.49	4.79	
	SE	0.11	0.13	0.14		0.18	0.43	0.24	
	Av L+R	5.63	8.07	4.70					
	SE	0.10	0.23	0.13					
9	1	5.7	5.7	4.7	0.7	5.9	7.8	4.7	0.7
	2	6.0	6.0	5.1	1.0	5.8	7.5	5.1	0.5
	3	5.7	5.7	5.1	0.6	5.4	7.5	4.7	0.6
	4	5.5	5.5	4.3	0.5	5.9	8.6	3.9	0.8
	5	5.4	5.4	4.7	0.5	6.5	8.6	5.5	0.8
	6	4.9	6.3	4.3	0.5	5.7	8.2	5.1	0.7
	7	5.7	8.2	4.7	0.9	5.7	7.8	4.7	0.8
	8	5.9	8.6	5.1	1.0	6.4	8.6	5.5	0.7
	9	5.8	7.8	5.1	0.6	5.7	7.1	4.7	0.5
	10	6.0	8.2	5.5	0.6	5.8	7.8	5.5	0.5
	Average	5.66	6.74	4.86		5.88	7.95	4.94	
	SE	0.10	0.41	0.12		0.11	0.17	0.16	
	Av L+R	5.77	7.35	4.90	0.68				
	SE	0.08	0.26	0.10					

10	1	4.8	7.5	3.9	0.9	5.6	7.8	4.7	0.6
	2	5.3	9.0	4.7	1.1	6.0	8.2	5.1	0.6
	3	5.2	7.1	4.7	0.7	6.7	9.8	5.1	1.1
	4	5.5	9.8	4.7	1.3	5.4	7.8	4.3	0.6
	5	6.2	7.8	5.5	0.7	5.6	7.5	4.7	0.4
	6	5.3	7.8	4.7	0.9	7.1	12.9	5.5	1.8
	7	4.7	7.8	3.9	0.8	5.8	7.8	4.7	0.7
	8	5.2	7.5	4.7	0.7	5.5	7.5	5.1	0.5
	9	6.2	8.6	5.5	0.7	5.2	7.8	4.3	0.8
	10	5.6	8.6	4.7	1.1	5.8	7.8	3.5	0.9
	Average	5.40	8.15	4.70		5.87	8.49	4.70	
	SE	0.16	0.26	0.17		0.19	0.53	0.18	
	Av L+R	5.64	8.32	4.70	0.85				
	SE	0.13	0.29	0.12					
11	1	5.7	7.5	4.7	0.8	5.5	7.5	4.7	0.5
	2	6.4	9.8	5.5	0.9	6.8	9.8	4.3	1.1
	3	7.2	9.4	5.9	0.8	5.6	7.8	4.7	0.7
	4	6.0	8.2	3.5	0.9	5.7	7.8	3.9	0.6
	5	6.2	8.2	3.9	1.0	6.4	8.6	4.7	1.2
	6	5.3	7.8	4.7	0.9	6.2	8.6	5.5	0.7
	7	5.2	7.8	3.9	0.8	6.2	7.5	5.5	0.6
	8								
	9	6.0	7.8	4.7	0.7	5.9	7.8	4.3	0.6
	10	5.5	8.2	4.7	0.8	8.0	9.4	6.3	1.0
	Average	5.94	8.30	4.61		6.26	8.31	4.88	
	SE	0.21	0.26	0.26		0.26	0.28	0.25	
	Av L+R	6.10	8.31	4.74					
	SE	0.16	0.19	0.18					
12	1	6.5	9.0	4.3	1.0	6.4	7.8	5.9	0.5
	2	5.9	9.0	4.7	1.2	6.5	8.2	5.5	0.6
	3	5.6	9.8	4.7	1.3	6.3	8.2	5.5	0.8
	4	6.1	7.5	4.7	0.5	6.1	8.6	5.5	0.6
	5	6.3	8.2	5.1	1.0	6.7	11.0	3.9	1.7
	6	5.6	9.0	4.7	1.2	6.0	9.4	5.1	0.8
	7	7.3	11.4	5.9	1.1	5.1	6.7	4.7	0.6
	8								
	9	5.8	7.1	5.1	0.5	6.1	8.2	5.1	0.6
	10	6.4	8.2	5.9	0.4	6.1	7.8	5.5	0.5
	Average	6.17	8.80	5.01		6.14	8.43	5.19	
	SE	0.54	1.28	0.56		0.45	1.20	0.59	
	Av L+R	6.16	8.62	5.10					
	SE	0.11	0.29	0.13					
13	1	6.2	8.6	4.7	1.1	6.6	8.6	5.5	0.6
	2	6.4	7.5	5.5	0.6	6.1	8.6	3.9	1.2

	3	6.2	8.2	4.7	1.0	5.9	7.5	5.5	0.5
	4	6.3	7.5	5.5	0.7	6.4	8.6	5.5	0.9
	5	5.9	7.8	5.1	0.5	6.5	9.0	5.5	1.0
	6	5.8	8.2	5.5	0.6	6.9	11.0	5.5	1.2
	7	5.9	8.2	4.7	1.0	6.3	8.2	5.5	0.7
	8								
	9	6.2	10.2	5.5	1.0	5.8	8.2	5.5	0.6
	10	5.9	8.2	5.1	0.7	6.3	7.8	5.5	0.8
	Average	6.09	8.27	5.14		6.31	8.61	5.32	
	SE	0.07	0.27	0.12		0.11	0.34	0.18	
	Av L+R	6.20	8.44	5.23					
	SE	0.30	0.90	0.46					
14	1	6.6	9.0	4.3	1.0				
	2	5.7	7.1	3.9	0.7				
	3	5.0	6.7	4.3	0.5				
	4	5.8	10.2	4.7	1.3				
	5	6.2	11.0	3.9	1.3				
	6	6.3	11.0	5.5	1.4				
	7								
	8	5.3	7.1	4.7	0.7				
	9	5.8	8.2	4.7	0.7				
	10								
	Average	5.84	8.79	4.50					
	SE	0.19	0.63	0.19					
15	1					6.3	10.6	5.5	1.3
	2					8.0	9.4	5.5	1.0
	3					5.9	7.8	4.7	0.7
	4					6.3	8.2	4.3	0.7
	5					6.1	8.2	5.5	0.6
	6					5.9	7.8	5.1	0.5
	7					6.6	7.5	5.5	0.6
	8					5.7	7.1	4.7	0.5
	9					6.4	10.2	5.5	0.9
	10					5.6	7.5	3.9	0.6
	Average					6.28	8.43	5.02	
	SE					0.22	0.38	0.19	
16	1	5.0	6.7	4.3	0.6	5.8	7.8	5.1	0.6
	2	6.1	9.8	4.3	1.1	5.9	10.2	3.9	1.4
	3								
	4	5.6	7.1	4.7	0.6	5.6	7.1	4.7	0.4
	5	5.5	7.1	4.7	0.5	5.7	7.1	4.7	0.5
	6	5.2	7.1	4.7	0.6	5.4	7.5	4.7	0.5
	7	5.7	7.5	5.1	0.5	6.6	8.2	5.5	0.6
	8	6.5	11.4	5.5	1.1	6.4	9.4	5.1	0.8

	9	5.3	7.1	4.3	0.6	6.2	8.6	4.7	1.2
	10	6.1	7.5	5.5	0.6				
	Average	5.67	7.92	4.79		5.95	8.24	4.80	
	SE	0.16	0.53	0.16		0.15	0.39	0.16	
	Av L+R	5.80	8.07	4.79					
	SE	0.11	0.33	0.11					
17	1	6.5	8.6	5.5	0.7	5.6	7.8	4.7	0.7
	2	5.9	7.8	5.5	0.6	6.8	8.2	5.5	0.6
	3	6.1	13.3	4.7	1.5	5.6	7.1	4.7	0.7
	4	6.9	9.8	5.5	1.1	7.0	8.2	6.3	0.6
	5	5.6	9.8	4.3	1.2	6.4	7.8	3.9	1.0
	6	6.7	8.2	5.9	0.6	7.0	13.5	5.9	1.4
	7	5.6	6.7	5.1	0.5	6.9	16.1	3.1	1.8
	8	6.5	9.8	4.3	1.2				
	9					6.4	8.6	5.5	0.8
	10	5.9	8.2	3.9	0.9	6.4	9.8	5.1	1.3
	Average	6.19	9.13	4.97		6.46	9.68	4.97	
	SE	0.16	0.63	0.23		0.18	1.02	0.33	
	Av L+R	6.32	9.41	4.97	0.96				
	SE	0.12	0.59	0.20					
18	1	6.1	7.8	5.5	0.6	6.5	7.8	5.5	0.6
	2	7.0	8.8	4.7	1.3	6.9	8.2	5.5	0.7
	3	6.6	10.6	5.1	1.6	6.5	11.0	5.1	1.6
	4	7.8	11.0	5.1	1.7	6.1	8.2	5.5	0.7
	5	5.8	8.6	4.7	0.9	6.4	9.4	5.1	1.2
	6	6.0	8.6	5.1	0.9	6.1	9.0	5.1	1.0
	7	7.2	10.2	3.9	1.8	6.1	9.0	4.7	0.7
	8								
	9	6.0	7.1	5.1	0.6	5.4	6.7	4.7	0.7
	10	6.9	9.8	4.7	1.2	6.3	9.0	5.1	1.0
	Average	6.60	9.17	4.88		6.26	8.70	5.14	
	SE	0.23	0.44	0.15		0.14	0.40	0.10	
	Av L+R	6.43	8.93	5.01	1.0				
	SE	0.13	0.29	0.09					

Table D.3: Data from Scheimpflug of female C57BL/6 mice irradiated with 2 Gy ^{60}Co radiation delivered at 0.3 Gy/min over an 18 month period.

Table D.4: Scheimpflug imaging data from control C57BL/6 mice sham-irradiated alongside 0.3 Gy/min exposures (L = Left eye, R = right eye).

Control 1 to 10 (0.3 Gy/min)									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Mean	Max	Min	Std dev
1	1	4.4	6.3	3.5	0.6	5.3	8.2	4.3	1.0
	2	5.2	7.5	4.7	0.7	6.8	11.0	5.5	1.7
	3					4.9	7.5	3.9	0.9
	4	5.2	7.1	4.3	0.6	5.4	8.6	4.3	1.2
	5	5.7	9.0	4.7	1.0	5.1	8.2	3.9	1.2
	6	4.9	6.7	3.9	0.6	4.9	6.7	3.9	0.9
	7	4.2	5.9	3.5	0.5	5.3	7.1	4.7	0.6
	8					5.0	7.1	3.5	0.7
	9	5.4	7.1	4.7	0.6	5.5	7.1	3.9	0.8
	10	5.4	9.8	3.9	1.4	4.7	6.7	3.9	0.5
	Average	5.05	7.43	4.15		5.29	7.82	4.18	
	SE	0.18	0.47	0.18		0.19	0.41	0.18	
	Av L+R	5.18	7.64	4.17					
	SE	0.13	0.30	0.13					
2	1	5.7	8.2	5.1	0.7	5.4	7.5	4.7	0.5
	2	4.9	7.1	4.3	0.6	3.9	9.0	3.5	0.7
	3								
	4	5.8	9.4	4.7	1.0	6.2	11.8	4.3	1.7
	5	5.1	6.3	4.7	0.4	6.2	11.0	3.9	1.8
	6	4.9	7.5	4.3	0.7	5.1	7.5	4.3	0.5
	7	4.9	9.8	3.9	1.2	5.9	8.2	4.7	1.0
	8	4.8	7.1	4.3	0.5	5.7	8.6	3.9	1.0
	9	4.6	7.1	3.1	0.7	5.3	7.5	4.3	0.6
	10	5.8	7.8	5.1	0.6	6.0	8.6	5.5	1.0
	Average	5.17	7.81	4.39		5.52	8.86	4.34	
	SE	0.16	0.38	0.21		0.24	0.52	0.19	
	Av L+R	5.34	8.33	4.37					
	SE	0.15	0.34	0.14					
3	1	4.8	9.0	3.9	1.0	5.7	10.6	3.9	1.8
	2	4.6	6.3	3.9	0.5	5.2	8.6	3.9	1.0
	3								
	4	5.0	8.2	3.9	0.8	5.8	11.4	4.7	1.3
	5	4.3	7.1	3.9	0.7	5.5	9.4	3.9	1.1
	6	5.0	7.5	3.9	0.7	5.5	9.4	4.7	1.3
	7	4.8	6.7	3.9	0.5	5.3	7.5	4.7	0.6
	8	5.6	7.8	4.7	0.6	5.3	7.5	4.3	0.6
	9	4.8	7.1	3.9	0.6	5.7	9.0	3.5	1.3
	10	4.8	6.7	4.3	0.4	5.3	8.6	4.3	0.9
	Average	4.76	7.38	4.03		5.48	9.11	4.21	

	SE	0.08	0.28	0.09		0.07	0.43	0.15	
	Av L+R	5.14	8.24	4.12					
	SE	0.10	0.33	0.09					
4	1	4.6	7.1	3.9	0.6	5.2	9.8	3.9	1.3
	2	5.2	7.8	4.7	0.7	4.8	7.5	3.5	0.9
	3								
	4	5.7	9.0	4.7	0.8	5.2	7.1	3.9	0.7
	5	4.8	7.8	3.5	0.7	5.9	9.0	4.7	1.0
	6	5.3	7.8	4.7	0.6	5.9	10.6	4.7	1.4
	7	4.2	7.1	3.5	0.7	5.6	8.6	4.7	1.1
	8	4.9	7.8	3.9	0.7	5.5	7.8	4.7	0.6
	9	5.1	7.8	4.7	0.7	4.7	7.1	3.9	0.7
	10	5.1	11.0	4.3	1.3	4.7	7.1	3.9	0.7
	Average	4.99	8.13	4.21		5.28	8.29	4.21	
	SE	0.14	0.40	0.17		0.16	0.43	0.16	
	Av L+R	5.13	8.21	4.21					
	SE	0.11	0.29	0.11					
5	1	5.9	10.2	5.1	1.0	5.5	10.6	4.3	1.3
	2	5.1	7.5	4.3	0.6	5.1	7.1	3.9	0.6
	3								
	4	6.0	8.6	4.3	0.8	5.4	7.5	4.3	0.5
	5	5.3	7.5	3.9	0.5	5.3	7.8	4.7	0.7
	6	4.8	7.8	3.9	0.6	5.3	8.2	4.7	0.8
	7	5.5	7.5	4.3	0.6	4.7	7.1	3.9	0.6
	8	5.6	8.2	5.1	0.7	5.1	7.8	4.7	0.7
	9	5.5	8.6	4.7	0.8	5.3	7.1	4.3	0.5
	10	5.2	7.5	4.7	0.5	5.4	8.2	4.7	0.7
	Average	5.43	8.16	4.48		5.23	7.93	4.39	
	SE	0.13	0.30	0.15		0.08	0.36	0.11	
	Av L+R	5.33	8.04	4.43					
	SE	0.08	0.23	0.09					
6	1	5.9	11.0	5.1	1.1	5.7	10.6	4.7	1.3
	2	4.9	7.1	4.3	0.5	5.6	8.6	4.7	0.8
	3								
	4	5.6	9.0	4.7	0.9	5.6	15.3	4.3	2.0
	5	4.9	7.5	3.9	0.7	5.0	6.7	3.9	0.5
	6	5.5	7.5	4.7	0.6	5.5	7.1	4.3	0.6
	7	4.6	7.1	3.9	0.6	5.7	7.8	5.1	0.5
	8	5.0	7.1	3.9	0.6	5.5	7.5	4.7	0.6
	9	5.6	7.5	5.1	0.5	5.9	9.0	4.3	0.9
	10	5.3	7.1	4.7	0.4	5.5	7.5	4.7	0.5
	Average	5.26	7.88	4.48		5.56	8.90	4.52	
	SE	0.14	0.44	0.16		0.08	0.89	0.12	
	Av L+R	5.41	8.39	4.50					

	SE	0.09	0.50	0.10					
7	1	5.2	6.7	3.9	0.5	5.8	8.2	4.7	0.6
	2	5.8	7.8	4.7	0.6	5.6	8.2	4.7	0.9
	3								
	4	5.6	7.8	4.7	0.7	5.9	8.2	5.1	0.8
	5	5.1	7.1	4.3	0.5	5.8	7.8	5.1	0.6
	6	5.2	7.5	4.7	0.8	5.9	7.8	4.7	0.8
	7	5.3	7.8	4.7	0.6	6.1	8.6	5.1	0.8
	8	5.7	7.8	4.7	0.7	5.7	8.6	4.7	0.9
	9	4.9	7.1	3.9	0.6	5.8	8.6	4.7	0.7
	10	5.4	7.1	4.7	0.6	5.3	7.8	4.7	0.6
	Average	5.36	7.41	4.48		5.77	8.20	4.83	
	SE	0.10	0.14	0.12		0.07	0.12	0.07	
	Av L+R	5.56	7.81	4.66					
	SE	0.08	0.13	0.08					
8	1	5.1	6.3	4.3	0.5	6.2	8.6	5.1	0.6
	2	5.5	7.8	4.3	0.7	5.3	7.8	3.9	0.6
	3								
	4	4.4	5.9	3.9	0.5	5.4	7.5	4.3	0.5
	5	4.7	6.7	4.3	0.4	5.3	7.5	4.3	0.6
	6	5.3	7.8	4.3	0.9	5.8	12.2	3.1	1.8
	7	4.6	6.7	3.9	0.6	5.1	7.5	4.7	0.5
	8	5.0	7.1	4.7	0.5	5.6	7.8	4.7	0.6
	9	5.1	7.1	4.3	0.6	5.5	7.8	4.7	0.8
	10	5.3	7.1	4.7	0.7	5.4	8.2	4.7	0.7
	Average	5.00	6.94	4.30		5.51	8.32	4.39	
	SE	0.12	0.21	0.09		0.11	0.50	0.20	
	Av L+R	5.26	7.63	4.34					
	SE	0.10	0.31	0.11					
9	1	5.4	6.7	4.7	0.6	5.7	12.5	4.3	1.6
	2	5.3	7.1	3.9	0.5	5.8	7.5	4.7	0.4
	3								
	4	5.0	7.1	3.9	0.5	6.3	10.6	4.7	1.3
	5	5.2	7.5	4.7	0.6	5.5	7.5	3.9	0.5
	6	5.7	7.8	4.7	0.7	5.8	8.6	4.7	0.7
	7	5.7	7.5	4.7	0.6	5.3	7.8	4.7	0.7
	8	5.0	7.5	4.3	0.6	5.7	7.8	4.7	0.5
	9	5.3	7.5	4.7	0.7	5.3	7.5	3.9	0.6
	10	5.5	7.8	4.7	0.8	5.7	8.2	4.7	0.8
	Average	5.34	7.39	4.48		5.68	8.67	4.48	
	SE	0.09	0.12	0.12		0.10	0.58	0.12	
	Av L+R	5.51	8.03	4.48					
	SE	0.08	0.33	0.08					
10	1	5.7	8.2	4.3	0.8	6.3	7.8	5.5	0.5

	4	6.9	8.2	5.5	0.6	6.3	12.2	3.5	2.0
	5	5.4	7.8	4.7	0.9	5.2	7.1	4.3	0.6
	6	6.1	9.0	5.1	1.0	5.3	7.1	4.7	0.4
	7	5.7	7.1	5.1	0.5	5.8	7.8	5.1	0.6
	8	5.2	7.8	5.1	0.6	6.6	10.2	5.1	0.9
	9	5.9	9.0	4.7	1.0	6.0	7.8	5.5	7.0
	10	5.8	9.4	4.7	1.1	6.4	9.4	3.9	1.2
	Average	5.91	8.34	5.06		5.96	8.71	4.70	
	SE	0.17	0.26	0.14		0.16	0.56	0.23	
	Av L+R	5.93	8.53	4.88					
	SE	0.11	0.30	0.14					
14	1	5.3	7.8	4.3	0.7				
	2	5.9	7.8	5.5	0.7				
	3								
	4								
	5	6.7	10.6	5.5	1.0				
	6								
	7	6.2	7.8	5.1	0.6				
	8	5.5	7.8	4.7	0.7				
	9	5.5	9.0	4.7	1.0				
	10	6.8	8.2	5.1	0.7				
	Average	5.99	8.43	4.99					
	SE	0.23	0.40	0.17					
15	1					6.1	8.2	3.9	0.9
	2					6.0	8.6	5.1	0.8
	3								
	4					6.1	7.8	5.5	0.6
	5					6.5	9.8	5.5	0.8
	6					6.6	7.8	5.5	0.6
	7					5.5	7.8	4.3	0.6
	8					5.5	7.8	5.1	0.5
	9					6.6	9.4	5.1	1.2
	10					6.1	9.8	4.7	1.3
	Average					6.11	8.56	4.97	
	SE					0.14	0.29	0.19	
16	1	6.5	11.0	5.1	1.1	6.5	9.4	5.1	1.4
	2	6.0	10.6	4.7	1.2	5.9	9.8	3.9	1.1
	3								
	4	5.9	7.1	5.1	0.5	5.2	7.1	4.7	0.5
	5	7.0	10.2	5.1	1.1	6.2	7.8	5.5	0.7
	6	5.4	7.8	4.3	0.9	5.9	7.5	4.7	0.6
	7	5.3	7.1	4.3	0.6	7.3	18.0	5.1	2.6
	8	5.8	7.8	4.7	0.9				
	9	5.7	9.0	4.7	1.1	6.4	8.2	4.7	0.8

	10	6.4	8.2	5.5	0.7	6.8	10.6	3.5	1.5	
	Average	6.00	8.76	4.83		6.28	9.80	4.65		
	SE	0.18	0.50	0.13		0.23	1.25	0.23		
	Av L+R	6.13	9.25	4.75						
	SE	0.14	0.64	0.13						
17	1	5.3	7.8	4.7	0.7	6.2	8.2	4.7	1.1	
	2	6.0	9.4	4.7	1.1	8.4	18.0	5.1	3.0	
	3									
	4	7.0	9.0	5.5	0.8	6.3	7.5	5.5	0.6	
	5	5.9	7.8	4.7	0.7					
	6	6.2	8.6	5.5	0.7					
	7	5.7	7.1	3.9	0.7	5.7	7.5	4.7	0.6	
	8	5.6	8.6	4.3	1.0	5.4	7.1	4.3	0.6	
	9	7.6	9.8	5.5	1.4	5.8	8.2	4.7	0.8	
	10	5.4	6.7	4.7	0.6	6.3	9.8	5.1	1.2	
		Average	6.08	8.31	4.83		6.30	9.47	4.87	
		SE	0.25	0.35	0.19		0.37	1.46	0.15	
		Av L+R	6.18	8.82	4.85					
		SE	0.21	0.66	0.12					
18	1	5.8	7.1	5.1	0.5	6.7	10.2	5.1	1.6	
	2	6.2	7.8	5.1	0.7	6.4	11.0	5.1	1.3	
	3									
	4	6.7	8.6	5.1	0.9	6.6	9.8	3.5	1.7	
	5	7.0	9.4	5.9	0.9	6.4	8.2	5.1	0.6	
	6	6.6	8.2	4.7	0.8	6.4	7.5	5.5	0.4	
	7	5.9	7.5	4.7	0.8	6.2	10.6	5.1	1.3	
	8	5.8	7.8	4.7	0.8	6.9	9.4	5.1	1.1	
	9	6.2	8.2	5.1	0.8	6.2	8.2	5.5	0.7	
	10	6.1	8.6	5.1	0.8	5.6	7.5	4.7	0.7	
		Average	6.26	8.13	5.06		6.38	9.16	4.97	
		SE	0.14	0.23	0.12		0.12	0.45	0.20	
		Av L+R	6.32	8.64	5.01					
		SE	0.09	0.27	0.11					
Control 11to 20 (0.3 Gy/min)										
Month	Mouse number	Left eye				Right eye				
		Mean	Max	Min	Std dev	Mean	Max	Min	Std dev	
1	11	4.9	7.5	4.3	0.6	5.1	7.1	4.3	0.5	
	12	5.3	7.5	4.3	0.9	5.2	7.1	3.9	0.9	
	13	4.2	5.9	3.1	0.7	5.2	8.2	3.9	0.9	
	14	5.0	7.8	3.5	0.9	5.1	7.1	4.3	0.5	

	15					4.7	6.7	3.5	0.6
	16					5.6	10.6	5.1	1.2
	17	4.8	6.7	4.3	0.4	5.8	9.0	5.1	1.0
	18	4.9	6.7	4.7	0.5	5.5	9.4	4.7	0.9
	19	4.7	6.7	3.9	0.5	4.9	7.1	4.3	0.5
	20	4.9	6.7	3.9	0.7	5.4	7.5	4.7	0.7
	Average	4.84	6.94	4.00		5.25	7.98	4.38	
	SE	0.11	0.22	0.18		0.10	0.41	0.17	
	Av L+R	5.07	7.52	4.21					
	SE	0.09	0.27	0.13					
2	11	4.6	7.1	3.9	0.7	5.7	9.8	3.9	1.4
	12	5.3	7.5	4.3	0.6	5.5	7.8	3.9	0.5
	13	4.6	7.1	3.9	0.6	5.9	8.6	4.3	0.7
	14	4.3	7.8	3.9	0.8	4.8	7.5	3.9	0.6
	15	5.2	9.4	3.5	1.1				
	16	4.7	6.3	3.9	0.6	6.5	9.0	4.7	1.0
	17	4.6	7.1	3.9	0.7	5.0	7.1	4.3	0.8
	18	4.7	6.7	3.9	0.4	5.4	7.5	4.7	0.7
	19	5.4	7.1	4.7	0.5	5.7	7.8	4.3	0.7
	20	5.2	7.5	4.3	0.6	5.0	7.1	3.9	0.8
	Average	4.86	7.36	4.02		5.50	8.02	4.21	
	SE	0.12	0.26	0.10		0.18	0.31	0.11	
	Av L+R	5.16	7.67	4.11					
	SE	0.13	0.21	0.08					
3	11	5.1	7.1	4.3	0.6	5.1	7.8	3.9	0.8
	12	5.8	8.2	5.5	0.6	6.2	11.8	5.1	1.4
	13	4.9	7.1	4.3	0.5	5.1	7.1	4.7	0.5
	14	5.4	7.1	4.3	0.7	5.1	8.2	3.9	0.9
	15	4.5	7.5	3.9	0.8	5.1	7.8	4.7	0.7
	16	4.9	7.1	4.3	0.6	4.9	7.1	4.3	0.6
	17	4.8	7.5	3.9	0.7	5.0	7.5	4.7	0.7
	18	5.4	8.2	4.7	0.6	5.2	6.3	4.7	0.5
	19	5.8	8.2	5.1	0.6	5.2	7.5	4.3	0.6
	20	5.1	7.1	4.3	0.5	5.2	7.8	3.9	0.8
	Average	5.17	7.51	4.46		5.21	7.89	4.42	
	SE	0.14	0.16	0.16		0.11	0.47	0.13	
	Av L+R	5.19	7.70	4.44					
	SE	0.09	0.24	0.10					
4	11					5.1	6.7	4.7	0.5
	12	4.8	7.1	4.3	0.4	5.8	9.8	4.7	1.2
	13	5.2	7.5	4.3	0.6	5.3	7.1	4.7	0.6
	14	4.8	6.7	3.9	0.6	4.9	7.5	3.5	0.6
	15	5.5	7.5	4.7	0.6	5.3	7.8	4.7	0.7
	16	5.3	7.8	4.7	0.7	5.7	10.6	3.9	1.5

	17	5.0	7.8	4.3	0.7	5.5	10.6	4.7	1.3
	18	5.2	7.5	4.3	0.7	5.4	7.5	3.9	0.6
	19	5.1	8.2	4.7	0.7	5.3	7.5	4.7	0.7
	20	5.1	7.1	4.7	0.5	5.6	8.6	4.3	0.9
	Average	5.11	7.47	4.43		5.39	8.37	4.38	
	SE	0.08	0.15	0.09		0.09	0.46	0.14	
	Av L+R	5.26	7.94	4.41					
SE	0.07	0.27	0.09						
5	11	5.2	6.7	4.3	0.5	5.3	7.1	4.7	0.4
	12	5.4	7.5	4.7	0.4	5.5	7.5	4.3	0.5
	13	5.4	6.7	4.7	0.4	5.3	7.1	4.7	0.4
	14	4.9	7.8	4.7	0.6	5.3	8.6	4.3	0.8
	15	5.3	7.5	4.3	0.6	5.4	7.5	4.7	0.5
	16	5.1	6.3	4.3	0.4	4.9	7.5	4.3	0.6
	17	5.2	7.8	4.7	0.6	5.0	7.1	4.3	0.7
	18	5.5	8.2	4.3	0.8	4.9	7.1	4.7	0.5
	19	5.6	7.8	4.7	0.6	4.8	7.1	4.3	0.5
	20	4.6	7.1	3.9	0.6	5.3	7.5	4.7	0.6
	Average	5.22	7.34	4.46		5.17	7.41	4.50	
	SE	0.09	0.19	0.09		0.08	0.15	0.07	
	Av L+R	5.20	7.38	4.48					
SE	0.06	0.12	0.05						
6	11	4.9	6.3	3.9	0.5	5.8	7.8	4.7	1.0
	12	5.0	7.8	3.9	0.8	6.0	8.6	5.1	0.9
	13	5.0	7.1	4.3	0.6	5.5	9.0	4.7	0.9
	14	4.9	6.7	4.3	0.4	5.9	9.0	4.7	0.9
	15	5.7	7.5	4.3	0.6	5.7	8.2	4.3	0.8
	16	4.7	7.5	3.9	0.6	5.6	8.2	4.7	0.6
	17	5.2	7.1	3.5	0.7	6.0	8.6	4.7	0.8
	18	5.8	7.8	5.1	0.6	4.6	6.3	3.9	0.5
	19	4.7	7.5	3.9	0.6	5.1	7.1	4.3	0.5
	20	4.9	6.3	4.7	0.3	5.1	7.1	3.9	0.6
	Average	5.08	7.16	4.18		5.53	7.99	4.50	
	SE	0.12	0.18	0.15		0.15	0.29	0.12	
	Av L+R	5.31	7.58	4.34					
SE	0.11	0.19	0.10						
7	11	5.6	7.8	4.7	0.5	6.1	9.0	5.5	0.9
	12	5.7	7.1	5.1	0.5	5.4	7.8	4.7	0.5
	13	5.4	7.5	4.7	0.5	5.6	7.5	5.1	0.4
	14	5.8	7.5	5.1	0.6	5.4	7.8	4.7	0.7
	15	5.5	7.8	5.1	0.5	5.7	8.2	5.1	0.6
	16	5.1	7.5	4.7	0.6	4.9	6.7	4.3	0.4
	17	5.1	7.8	4.7	0.6	5.2	7.5	4.7	0.7
	18	5.2	7.5	4.7	0.6	5.1	6.7	4.3	0.5

	19	5.3	7.8	4.7	0.7	5.3	7.5	4.7	0.7
	20	5.4	7.1	4.7	0.6	5.1	6.7	4.7	0.4
	Average	5.41	7.54	4.82		5.38	7.54	4.78	
	SE	0.08	0.09	0.06		0.11	0.23	0.12	
	Av L+R	5.40	7.54	4.80					
	SE	0.29	0.54	0.29					
8	11	5.4	9.0	4.3	0.8	5.7	7.8	4.7	0.6
	12	5.3	6.7	4.7	0.4	5.6	7.8	4.3	0.7
	13	5.5	6.7	4.7	0.5	5.8	7.5	4.7	0.7
	14	5.5	7.5	4.7	0.5	6.5	8.6	5.1	0.8
	15	5.2	6.3	3.9	0.5	5.8	7.8	4.7	0.9
	16	5.2	7.5	4.7	0.5	5.0	7.1	3.9	0.8
	17	4.8	7.1	4.3	0.5	5.3	7.8	3.9	0.8
	18	5.5	7.5	4.3	0.8	5.6	7.8	4.3	0.7
	19	4.9	7.5	3.9	0.6	5.5	7.1	4.3	0.6
	20	4.9	6.7	4.7	0.4	5.8	7.8	5.5	0.5
	Average	5.22	7.25	4.42		5.66	7.71	4.54	
	SE	0.09	0.24	0.10		0.12	0.13	0.16	
	Av L+R	5.44	7.48	4.48					
	SE	0.09	0.14	0.09					
9	11	5.2	8.6	4.7	0.8	5.9	7.5	4.3	0.5
	12	4.6	6.3	3.5	0.6	7.2	12.9	5.5	1.7
	13	5.7	8.2	4.7	0.6	6.4	8.6	4.7	0.7
	14	5.3	7.5	4.3	0.9	6.1	9.8	3.9	1.2
	15	5.6	8.2	5.1	0.5	5.7	8.2	5.1	0.5
	16	5.4	7.8	4.7	0.9	5.2	7.5	4.3	0.7
	17	5.4	7.8	4.7	0.6	6.6	10.6	3.9	1.3
	18	6.6	8.6	5.1	1.0	5.4	7.5	4.7	0.6
	19					6.6	10.2	4.7	1.0
	20	5.4	7.5	4.7	0.6	5.2	7.1	4.7	0.6
	Average	5.47	7.83	4.61		6.03	8.99	4.58	
	SE	0.18	0.24	0.16		0.21	0.59	0.16	
	Av L+R	5.76	8.44	4.59					
	SE	0.15	0.35	0.11					
10	11	5.6	9.8	4.7	0.9	6.1	9.0	5.1	0.8
	12	5.5	7.8	4.3	0.9	6.5	12.2	5.1	1.4
	13	6.2	7.8	5.5	0.8	6.2	8.6	5.1	0.8
	14	5.7	10.6	3.9	1.3	5.9	8.6	4.3	0.8
	15	5.9	8.2	5.1	0.7	5.6	7.8	4.7	0.7
	16	6.3	12.9	4.7	1.8	5.9	8.6	5.5	0.7
	17	5.4	10.2	4.7	1.4	5.7	7.8	5.1	0.5
	18	5.7	8.2	4.7	0.7	6.2	8.2	5.5	0.6
	19	5.1	10.6	3.9	1.4	5.9	9.0	4.7	1.0
	20	5.2	7.8	4.7	0.7	6.2	8.2	5.5	0.6

	Average	5.66	9.39	4.62		6.02	8.80	5.06		
	SE	0.12	0.54	0.16		0.09	0.40	0.13		
	Av L+R	5.84	9.10	4.84						
	SE	0.08	0.34	0.11						
11	11	6.2	8.6	5.1	1.0	6.1	9.0	5.5	0.8	
	12	6.3	9.8	5.1	1.0	7.2	12.2	5.5	1.7	
	13	6.0	7.5	3.9	0.7	7.3	9.8	5.9	1.0	
	14	6.0	7.5	4.7	0.7	6.6	8.6	3.9	1.1	
	15	6.6	8.6	5.5	0.7	6.6	12.9	5.5	1.2	
	16	6.4	7.8	4.3	0.8	6.4	7.8	5.5	0.6	
	17	6.1	7.5	5.1	0.8	5.8	8.2	4.7	0.8	
	18	5.2	7.5	4.3	0.9	5.2	7.8	4.7	0.6	
	19	5.9	10.2	4.7	1.3	5.3	7.8	4.7	0.9	
	20	5.8	7.1	4.7	0.6	7.1	14.5	5.5	1.8	
		Average	6.05	8.21	4.74		6.36	9.86	5.14	
		SE	0.12	0.34	0.15		0.24	0.78	0.19	
		Av L+R	6.21	9.04	4.94					
		SE	0.13	0.45	0.13					
12	11	5.9	10.6	4.7	1.2	6.0	8.2	5.1	0.8	
	12	5.2	7.1	3.9	0.6	5.9	7.8	4.7	0.6	
	13	6.1	7.5	5.1	0.7	7.7	9.8	5.9	1.0	
	14	5.4	7.1	3.9	0.6	5.8	7.5	5.1	0.6	
	15	5.6	7.5	4.7	0.5	5.5	7.1	3.9	0.5	
	16	5.3	7.1	3.9	0.6	6.2	7.5	5.5	0.6	
	17	5.5	6.7	4.7	0.4	7.4	12.9	6.3	1.4	
	18	6.1	7.8	5.5	0.7	5.2	7.1	3.9	0.7	
	19	6.3	8.2	5.1	0.7	6.7	8.6	4.3	0.9	
	20	6.4	7.8	5.5	0.7	5.3	7.1	4.3	0.6	
		Average	5.78	7.74	4.70		6.17	8.36	4.90	
		SE	0.14	0.35	0.20		0.27	0.57	0.26	
		Av L+R	5.98	8.05	4.80					
		SE	0.15	0.33	0.16					
13	11	5.0	9.0	3.9	0.9	6.8	14.1	3.9	1.7	
	12	6.1	7.8	5.1	0.7	7.7	10.2	6.3	1.0	
	13	6.3	7.8	5.5	0.7	5.1	7.8	3.5	0.8	
	14	6.3	9.0	4.7	1.2	6.1	9.0	3.9	1.1	
	15	7.0	11.4	5.9	1.1	6.1	7.5	5.3	0.5	
	16	5.8	7.8	5.5	0.6	5.3	7.1	3.5	0.6	
	17	6.7	8.6	5.5	0.7	6.7	9.8	4.7	1.0	
	18	6.3	9.4	5.1	1.2	6.5	9.4	3.9	1.4	
	19	6.3	8.6	5.5	0.8	6.0	8.6	3.1	1.3	
	20	6.1	9.0	5.1	0.7	5.1	7.8	4.3	0.7	
		Average	6.19	8.84	5.18		6.14	9.13	4.24	
		SE	0.17	0.34	0.18		0.26	0.64	0.30	

	Av L+R	6.17	8.99	4.71						
	SE	0.68	1.58	0.90						
14	11	6.4	10.2	5.5	0.9					
	12	5.5	7.1	4.7	0.5					
	13	5.6	7.1	4.7	0.4					
	14	7.6	13.3	5.1	2.6					
	15	5.5	7.5	4.7	0.4					
	16	5.9	7.5	5.5	0.6					
	17	5.4	7.1	4.7	0.6					
	18	5.6	10.2	4.7	1.1					
	19	5.9	8.2	4.3	0.7					
	20	5.8	8.2	4.7	0.7					
		Average	5.92	8.64	4.86					
	SE	0.21	0.64	0.12						
15	11					6.6	11.8	5.5	1.4	
	12					6.8	9.8	5.5	1.2	
	13					7.8	10.2	6.7	0.8	
	14					6.0	8.6	4.3	0.9	
	15									
	16					8.6	10.2	6.3	1.2	
	17					6.0	7.1	5.1	0.5	
	18					6.1	8.6	3.9	0.9	
	19					5.8	8.2	4.7	0.8	
	20					5.9	10.2	5.1	0.9	
		Average					6.62	9.41	5.23	
	SE					0.32	0.47	0.30		
16	11	6.3	10.6	5.5	1.0	6.2	12.2	4.7	1.5	
	12	5.4	7.5	4.7	0.6	7.7	13.7	5.9	1.6	
	13	6.8	11.4	5.5	1.1	6.2	8.2	3.5	1.5	
	14	5.8	7.8	5.5	0.6	6.4	9.0	3.5	1.0	
	15	6.1	7.5	5.5	0.6	6.5	7.8	5.5	0.6	
	16	5.7	9.0	4.7	0.7	5.5	7.1	3.1	0.9	
	17	5.6	8.6	5.1	0.8					
	18	6.2	7.8	5.5	0.6	6.0	7.8	3.9	0.8	
	19	5.3	7.5	4.7	0.8	7.4	12.2	5.9	1.3	
	20	5.8	7.1	5.1	0.6	5.8	7.5	4.7	0.5	
		Average	5.90	8.48	5.18		6.41	9.50	4.52	
		SE	0.14	0.46	0.12		0.24	0.83	0.36	
		Av L+R	6.14	8.96	4.87					
	SE	0.15	0.46	0.19						
17	11	6.3	7.8	5.5	0.5	6.8	10.2	4.7	1.8	
	12									
	13	7.8	12.9	5.9	1.7	7.9	12.9	5.1	1.8	
	14	5.7	7.5	4.7	0.6	7.0	12.5	5.1	1.4	

	15	6.5	8.2	5.1	0.8	6.4	8.6	5.1	0.8
	16	6.2	8.2	4.7	0.7	5.2	7.1	3.1	0.7
	17								
	18	5.8	9.4	4.7	0.9	8.0	14.5	5.9	2.0
	19	6.1	7.8	5.1	0.6	10.4	14.5	6.3	2.6
	20	5.5	7.5	5.1	0.5	5.4	7.1	4.7	0.6
	Average	6.24	8.66	5.10		7.14	10.93	5.00	
	SE	0.25	0.64	0.15		0.59	1.09	0.34	
	Av L+R	6.69	9.79	5.05					
	SE	0.33	0.68	0.18					
18	11	7.3	10.6	5.1	1.6	6.4	9.0	5.1	0.8
	12	6.8	8.2	5.5	0.6	6.1	7.8	4.7	0.5
	13	7.0	9.0	5.9	0.7	6.9	9.4	4.3	0.9
	14	6.4	8.2	5.5	0.6	6.5	8.6	5.1	0.7
	15	5.6	8.6	4.7	1.0	5.9	9.0	4.7	0.9
	16								
	17								
	18	6.1	9.0	4.7	0.8	5.6	8.2	4.7	0.8
	19								
	20	6.1	7.5	5.5	0.7				
	Average	6.47	8.73	5.27		6.23	8.67	4.77	
	SE	0.22	0.37	0.17		0.19	0.24	0.12	
	Av L+R	6.36	8.70	5.04					
	SE	0.15	0.22	0.13					
Control 21to 30 (0.3 Gy/min)									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	21	4.9	7.1	4.3	0.5	5.6	8.6	4.7	1.1
	22	4.3	7.1	3.9	0.7	5.3	7.8	4.3	0.7
	23	4.1	7.1	3.9	0.6	5.1	7.1	4.7	0.6
	24	5.2	7.8	4.7	0.7	6.5	7.8	5.5	0.8
	25	5.0	7.1	4.7	0.6	4.5	6.7	3.9	0.6
	26	5.3	7.1	4.3	0.9	4.7	7.5	3.9	0.5
	27	5.2	7.5	3.5	1.1	5.1	7.8	4.7	0.8
	28	5.5	7.5	4.3	0.6	5.0	7.8	3.1	0.9
	29					5.4	8.2	4.3	1.1
	30					6.3	9.8	5.5	1.3
	Average	4.94	7.29	4.20		5.35	7.91	4.46	
	SE	0.17	0.10	0.15		0.20	0.27	0.23	
	Av L+R	5.17	7.63	4.34					

	SE	0.14	0.17	0.14					
2	21	5.8	7.8	4.7	0.7	5.7	8.2	5.1	0.7
	22	4.8	7.5	3.9	0.5	5.8	9.4	5.1	0.9
	23	5.4	7.5	4.7	0.7	5.5	7.8	4.3	0.6
	24	5.0	7.8	4.7	0.8	4.6	7.5	3.9	0.7
	25	5.6	8.6	4.3	0.8	5.3	7.8	3.9	0.8
	26	6.0	9.0	5.5	0.7	5.8	9.4	5.1	0.9
	27	5.6	8.2	4.7	0.6	5.6	8.2	4.7	0.8
	28	4.9	7.8	3.9	0.7	5.1	9.8	4.3	1.1
	29	4.9	6.7	4.3	0.5	4.8	7.8	3.9	0.7
	30	5.7	7.8	4.3	0.7	5.8	8.6	5.1	0.9
	Average	5.37	7.87	4.50		5.40	8.45	4.54	
	SE	0.14	0.20	0.15		0.14	0.26	0.17	
	Av L+R	5.39	8.16	4.52					
	SE	0.09	0.17	0.11					
3	21	4.8	7.1	3.9	0.6	5.2	7.1	4.3	0.6
	22	5.1	9.0	3.9	1.0	5.5	8.6	3.9	0.9
	23	4.6	7.1	3.9	0.6	4.4	7.1	3.9	0.6
	24	5.3	9.0	4.3	0.8	4.8	7.5	3.9	0.9
	25	4.6	7.1	3.9	0.6	4.9	7.1	3.9	0.5
	26	5.5	8.2	4.7	0.7	5.1	7.5	3.9	0.8
	27	5.3	7.5	4.7	0.5	5.0	7.1	4.3	0.5
	28					5.6	9.4	4.3	1.1
	29	5.3	8.2	4.7	0.7	5.5	8.6	5.1	0.7
	30	5.8	8.6	5.1	0.9	5.7	8.2	5.1	0.6
	Average	5.14	7.98	4.34		5.17	7.82	4.26	
	SE	0.14	0.27	0.16		0.13	0.26	0.15	
	Av L+R	5.16	7.89	4.30					
	SE	0.09	0.18	0.11					
4	21	5	7.8	4.7	0.8	4.9	7.5	3.1	0.6
	22	4.9	7.5	3.5	0.8	5.8	7.8	5.1	0.6
	23	5.5	7.8	4.7	0.7	5.7	8.6	3.9	0.9
	24	5.1	7.8	4.3	0.6	5.5	7.1	5.1	0.4
	25	4.5	5.9	3.9	0.5	5.9	9.0	4.7	0.9
	26	4.9	7.5	4.3	0.6	5.7	7.8	4.7	0.6
	27	5.6	9.8	4.3	0.9				
	28	4.8	7.5	3.9	0.6	5.3	6.2	4.3	0.7
	29	5	7.8	4.7	0.6	4.9	7.8	3.9	0.8
	30	4.8	7.1	3.9	0.5	5.5	7.5	4.3	0.7
	Average	5.01	7.65	4.22		5.47	7.70	4.34	
	SE	0.10	0.30	0.13		0.12	0.27	0.22	
	Av L+R	5.23	7.67	4.28					
	SE	0.09	0.20	0.12					
5	21	5.0	7.5	4.3	0.6	5.1	9.0	4.3	0.8

	22	4.3	6.7	3.5	0.6	6.0	8.2	5.1	0.5
	23	4.9	7.5	4.3	0.6	5.7	12.9	4.7	1.8
	24	4.5	7.1	3.5	0.6	5.4	7.8	4.7	0.7
	25	5.0	7.1	4.7	0.5	5.3	7.5	4.3	0.5
	26	4.5	6.7	4.3	0.4	5.2	7.5	4.7	0.6
	27	4.9	7.8	4.3	0.7	5.7	9.8	4.3	1.1
	28	4.7	6.3	3.9	0.5	5.7	9.4	4.7	1.1
	29	5.0	7.5	4.7	0.6	5.4	7.8	4.3	0.8
	30	5.1	7.5	4.7	0.7	5.7	9.0	4.7	0.9
	Average	4.79	7.17	4.22		5.52	8.89	4.58	
	SE	0.09	0.15	0.14		0.09	0.52	0.09	
	Av L+R	5.16	8.03	4.40					
	SE	0.10	0.33	0.09					
6	21	4.9	7.1	4.3	0.5	5.6	7.8	4.7	0.7
	22	5.0	7.8	4.3	0.8	5.8	9.0	5.1	0.8
	23	5.2	7.1	4.7	0.5	5.7	7.8	5.1	0.5
	24	4.9	7.5	4.3	0.6	6.0	9.4	4.7	1.1
	25	5.6	7.8	4.7	0.7	5.8	8.2	5.1	0.5
	26	4.8	7.5	4.7	0.4	6.1	9.4	5.1	0.9
	27	5.1	7.5	4.7	0.6	5.0	7.1	4.3	0.5
	28	4.9	6.7	4.7	0.4	6.3	9.4	5.5	1.1
	29	5.1	7.8	4.3	0.6	5.6	7.8	5.1	0.5
	30	4.9	6.7	4.3	0.5	5.9	8.2	5.5	0.6
	Average	5.04	7.35	4.50		5.78	8.41	5.02	
	SE	0.07	0.14	0.07		0.11	0.26	0.12	
	Av L+R	5.41	7.88	4.76					
	SE	0.11	0.19	0.09					
7	21	6.8	8.6	5.9	1.0	5.7	7.8	5.1	0.6
	22	5.5	9.0	4.3	1.0	6.8	16.5	4.7	2.3
	23	5.2	12.5	4.7	1.5	6.6	14.9	4.7	2.1
	24	4.9	7.5	3.9	0.6	5.3	7.1	4.3	0.5
	25	5.7	8.2	4.7	0.7	5.8	7.8	5.1	0.5
	26	5.6	7.5	4.7	0.5	5.6	8.2	5.1	0.6
	27	5.3	7.5	4.7	0.5	5.1	8.6	4.3	1.0
	28	5.2	8.2	4.3	0.6	5.9	8.2	4.3	1.1
	29	5.1	7.1	4.3	0.5	5.5	7.1	4.7	0.4
	30	5.1	7.1	3.9	0.6	5.1	7.8	3.9	1.0
	Average	5.44	8.32	4.54		5.74	9.40	4.62	
	SE	0.17	0.51	0.18		0.18	1.07	0.13	
	Av L+R	5.59	8.86	4.58					
	SE	0.13	0.59	0.11					
8	21	5.3	7.1	4.7	0.5	5.9	7.5	5.1	0.5
	22	5.6	8.6	4.7	0.6	6.3	12.9	5.1	1.4
	23	5.5	7.1	5.1	0.4	6.7	9.4	5.5	1.1

	24	5.7	7.5	4.7	0.5	6.3	14.5	4.7	2.3
	25	5.9	9.4	4.7	1.0	5.2	7.1	4.7	0.5
	26	5.7	8.2	4.7	0.8	6.4	9.4	5.5	1.0
	27	5.6	7.5	5.1	0.6	6.3	8.6	4.7	1.3
	28	5.6	7.8	4.7	0.5	5.5	7.1	4.7	0.4
	29	6.1	9.0	5.1	1.0	5.3	7.1	4.7	0.5
	30	5.0	7.8	4.3	0.6	5.4	7.8	4.7	0.6
	Average	5.60	8.00	4.78		5.93	9.14	4.94	
	SE	0.10	0.25	0.08		0.17	0.82	0.11	
	Av L+R	5.77	8.57	4.86					
	SE	0.10	0.44	0.07					
9	21	5.5	7.1	4.7	0.4	6.4	14.1	5.5	1.8
	22	5.5	8.2	4.7	0.5	5.8	7.8	5.1	0.5
	23	5.4	9.4	4.7	0.9	5.4	7.1	4.7	0.4
	24	5.3	7.5	4.7	0.5	6.8	9.0	5.5	0.9
	25	5.7	7.8	5.1	0.5	5.4	7.1	4.3	0.7
	26	4.9	7.1	4.7	0.5	6.1	8.6	5.5	0.8
	27	5.5	7.1	5.1	0.4				
	28	5.1	7.5	4.3	0.6	5.5	7.1	5.1	0.4
	29	5.3	7.8	4.7	0.6	5.6	8.2	4.7	0.7
	30	6.0	8.6	5.5	0.7	5.6	7.8	5.1	0.5
	Average	5.42	7.81	4.82		5.84	8.53	5.06	
	SE	0.10	0.24	0.10		0.16	0.73	0.14	
	Av L+R	5.62	8.15	4.93					
	SE	0.10	0.37	0.09					
10	21	5.7	9.4	4.7	1.2	5.8	7.8	4.7	0.6
	22	5.8	7.5	4.7	0.6	6.5	9.4	5.1	0.9
	23	5.8	7.8	4.7	0.7	6.1	8.6	5.1	0.6
	24	5.5	9.0	4.7	0.8	6.0	8.6	5.1	1.0
	25	5.2	7.1	4.7	0.5	5.8	7.8	5.1	0.5
	26	6.1	8.2	5.5	0.8	5.1	7.5	3.9	0.6
	27	6.1	8.2	5.5	0.7	5.0	7.5	4.3	0.6
	28	4.9	7.1	4.7	0.5	6.7	11.4	5.1	1.6
	29	5.1	7.8	4.3	0.7	5.3	8.2	4.3	0.8
	30	6.2	8.2	5.5	0.7	6.1	8.2	5.1	0.7
	Average	5.64	8.03	4.90		5.84	8.50	4.78	
	SE	0.14	0.24	0.14		0.18	0.37	0.14	
	Av L+R	5.74	8.27	4.84					
	SE	0.11	0.22	0.10					
11	21	6.2	8.6	5.1	0.8	7.0	11.8	4.3	1.8
	22	6.0	9.0	4.7	1.0	5.0	7.1	4.3	0.5
	23	6.1	9.0	4.7	0.8	6.5	7.8	5.5	0.6
	24	5.3	7.1	4.7	0.6	6.0	9.0	4.7	1.0
	25	5.3	7.5	3.9	0.7	6.4	8.6	5.5	0.6

	26	6.2	7.5	5.1	0.7	6.0	7.8	5.1	0.6
	27	6.3	8.6	5.5	0.7	5.9	7.8	5.5	0.5
	28	5.8	8.6	5.1	0.7	6.6	8.6	5.5	0.8
	29	6.1	8.6	5.1	0.8	5.9	10.6	4.7	1.0
	30	6.2	8.6	3.9	0.8	6.1	9.1	5.1	0.9
	Average	5.95	8.31	4.78		6.14	8.82	5.02	
	SE	0.12	0.21	0.17		0.17	0.45	0.16	
	Av L+R	6.05	8.57	4.90					
	SE	0.10	0.25	0.11					
12	21	6.1	9.0	4.7	1.0	5.8	7.8	4.7	0.7
	22	6.6	7.8	5.5	0.6	6.5	8.6	4.7	1.2
	23	6.2	7.8	5.1	0.6	6.0	12.9	4.3	1.8
	24	5.7	8.2	4.7	0.8	8.7	16.5	6.7	2.4
	25	6.5	8.6	5.5	0.8	5.9	8.2	4.7	0.8
	26	5.4	7.8	4.7	0.9	7.1	9.0	5.9	1.0
	27	6.6	9.8	5.1	1.0	5.5	7.1	4.7	0.6
	28	6.2	14.9	4.7	1.8	6.4	9.4	5.5	0.7
	29	5.8	7.5	5.1	0.6	4.9	7.1	3.9	0.6
	30	6.0	7.8	5.5	0.6				
	Average	6.11	8.92	5.06		6.31	9.62	5.01	
	SE	0.13	0.70	0.11		0.36	1.04	0.29	
	Av L+R	6.21	9.25	5.04					
	SE	0.18	0.60	0.14					
13	21	5.6	7.5	4.7	0.9	5.9	7.8	5.1	0.6
	22	6.7	9.0	5.1	1.1	6.0	8.2	4.7	0.7
	23	5.2	7.1	4.3	0.7	6.0	8.2	4.7	0.8
	24	6.3	9.4	5.1	0.8	6.6	12.2	5.1	1.7
	25	6.1	7.5	5.1	0.6	6.5	8.6	5.5	0.7
	26	5.6	8.2	4.7	0.8	5.5	7.1	4.7	0.4
	27	6.3	8.6	5.5	0.6	5.7	7.1	4.7	0.5
	28	6.6	8.6	5.5	0.7	6.9	10.2	5.9	0.9
	29	6.1	11.0	5.1	1.3	5.5	9.0	4.3	0.9
	30								
	Average	6.06	8.54	5.01		6.07	8.71	4.97	
	SE	0.17	0.40	0.13		0.17	0.54	0.16	
	Av L+R	6.06	8.63	4.99					
	SE	0.11	0.33	0.10					
14	21	5.1	7.8	4.3	0.7				
	22	5.9	10.2	3.9	1.8				
	23	5.1	7.5	4.7	0.6				
	24	5.7	7.5	5.1	0.5				
	25	5.3	7.5	4.7	0.7				
	26	7.1	9.4	5.1	1.1				
	27	5.7	14.5	3.9	2.3				

	28	7.3	17.6	5.9	2.4				
	29	5.6	8.2	4.7	0.9				
	30								
	Average	5.87	10.02	4.70					
	SE	0.27	1.21	0.21					
15	21					5.5	8.6	3.9	0.8
	22					6.6	9.0	5.5	0.8
	23					6.1	7.5	5.5	0.5
	24					6.2	9.4	5.5	0.9
	25					5.5	11.0	3.5	1.5
	26					5.9	7.5	5.1	0.6
	27					6.4	7.8	5.1	0.5
	28					7.5	9.8	5.9	1.0
	29					5.5	8.6	4.7	0.8
	30								
		Average					6.13	8.80	4.97
	SE					0.22	0.39	0.27	
16	21	5.9	9.4	4.7	1.0	6.9	8.6	5.9	0.6
	22	7.0	9.4	5.5	0.9	5.8	8.6	4.3	0.9
	23	5.8	11.0	4.7	1.4	7.3	9.4	5.5	1.1
	24	5.8	7.5	5.1	0.6	7.3	11.8	5.5	1.6
	25	6.6	9.0	5.1	1.1	6.2	8.2	5.1	0.9
	26	5.5	6.7	4.7	0.6	6.2	10.6	4.7	1.5
	27	6.3	8.2	5.1	0.8	6.8	8.6	4.3	1.2
	28	6.7	7.8	5.9	0.6	6.1	11.8	5.1	1.1
	29	5.4	7.8	4.7	0.7	6.0	8.6	5.1	0.8
	30								
		Average	6.11	8.53	5.06		6.51	9.58	5.06
	SE	0.19	0.43	0.14		0.19	0.48	0.18	
	Av L+R	6.31	9.06	5.06					
	SE	0.14	0.34	0.11					
17	21	6.5	9.0	5.5	0.7	5.9	8.6	4.7	0.9
	22	6.0	7.8	5.1	0.6	6.1	7.8	4.7	0.8
	23	6.6	9.0	5.9	0.6	7.4	14.1	5.1	2.2
	24	6.1	8.2	5.1	0.7	8.1	16.9	5.5	2.7
	25	5.5	7.1	4.7	0.6	5.3	8.2	4.7	0.8
	26	5.9	7.5	4.7	0.6	6.9	9.8	5.1	1.2
	27	6.2	9.0	4.7	0.9	6.8	9.8	5.1	1.1
	28	5.7	9.0	4.7	0.9	7.5	11.4	5.9	1.6
	29	6.0	8.2	5.5	0.6	6.1	11.0	5.5	1.0
	30								
		Average	6.06	8.31	5.10		6.68	10.84	5.14
	SE	0.12	0.24	0.15		0.30	0.99	0.14	

	Av L+R	6.37	9.58	5.12					
	SE	0.17	0.58	0.10					
18	21	6.6	8.2	5.5	0.7	7.0	9.4	5.5	1.0
	22	8.6	10.6	5.1	1.3	6.2	7.8	5.1	0.7
	23	6.7	10.6	5.5	0.9	5.6	7.1	4.7	0.5
	24	6.4	8.6	5.5	1.0	6.9	9.4	5.1	1.2
	25	5.7	8.2	4.7	0.7	6.0	8.2	5.5	0.7
	26								
	27	6.4	8.2	5.5	0.6	6.3	7.8	5.1	0.6
	28	6.5	9.0	5.5	0.7	5.9	9.4	4.7	0.9
	29	6.8	8.2	5.9	0.7	6.3	8.6	5.1	0.7
	30								
	Average	6.71	8.95	5.40		6.28	8.46	5.10	
	SE	0.29	0.37	0.13		0.17	0.31	0.11	
	Av L+R	6.49	8.71	5.25					
	SE	0.17	0.24	0.09					

Table D.4: Data from Scheimpflug of female C57BL/6 sham-irradiated alongside 0.3 Gy/min ^{60}Co exposures over an 18 month period.

Table D.5: Scheimpflug imaging data from C57BL/6 mice exposed to 0.5 Gy at 0.063 Gy/min (L = Left eye, R = right eye).

0.5 Gy at 0.063 Gy/min									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	1	5.5	7.5	4.7	0.6	5.0	7.1	4.3	0.6
	2					4.7	7.1	3.5	0.6
	3					5.3	9.0	3.5	1.3
	4	4.6	7.8	3.9	0.9	5.7	8.6	4.7	1.1
	5	5.1	7.5	0.7	3.9	5.2	9.0	4.3	1.1
	6	5.6	7.5	4.7	0.7	5.4	9.0	3.9	1.0
	7	5.0	6.7	4.3	0.6	5.0	7.5	3.9	0.6
	8	4.2	6.7	3.1	0.8	5.3	7.8	4.7	0.9
	9	5.2	8.2	3.5	1.1	5.4	8.6	4.7	0.9
	10	5.8	8.6	5.1	0.9	5.5	12.9	4.3	2.0
	Average	5.13	7.56	3.75		5.25	8.66	4.18	
	SE	0.19	0.23	0.50		0.09	0.53	0.15	
	Av L+R	5.19	8.17	3.99					
	SE	0.10	0.33	0.23					
2	1	4.9	6.7	3.9	0.6	5.6	10.6	4.3	1.4
	2	5.5	7.1	4.7	0.4	5.3	6.7	4.7	0.5
	3	4.9	7.1	4.3	0.5	5.5	8.6	4.3	0.9
	4	5.6	7.8	4.7	0.5	5.3	8.6	4.3	1.1
	5	5.6	8.2	3.5	0.9	4.4	7.5	3.9	0.8
	6	5.0	7.5	3.9	0.8	5.1	7.8	4.7	0.8
	7	5.0	7.8	3.9	0.7	5.6	10.2	4.7	1.2
	8	4.9	7.5	4.3	0.5	5.5	10.6	4.7	1.5
	9	5.0	7.8	4.7	0.6	5.1	7.5	4.7	0.6
	10	5.1	7.8	4.7	0.7	4.9	7.8	4.3	0.6
	Average	5.15	7.53	4.26		5.23	8.59	4.46	
	SE	0.09	0.14	0.14		0.12	0.45	0.09	
	Av L+R	5.19	8.06	4.36					
	SE	0.07	0.26	0.08					
3	1	5.3	7.1	4.3	0.5	5.2	7.8	4.3	0.6
	2	5.3	8.2	3.9	0.8	4.9	7.8	4.3	0.7
	3	5.2	7.5	3.9	0.6	5.0	7.5	3.9	0.7
	4	4.8	7.1	3.9	0.6	5.6	9.0	3.9	1.0
	5	5.1	7.5	4.3	0.5	5.8	12.5	5.1	1.4
	6	6.7	9.0	5.1	1.1	5.4	7.5	4.7	0.4
	7	4.9	7.8	4.3	0.7	5.4	7.8	4.7	0.6
	8	4.5	7.1	3.9	0.7	5.5	7.1	4.7	0.4
	9	5.4	7.8	4.3	0.7	5.4	7.5	4.7	0.4
	10	4.7	7.5	3.5	0.8	5.3	8.2	4.7	0.7

	Average	5.19	7.66	4.14		5.35	8.27	4.50		
	SE	0.09	0.14	0.14		0.12	0.45	0.09		
	Av L+R	5.27	7.97	4.32						
	SE	0.10	0.27	0.10						
4	1	5.0	8.2	3.9	0.9	5.4	7.8	4.7	0.6	
	2	5.4	7.8	4.7	0.7	5.5	8.2	4.3	0.7	
	3	5.6	7.8	4.7	0.7	5.6	8.2	4.7	0.8	
	4	5.4	7.8	4.3	0.7	5.8	10.6	4.3	1.4	
	5	4.6	7.1	3.9	0.6	6.0	10.2	4.7	1.2	
	6	4.4	7.1	3.9	0.6	5.5	11.4	3.9	1.5	
	7	5.0	7.5	4.7	0.5	5.0	7.5	4.7	0.5	
	8	4.5	7.1	3.9	0.7	5.9	7.8	3.9	0.8	
	9	4.9	6.7	4.7	0.5	5.6	7.8	3.9	0.7	
	10	5.1	8.2	4.7	0.7	5.3	7.5	4.7	0.5	
		Average	4.99	7.53	4.34		5.56	8.70	4.38	
		SE	0.13	0.16	0.13		0.09	0.46	0.12	
		Av L+R	5.28	8.12	4.36					
		SE	0.10	0.27	0.08					
5	1	4.7	7.5	3.9	0.8	5.1	7.1	4.3	0.5	
	2	4.8	7.5	4.3	0.5	5.3	8.2	4.7	0.8	
	3	4.8	7.8	3.5	0.7	5.0	7.5	4.7	0.5	
	4	4.9	7.5	4.7	0.5	5.1	7.8	4.3	0.6	
	5	4.8	7.1	4.3	0.5	5.2	10.6	4.3	1.6	
	6	4.8	6.7	3.9	0.4	5.4	8.2	4.7	0.7	
	7	4.9	6.7	4.3	0.4	5.1	9.0	4.7	0.8	
	8	5.1	7.8	4.7	0.6	5.4	7.8	4.7	0.7	
	9	4.3	6.7	3.9	0.7	5.8	7.5	4.7	0.5	
	10	5.1	7.8	4.7	0.7	5.3	7.8	4.7	0.6	
		Average	4.82	7.31	4.22		5.27	8.15	4.58	
		SE	0.07	0.15	0.13		0.07	0.32	0.06	
		Av L+R	5.05	7.73	4.40					
		SE	0.07	0.20	0.08					
6	1	4.9	7.1	3.9	0.7	5.2	7.8	4.7	0.7	
	2	5.3	7.8	4.3	0.6	5.4	8.2	4.3	1.0	
	3	5.0	7.1	4.3	0.6	5.3	7.8	4.7	0.7	
	4	5.1	7.1	4.3	0.6	5.0	7.8	4.7	0.7	
	5	4.5	6.7	3.9	0.6	5.5	7.5	4.7	0.5	
	6	6.0	10.2	3.9	1.3	5.3	8.2	4.7	0.6	
	7	5.1	7.8	4.7	0.7	5.0	7.1	3.9	0.5	
	8	5.6	8.2	4.7	0.6	5.9	9.0	4.7	0.8	
	9	4.6	7.1	3.9	0.6	5.6	7.5	4.3	0.7	
	10	4.6	6.3	3.9	0.5	6.1	12.2	4.7	1.7	
		Average	5.07	7.54	4.18		5.43	8.31	4.54	
		SE	0.15	0.34	0.10		0.11	0.46	0.09	

	Av L+R	5.25	7.93	4.36					
	SE	0.10	0.29	0.08					
7	1	4.6	7.1	3.9	0.5	4.9	6.7	3.9	0.6
	2	5.1	6.7	4.7	0.6	5.2	7.5	3.9	0.5
	3	5.6	7.5	5.1	0.5	5.4	7.5	4.7	0.5
	4	5.3	7.5	4.7	0.6	5.0	7.5	4.3	0.7
	5	5.8	7.8	5.5	0.6	5.7	10.2	5.1	0.9
	6	5.7	8.6	4.7	1.1	5.7	8.2	4.3	0.8
	7	5.5	7.1	4.7	0.3	5.7	9.0	5.1	0.7
	8	5.5	7.8	4.7	0.5	4.8	7.1	3.9	0.7
	9	5.3	7.5	4.7	0.6	5.4	7.5	4.3	0.7
	10	5.6	6.7	4.7	0.4	5.4	7.1	4.7	0.7
	Average	5.40	7.43	4.74		5.32	7.83	4.42	
	SE	0.11	0.18	0.13		0.11	0.33	0.15	
	Av L+R	5.36	7.63	4.58					
	SE	0.08	0.19	0.10					
8	1	5.4	8.2	4.7	0.6	5.0	7.5	4.7	0.5
	2	5.0	6.3	3.9	0.5	5.8	7.8	4.7	0.9
	3	5.3	7.1	4.3	0.5	5.0	7.5	4.3	0.6
	4	5.2	7.5	4.3	0.6	5.4	7.8	4.7	0.8
	5	5.6	9.0	4.3	1.2	5.8	7.8	5.1	0.6
	6	4.9	7.1	3.9	0.7	5.4	8.2	4.3	0.7
	7	5.5	7.5	4.7	0.6	5.7	8.6	3.9	0.9
	8	5.2	7.8	4.3	0.7	5.8	7.8	4.7	0.7
	9	6.2	8.2	5.5	0.7	6.1	7.8	4.7	0.6
	10	5.6	7.8	4.7	0.9	5.3	7.1	4.7	0.5
	Average	5.39	7.65	4.46		5.53	7.79	4.58	
	SE	0.12	0.23	0.15		0.12	0.13	0.10	
	Av L+R	5.46	7.72	4.52					
	SE	0.08	0.13	0.09					
9	1	5.1	7.8	4.7	0.7	6.7	8.2	5.5	0.9
	2	5.8	7.1	5.1	0.5	6.1	8.2	4.7	1.0
	3	6.2	9.4	5.5	0.9	5.1	7.8	3.1	1.2
	4	5.2	7.1	4.7	0.6	5.7	7.8	5.1	0.6
	5	5.4	7.8	3.9	0.7	5.2	7.8	4.7	0.6
	6	4.9	7.1	3.9	0.6	6.4	8.6	4.7	0.7
	7	5.9	8.2	4.7	0.7	5.0	7.1	3.9	0.6
	8	5.3	7.1	4.3	0.4	5.7	9.0	4.7	1.1
	9	5.6	7.8	5.1	0.6	5.7	7.1	4.3	0.5
	10	5.0	7.1	4.3	0.5	5.6	7.1	4.7	0.5
	Average	5.44	7.65	4.62		5.72	7.87	4.54	
	SE	0.13	0.23	0.17		0.17	0.21	0.21	
	Av L+R	5.58	7.76	4.58					
	SE	0.11	0.15	0.13					

10	1	5.6	7.8	5.1	0.4	5.5	7.5	4.7	0.6
	2	5.6	7.5	5.1	0.6	5.6	8.2	4.7	0.6
	3	5.2	7.5	4.3	0.6	5.4	9.4	4.7	0.7
	4	5.2	7.1	4.3	0.5	5.3	7.8	4.7	0.7
	5	5.7	7.5	5.1	0.5	5.9	7.5	5.1	0.5
	6	6.4	11.0	4.7	1.5	6.7	10.6	5.1	1.1
	7	5.5	11.0	4.7	1.3	6.0	7.8	5.5	0.6
	8	5.0	7.5	4.7	0.5	6.6	11.8	5.5	1.6
	9	5.6	7.8	4.7	0.7	5.8	8.6	5.1	0.7
	10	5.9	9.0	4.7	0.8	6.4	9.0	6.5	0.6
	Average	5.57	8.37	4.74		5.92	8.82	5.16	
	SE	0.13	0.47	0.09		0.16	0.45	0.18	
	Av L+R	5.75	8.60	4.95					
	SE	0.11	0.32	0.11					
11	1	6.3	9.0	5.5	0.7	6.0	8.2	4.3	0.6
	2	5.3	7.8	4.7	0.7	6.5	10.2	5.1	1.5
	3	6.1	11.0	4.7	1.8	6.5	8.2	5.1	0.6
	4	6.4	9.0	5.5	0.6	6.2	8.2	5.5	0.7
	5	6.6	8.2	5.5	0.6	7.5	10.6	5.1	1.6
	6	5.1	7.1	4.3	0.5	6.0	7.1	5.1	0.6
	7	6.1	7.8	5.1	0.6	5.0	7.1	4.3	0.5
	8	6.1	8.2	4.7	0.8	6.8	8.6	5.1	1.1
	9	6.4	8.6	5.1	0.9	7.0	9.4	4.7	1.0
	10	6.1	8.2	5.5	0.7	5.1	7.5	3.9	0.6
	Average	6.05	8.49	5.06		6.26	8.51	4.82	
	SE	0.15	0.33	0.14		0.25	0.38	0.16	
	Av L+R	6.16	8.50	4.94					
	SE	0.14	0.25	0.11					
12	1	5.5	7.1	4.7	0.5	5.4	7.5	4.7	0.6
	2	5.0	6.3	4.3	0.4	6.2	9.8	4.7	1.1
	3	5.9	8.2	5.5	0.6	5.0	8.2	4.3	0.8
	4	6.1	7.8	5.1	0.7	5.3	8.6	4.7	0.9
	5	5.3	7.1	4.7	0.5	6.3	8.2	5.5	0.6
	6	6.4	7.8	5.5	0.5	4.9	7.1	3.9	0.6
	7					5.6	8.6	5.1	0.6
	8	6.2	7.8	5.1	0.6	5.8	7.5	4.3	0.8
	9	5.3	7.5	4.7	0.6	5.8	7.5	4.7	0.6
	10	6.2	7.8	5.1	0.5	5.3	7.1	4.3	0.7
	Average	5.77	7.49	4.97		5.56	8.01	4.62	
	SE	0.17	0.19	0.13		0.15	0.27	0.14	
	Av L+R	5.61	7.78	4.75					
	SE	0.11	0.17	0.10					
13	1	5.5	7.8	3.9	1.0	6.5	10.2	4.7	1.1
	2	6.3	9.4	5.1	1.0	5.8	9.0	4.7	0.8

	3	6.0	8.2	5.1	0.7	6.3	8.2	5.1	0.7
	4	5.4	7.5	4.3	0.7	5.5	7.1	4.7	0.6
	5	5.8	9.4	4.7	1.3	5.9	7.8	4.7	0.7
	6	6.4	8.6	5.5	0.8	6.9	9.0	5.9	0.8
	7	6.3	7.5	5.5	0.6	5.2	7.1	4.3	0.7
	8	6.0	7.5	5.1	0.5	6.4	9.0	5.1	0.8
	9					5.4	6.7	4.3	0.7
	10	5.8	8.2	5.1	0.6	6.1	8.2	5.1	0.7
	Average	5.94	8.23	4.92		6.00	8.23	4.86	
	SE	0.12	0.25	0.18		0.17	0.35	0.15	
	Av L+R	5.97	8.23	4.89					
	SE	0.45	0.92	0.49					
14	1	5.8	7.8	5.5	0.5				
	2	6.3	8.2	4.3	0.9				
	3	5.6	8.2	4.7	0.6				
	4	5.2	7.1	4.3	0.6				
	5	7.2	11.0	5.5	1.6				
	6	5.5	7.5	4.7	0.5				
	7								
	8	5.9	7.8	4.7	0.6				
	9								
	10	6.1	9.4	5.1	1.0				
	Average	5.95	8.38	4.85					
	SE	0.22	0.44	0.17					
15	1					6.3	7.8	5.5	0.5
	2					5.8	7.8	3.9	0.7
	3					5.9	7.1	5.1	0.5
	4					5.8	7.8	4.7	0.7
	5					6.1	7.1	5.1	0.7
	6					6.7	7.5	5.5	0.5
	7					5.5	7.8	4.7	0.7
	8					7.0	11.8	5.1	1.5
	9								
	10					6.0	9.0	5.1	0.6
	Average					6.12	8.19	4.97	
	SE					0.16	0.49	0.16	
16	1	6.0	8.6	4.3	0.7	5.5	7.1	4.7	0.6
	2	6.1	8.2	4.7	0.7	7.2	10.2	4.7	1.6
	3	5.9	8.6	5.1	0.8	6.8	8.6	5.5	0.7
	4	6.0	7.8	5.1	0.7	5.9	7.5	4.7	0.7
	5	5.4	7.1	4.7	0.5	6.0	7.1	5.1	0.6
	6	7.2	14.1	5.9	1.5	5.9	7.8	4.7	0.6
	7	5.1	7.8	4.7	0.7	5.8	11.4	4.7	1.6
	8	6.1	7.8	4.7	0.6	7.2	13.7	5.1	1.7

	9								
	10	6.6	8.6	5.9	0.7	6.1	7.8	3.9	1.2
	Average	6.04	8.73	5.01		6.27	9.02	4.79	
	SE	0.20	0.69	0.19		0.21	0.76	0.15	
	Av L+R	6.16	8.88	4.90					
	SE	0.14	0.50	0.12					
17	1	5.8	8.6	4.7	1.0	6.9	10.6	5.9	1.1
	2								
	3	6.3	8.6	5.1	0.6	5.8	7.8	5.1	0.6
	4	6.1	7.8	5.5	0.6	6.1	7.8	5.1	0.7
	5	6.3	11.0	4.7	1.4	6.3	11.8	5.1	1.3
	6	7.0	9.8	5.9	0.8	6.4	8.2	5.1	0.6
	7	5.5	7.1	4.7	0.5	6.3	7.8	5.5	0.6
	8	6.3	8.2	5.5	0.8	7.1	12.9	5.1	1.5
	9								
	10	5.7	7.5	4.7	0.7	5.7	7.1	3.9	0.8
	Average	6.13	8.58	5.10		6.33	9.25	5.10	
	SE	0.17	0.45	0.17		0.17	0.78	0.20	
	Av L+R	6.23	8.91	5.10					
	SE	0.12	0.44	0.13					
18	1	6.9	9.0	5.5	0.9	5.9	7.8	4.7	0.8
	2								
	3	6.8	9.8	5.9	0.9	6.4	7.8	5.5	0.6
	4	6.5	9.0	5.1	0.7	7.9	14.1	5.5	2.0
	5	7.0	13.3	5.9	1.3	6.3	7.8	5.1	0.8
	6	7.3	14.1	5.9	1.6	6.6	9.8	4.7	1.2
	7	6.5	7.8	4.3	0.7	5.7	7.1	5.1	0.5
	8	6.8	11.8	5.1	1.6	6.1	8.6	4.3	1.0
	9								
	10	5.8	7.1	3.9	0.6	6.5	9.4	5.5	1.1
	Average	6.70	10.24	5.20		6.43	9.05	5.05	
	SE	0.16	0.90	0.27		0.24	0.79	0.16	
	Av L+R	6.56	9.64	5.13					
	SE	0.14	0.60	0.15					

Table D.5: Data from Scheimpflug of female C57BL/6 irradiated with 0.5 Gy at 0.063 Gy/min exposure over an 18 month period.

Table D.6: Scheimpflug imaging data from C57BL/6 mice exposed to 1 Gy at 0.063 Gy/min (L = Left eye, R = right eye).

1.0 Gy at 0.063 Gy/min									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	1	5.4	7.1	4.7	0.7	5.2	7.8	4.7	0.8
	2					5.6	7.8	4.7	0.6
	3	5.3	6.7	4.7	0.7	4.9	7.8	3.9	0.9
	4	5.1	7.1	3.9	1.0	5.4	7.8	4.7	0.7
	5	5.0	7.5	3.9	0.7	5.5	7.8	3.5	0.8
	6	4.9	6.7	3.9	0.6	5.2	7.1	4.7	0.5
	7	5.3	7.8	4.3	0.7	5.1	7.5	4.3	0.7
	8	5.4	7.1	4.7	0.5	5.6	7.8	5.1	0.5
	9	5.0	7.1	4.3	0.5	5.8	8.6	5.1	0.8
	10	5.6	7.5	5.1	0.5	5.1	8.2	3.9	0.9
	Average	5.22	7.18	4.39		5.34	7.82	4.46	
	SE	0.08	0.12	0.15		0.09	0.12	0.17	
	Av L+R	5.28	7.52	4.43					
	SE	0.06	0.11	0.11					
2	1	5.4	7.1	4.3	0.4	4.3	6.7	3.9	0.6
	2	5.3	7.8	4.3	0.6	4.5	7.1	3.9	0.6
	3	5.0	7.8	4.3	0.7	4.5	7.1	3.9	0.6
	4	4.5	7.1	3.9	0.6	5.8	8.6	4.7	0.9
	5	4.7	6.7	3.9	0.5	5.2	7.1	4.3	0.6
	6	5.5	7.5	4.7	0.5	5.3	8.2	3.9	0.8
	7	6.2	9.4	5.5	1.0	5.2	7.5	4.3	0.7
	8	5.0	7.8	4.7	0.8	5.2	7.8	4.3	0.7
	9	5.6	7.8	4.7	0.5	5.4	9.0	3.5	1.0
	10	4.9	7.8	4.3	0.7	5.3	8.2	4.3	0.7
	Average	5.21	7.68	4.46		5.07	7.73	4.10	
	SE	0.16	0.23	0.15		0.15	0.24	0.11	
	Av L+R	5.14	7.71	4.28					
	SE	0.11	0.16	0.10					
3	1	4.7	6.7	3.9	0.5	5.5	7.8	4.3	0.5
	2	5.8	8.6	3.9	1.0	5.1	10.2	3.9	1.3
	3	5.4	7.5	4.3	0.6	5.2	7.1	4.3	0.5
	4	5.5	8.6	4.3	0.7				
	5	5.6	7.5	4.3	0.6	5.7	10.6	4.3	1.1
	6	5.5	7.1	4.7	0.5	5.2	7.8	3.9	0.8
	7	5.8	8.2	4.7	0.6	5.8	8.6	5.5	0.7
	8	5.3	8.2	4.3	0.9	5.7	8.6	4.3	0.7
	9	5.9	8.6	5.1	0.9	5.2	8.2	4.7	0.7
	10	5.5	7.5	4.3	0.5	4.9	7.8	4.3	0.6
	Average	5.50	7.85	4.38		5.37	8.52	4.39	

	SE	0.11	0.22	0.12		0.11	0.39	0.16	
	Av L+R	5.44	8.17	4.38					
	SE	0.08	0.22	0.09					
4	1	5.3	7.8	4.7	0.6	5.3	7.5	4.7	0.5
	2	5.5	9.0	4.7	0.6	5.6	9.0	3.9	1.1
	3	5.3	7.1	4.3	0.5	5.5	7.8	4.7	0.5
	4	6.5	9.0	4.7	1.0	5.4	7.1	4.7	0.5
	5	4.5	6.7	3.9	0.6	5.2	7.8	4.3	0.6
	6	4.9	7.1	3.9	0.5	5.8	9.0	4.7	0.9
	7	4.8	6.7	4.3	0.4	5.6	7.5	4.7	0.5
	8	4.8	7.1	4.3	0.5	5.6	8.2	4.3	0.8
	9	5.4	8.2	4.7	0.7	5.9	9.0	4.7	0.9
	10	4.8	7.5	4.3	0.5	5.0	7.1	3.9	0.5
	Average	5.18	7.62	4.38		5.49	8.00	4.46	
	SE	0.18	0.27	0.10		0.09	0.24	0.11	
	Av L+R	5.34	7.81	4.42					
	SE	0.10	0.18	0.07					
5	1	4.4	5.5	3.9	0.4	5.6	7.8	4.7	0.7
	2	5.6	9.4	4.7	1.0	5.5	7.1	4.7	0.5
	3	5.4	7.8	4.7	0.6	4.9	7.1	3.9	0.5
	4	4.9	6.7	4.3	0.4	4.9	7.8	4.3	0.7
	5	5.3	7.1	4.7	0.5	5.0	7.8	4.3	0.7
	6	5.2	7.8	4.7	0.6	5.1	7.5	3.9	0.7
	7	5.2	7.8	4.7	0.6	5.6	8.2	4.7	0.7
	8	4.8	7.1	3.9	0.5	5.2	7.1	4.3	0.5
	9	5.3	7.8	4.7	0.6	5.8	8.2	5.1	0.6
	10	5.7	7.8	4.7	0.7	4.8	7.1	3.9	0.7
	Average	5.18	7.48	4.50		5.24	7.57	4.38	
	SE	0.12	0.32	0.11		0.11	0.14	0.13	
	Av L+R	5.21	7.53	4.44					
	SE	0.08	0.17	0.08					
6	1	5.1	7.1	4.7	0.5	5.1	7.5	4.3	0.6
	2	4.6	7.1	3.9	0.6	5.4	7.1	4.7	0.5
	3	4.9	7.5	4.7	0.5	5.9	8.6	5.1	0.7
	4	6.0	8.2	5.5	0.7	5.3	8.6	4.7	1.0
	5	5.7	8.2	5.1	0.6	5.2	7.5	4.7	0.7
	6	5.1	7.1	4.3	0.5	5.1	7.5	4.7	0.6
	7	5.1	7.1	4.3	0.5	5.1	7.8	4.7	0.6
	8	5.3	7.5	4.7	0.5	5.9	8.2	5.5	0.7
	9	4.5	6.7	3.9	0.6	5.3	7.1	4.7	0.6
	10	5.6	7.8	4.7	0.5	5.0	7.1	4.7	0.5
	Average	5.19	7.43	4.58		5.33	7.70	4.78	
	SE	0.15	0.16	0.16		0.10	0.18	0.10	
	Av L+R	5.26	7.57	4.68					

	SE	0.09	0.12	0.09					
7	1	4.8	7.8	4.7	0.5	5.7	7.8	4.7	0.7
	2	5.5	7.8	4.3	0.6	5.1	7.8	4.7	0.7
	3	4.8	6.7	4.3	0.4	5.8	9.0	4.7	1.0
	4	4.9	7.1	4.3	0.5	6.0	7.8	5.1	0.6
	5	5.2	7.5	4.3	0.7	5.6	8.6	5.1	0.6
	6	5.4	7.1	4.7	0.5	5.6	7.5	4.7	0.6
	7	5.5	7.1	5.1	0.4	5.4	8.2	4.3	0.9
	8	5.5	7.1	4.7	0.4	5.9	10.2	4.7	1.2
	9	5.5	7.5	5.1	0.4	5.5	7.1	4.7	0.4
	10	5.5	7.5	4.7	0.6	5.5	7.5	4.7	0.4
	Average	5.26	7.32	4.62		5.61	8.15	4.74	
	SE	0.10	0.11	0.10		0.08	0.29	0.07	
	Av L+R	5.44	7.74	4.68					
	SE	0.07	0.18	0.06					
8	1	5.3	7.8	4.7	0.8	5.5	7.1	4.7	0.6
	2	5.0	7.8	4.3	0.9	5.6	8.2	4.3	0.8
	3	5.1	7.8	4.7	0.7	5.6	7.5	5.1	0.4
	4	5.5	8.6	4.7	1.0	6.0	7.5	5.5	0.6
	5	5.6	7.8	4.7	0.7	5.7	8.6	4.7	1.0
	6	5.2	7.5	4.7	0.7	6.4	9.8	5.5	1.5
	7	5.0	7.1	3.9	0.7	5.7	7.5	5.1	0.4
	8	5.3	7.8	4.3	0.7	6.1	8.2	4.7	0.6
	9	5.6	9.8	4.3	1.3	5.8	7.1	4.7	0.6
	10	6.0	8.6	5.1	0.6	5.3	7.1	4.3	0.4
	Average	5.36	8.06	4.54		5.77	7.86	4.86	
	SE	0.10	0.24	0.11		0.10	0.27	0.14	
	Av L+R	5.57	7.96	4.70					
	SE	0.08	0.18	0.09					
9	1	5.8	8.2	4.7	0.7	6.4	12.2	3.9	1.7
	2	5.7	7.5	4.7	0.7	6.1	10.6	5.1	0.9
	3	5.2	8.6	3.9	1.3	5.4	7.1	4.7	0.4
	4	5.7	7.8	4.7	0.6	6.0	7.5	5.5	0.6
	5	5.7	7.8	4.7	0.7	5.8	7.8	5.5	0.7
	6	5.8	7.8	5.5	0.5	6.4	11.4	5.1	1.2
	7	6.1	8.2	5.1	0.7	5.1	7.1	4.3	0.6
	8	5.6	7.5	5.1	0.5	6.3	9.8	5.1	0.8
	9	6.0	8.2	5.5	0.7	5.4	7.8	4.7	0.5
	10	5.2	7.5	4.7	0.6	5.9	8.2	5.1	0.6
	Average	5.68	7.91	4.86		5.88	8.95	4.90	
	SE	0.09	0.12	0.15		0.14	0.60	0.16	
	Av L+R	5.78	8.43	4.88					
	SE	0.09	0.32	0.11					
10	1	5.6	7.8	4.3	0.6	6.1	7.8	5.5	0.5

	4	5.9	7.8	5.1	0.5	6.7	10.2	3.9	1.2
	5	5.1	6.7	4.7	0.6	5.9	7.5	5.1	0.6
	6	5.2	7.1	4.3	0.6	6.8	9.4	5.1	1.3
	7	6.3	8.6	5.5	0.8	6.2	8.2	4.7	0.6
	8	6.4	7.8	5.5	0.6	6.5	9.0	5.5	0.7
	9	6.2	7.8	4.7	0.8	6.3	7.5	5.5	0.6
	10	5.6	8.2	4.7	0.8	6.3	7.8	5.5	0.5
	Average	5.89	8.31	4.92		6.41	9.07	5.10	
	SE	0.20	0.70	0.16		0.12	0.51	0.20	
	Av L+R	6.15	8.69	5.01					
	SE	0.13	0.43	0.13					
14	1	5.5	7.5	4.3	0.8				
	2	5.4	6.7	4.3	0.4				
	3	5.6	11.8	4.7	1.4				
	4	6.1	9.4	5.1	0.7				
	5	6.0	7.5	5.1	0.5				
	6	5.5	7.8	4.7	0.7				
	7	6.3	9.0	5.5	1.0				
	8	5.9	8.2	5.1	0.7				
	9	6.3	8.6	5.1	0.8				
	10	5.2	7.5	4.3	0.8				
	Average	5.78	8.40	4.82					
	SE	0.12	0.46	0.13					
15	1					6.8	9.4	4.7	1.2
	2					6.2	7.8	5.1	0.7
	3					6.6	9.0	4.7	1.0
	4					6.8	8.6	5.5	0.8
	5					6.3	9.4	5.1	0.8
	6					6.3	8.6	5.5	0.7
	7					5.7	7.1	5.1	0.5
	8					5.8	7.5	4.7	0.6
	9					6.5	7.8	5.9	0.5
	10					6.9	9.8	5.9	1.0
	Average					6.39	8.50	5.22	
	SE					0.13	0.29	0.15	
16	1	6.1	7.8	5.5	0.6	5.9	7.5	5.1	0.6
	2	6.5	8.6	5.5	0.9	6.0	7.5	5.5	0.7
	3	5.8	7.1	5.1	0.4	5.4	6.7	4.7	0.6
	4	5.9	7.5	5.5	0.6	5.2	7.1	4.3	0.7
	5	6.1	11.4	4.7	1.2	6.0	9.0	4.3	0.9
	6	6.2	11.0	4.7	1.6				
	7	5.8	8.2	4.7	0.7				
	8	6.6	7.8	5.5	0.6				
	9	6.8	9.8	5.9	0.8				

	10	5.4	8.2	3.9	0.9	6.2	8.2	4.7	0.8	
	Average	6.12	8.74	5.10		5.78	7.67	4.77		
	SE	0.13	0.47	0.19		0.16	0.34	0.19		
	Av L+R	5.99	8.34	4.98						
	SE	0.11	0.34	0.14						
17	1	5.4	7.5	4.7	0.6	6.5	9.4	5.1	1.1	
	2	6.4	9.0	5.1	1.2	5.9	7.5	4.7	1.0	
	3	5.8	7.5	4.7	0.6	6.3	8.6	5.1	0.9	
	4	6.0	7.5	5.5	0.6	6.0	7.8	5.1	0.6	
	5	5.7	8.6	4.3	0.8	7.0	11.4	4.7	2.0	
	6	6.7	8.6	5.5	0.7	6.4	10.2	5.1	1.1	
	7					6.1	8.2	4.7	0.9	
	8	6.4	7.8	5.5	0.6	6.4	9.4	5.1	0.9	
	9	5.4	9.4	3.9	1.3	6.6	8.2	5.5	0.6	
	10	5.5	7.5	4.7	0.9					
		Average	5.92	8.16	4.88		6.36	8.97	5.01	
		SE	0.16	0.25	0.19		0.11	0.42	0.09	
		Av L+R	6.14	8.56	4.94					
	SE	0.11	0.26	0.10						
18	1	6.4	8.2	5.5	0.8	6.7	10.6	5.5	1.0	
	2	6.5	8.6	3.9	1.4	5.4	10.6	4.7	1.1	
	3	7.3	9.4	5.5	0.9	6.7	8.6	5.5	0.7	
	4	6.6	10.2	5.5	1.4	5.9	7.5	5.5	0.6	
	5	6.4	10.6	5.5	1.3	6.4	8.2	5.5	0.8	
	6	6.0	8.2	5.1	0.7	5.3	6.7	4.7	0.7	
	7	7.1	11.0	5.5	1.2	6.8	7.8	5.5	0.7	
	8	5.7	7.8	4.7	0.8	6.9	10.2	5.5	0.9	
	9	6.8	7.8	5.5	0.7	6.4	7.5	5.5	0.6	
	10	6.3	8.2	5.1	0.9	5.7	6.7	4.7	0.5	
		Average	6.51	9.00	5.18		6.22	8.44	5.26	
		SE	0.15	0.38	0.17		0.19	0.48	0.12	
		Av L+R	6.37	8.72	5.22					
	SE	0.12	0.31	0.10						

Table D.6: Data from Scheimpflug of female C57BL/6 irradiated with 0.5 Gy ^{60}Co delivered at 0.063 Gy/min over an 18 month period.

Table D.7: Scheimpflug imaging data from C57BL/6 mice exposed to 2 Gy at 0.063 Gy/min (L = Left eye, R = right eye).

2.0 Gy at 0.063 Gy/min									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	1	4.5	7.5	3.5	0.7	5.5	7.8	4.7	0.8
	2	5.7	7.5	4.3	0.6	5.3	7.8	4.7	0.7
	3	4.1	6.3	3.1	0.6	3.9	5.9	3.1	0.4
	4	5.2	7.8	3.1	1.4	5.5	8.6	4.7	1.1
	5	5.7	8.2	5.1	0.8	5.1	7.1	4.3	0.6
	6	4.7	7.5	3.9	0.7	5.2	9.8	3.9	1.0
	7	4.4	6.7	3.9	0.6	5.1	7.5	3.9	0.7
	8	5.4	7.8	4.7	0.8	4.7	7.1	3.9	0.6
	9	5.3	7.8	4.7	0.8	4.4	7.1	3.5	0.8
	10					5.6	7.8	4.7	0.6
	Average	5.00	7.46	4.03		5.03	7.65	4.14	
	SE	0.20	0.20	0.24		0.17	0.33	0.18	
	Av L+R	5.02	7.56	4.09					
	SE	0.13	0.19	0.14					
2	1	5.8	9.4	4.7	0.9	5.6	8.2	4.7	1.0
	2	5.8	7.5	4.7	0.7	5.0	7.5	4.3	0.7
	3	5.0	7.1	4.3	0.6	5.5	7.8	3.9	0.6
	4	5.7	9.4	4.7	0.9	4.9	7.1	3.9	0.5
	5	5.1	7.1	4.7	0.7	5.3	8.2	4.7	0.8
	6	5.6	7.8	4.7	0.6	5.3	9.0	3.9	0.9
	7					5.0	8.6	4.3	0.8
	8	5.5	9.0	4.7	0.9	5.4	8.2	4.7	0.9
	9	5.5	7.5	4.7	0.6	4.8	7.8	3.9	1.3
	10	5.4	7.5	4.7	0.5	5.9	7.8	4.3	0.6
	Average	5.49	8.03	4.66		5.27	8.02	4.26	
	SE	0.09	0.32	0.04		0.11	0.17	0.11	
	Av L+R	5.37	8.03	4.45					
	SE	0.08	0.17	0.08					
3	1	5.0	8.2	4.7	0.7	5.2	7.1	4.7	0.5
	2	5.8	11.4	4.7	1.3	5.2	7.1	4.7	0.4
	3	6.2	9.0	5.1	0.9	5.2	8.6	4.3	0.8
	4	4.9	7.1	3.9	0.6	5.2	8.2	3.9	0.7
	5	4.9	7.5	4.3	0.7	4.7	7.1	3.9	0.6
	6	4.8	7.1	3.9	0.6	4.9	6.7	4.3	0.6
	7	5.1	7.5	4.3	0.6	5.6	7.8	4.7	0.5

	8	5.0	7.1	4.3	0.6	5.1	7.5	4.3	0.7
	9	5.0	7.5	3.5	0.8	4.9	7.8	4.3	0.6
	10	5.5	8.6	3.9	0.8	5.2	8.2	3.5	1.0
	Average	5.22	8.10	4.26		5.12	7.61	4.26	
	SE	0.15	0.42	0.15		0.08	0.19	0.13	
	Av L+R	5.17	7.86	4.26					
	SE	0.08	0.23	0.10					
4	1	5.2	7.5	3.5	0.8	6.0	9.4	5.5	0.7
	2	4.7	6.7	4.3	0.4	5.5	7.5	4.7	0.6
	3	4.9	7.5	4.3	0.5	5.7	8.2	4.7	0.7
	4	4.8	7.1	3.9	0.4	5.6	7.8	4.3	0.8
	5	5.4	7.8	4.7	0.8	6.3	9.8	5.1	1.1
	6	5.0	7.8	4.7	0.6	5.6	7.8	4.7	0.7
	7	4.2	7.1	3.5	0.7	5.6	8.2	4.3	0.8
	8	5.0	7.5	4.7	0.5	5.3	7.5	4.3	0.5
	9	4.3	6.7	3.9	0.6	5.6	7.5	4.7	0.6
	10	5.4	7.8	4.7	0.6	5.8	8.2	4.7	0.7
		Average	4.89	7.35	4.22		5.70	8.19	4.70
	SE	0.13	0.14	0.16		0.09	0.25	0.12	
	Av L+R	5.30	7.77	4.46					
	SE	0.12	0.17	0.11					
5	1	4.9	7.5	4.7	0.6	5.3	7.1	4.7	0.4
	2	5.0	7.5	4.7	0.6	5.7	8.2	4.3	0.6
	3	4.8	6.7	3.9	0.7	5.8	7.8	5.1	0.6
	4	5.7	7.8	4.7	0.6	5.7	7.8	5.5	0.5
	5	5.6	7.8	5.1	0.6	5.3	7.8	4.7	0.6
	6	5.3	7.5	4.7	0.5	4.7	7.1	4.3	0.5
	7	5.4	7.1	4.3	0.7	5.2	7.5	4.7	0.6
	8	5.1	7.1	4.3	0.6	5.6	7.8	4.7	0.6
	9	5.0	7.1	3.9	0.7	5.4	8.6	4.7	0.9
	10	5.3	7.1	4.3	0.5	5.8	10.2	4.7	1.1
		Average	5.21	7.32	4.46		5.45	7.99	4.74
	SE	0.09	0.11	0.12		0.11	0.28	0.11	
	Av L+R	5.33	7.66	4.60					
	SE	0.08	0.17	0.09					
6	1	6.0	8.6	5.1	0.8	6.4	9.8	4.7	1.4
	2	6.1	8.6	5.5	0.7	5.7	8.6	4.7	0.7
	3	6.2	9.4	5.5	1.0	5.6	8.2	4.7	0.6
	4	5.8	7.8	5.5	0.5	5.7	7.8	4.7	0.6

	5	5.5	7.1	5.1	0.4	5.9	9.0	4.7	8.0	
	6	5.8	7.8	5.1	0.5	5.9	7.8	4.7	0.8	
	7	5.7	7.8	4.7	0.7	6.2	9.4	4.7	1.1	
	8	5.4	7.8	4.7	0.5	5.6	8.6	5.1	0.7	
	9	5.3	7.1	4.3	0.6	6.3	8.2	5.1	0.8	
	10	5.2	7.1	4.7	0.6	5.9	7.8	5.1	0.7	
	Average	5.70	7.91	5.02		5.92	8.52	4.82		
	SE	0.11	0.24	0.13		0.09	0.22	0.06		
	Av L+R	5.81	8.22	4.92						
	SE	0.07	0.17	0.07						
7	1	4.3	7.1	3.9	0.7	5.3	8.6	3.9	1.1	
	2	5.5	7.8	4.7	0.7	5.4	7.1	4.7	0.6	
	3	6.8	10.2	5.5	1.1	5.4	7.1	4.7	0.5	
	4	5.3	7.8	4.7	0.7	6.5	9.0	5.5	1.0	
	5	5.0	7.1	3.2	0.7	5.4	7.1	4.3	0.6	
	6	5.0	7.5	4.7	0.6	6.2	11.0	5.1	1.3	
	7	5.9	11.0	4.7	1.5	6.0	7.5	4.3	0.6	
	8	5.7	7.8	4.7	0.6	6.4	8.2	5.5	0.7	
	9	5.3	8.2	4.7	0.7	5.4	7.8	4.7	0.5	
	10	5.5	7.8	4.7	0.7	5.4	7.8	4.3	0.9	
		Average	5.43	8.23	4.55		5.74	8.12	4.70	
		SE	0.21	0.41	0.19		0.15	0.38	0.17	
		Av L+R	5.59	8.18	4.63					
	SE	0.13	0.27	0.13						
8	1	5.2	7.5	4.7	0.7	5.5	7.5	4.7	0.5	
	2	5.6	7.5	5.1	0.5	6.6	8.6	5.9	0.8	
	3	6.7	9.4	5.5	1.0	6.3	9.8	5.1	1.0	
	4	5.3	7.5	3.5	0.9	6.0	7.8	5.1	0.7	
	5	5.4	7.5	4.7	0.7	6.1	10.2	5.5	0.9	
	6	5.2	7.8	4.7	0.7	5.6	8.6	4.7	0.9	
	7	5.8	11.8	4.7	1.7	5.0	7.1	3.9	0.7	
	8	5.1	7.1	4.3	0.6	5.7	8.6	4.7	0.7	
	9	5.9	8.2	5.1	0.8	5.2	7.5	4.3	0.5	
	10	6.4	7.8	5.5	0.5	5.8	7.5	4.7	0.5	
		Average	5.66	8.21	4.78		5.78	8.32	4.86	
		SE	0.17	0.45	0.19		0.15	0.33	0.18	
		Av L+R	5.72	8.27	4.82					
	SE	0.11	0.27	0.13						
9	1	6.9	12.9	5.5	1.6	5.2	8.2	3.9	0.8	

	2	6.1	7.8	5.5	0.6	5.6	7.5	4.7	0.5
	3	5.8	7.5	5.1	0.4	6.6	8.6	4.7	0.8
	4	6.0	7.8	5.1	0.6	5.5	7.1	3.9	0.4
	5	5.5	7.5	4.7	0.6	4.7	6.7	3.9	0.5
	6	5.6	7.1	5.1	0.5	5.2	9.4	3.5	1.3
	7	6.4	8.6	5.5	0.8	4.3	7.5	3.1	1.1
	8	6.1	7.8	5.5	0.6	6.1	7.8	5.1	0.6
	9	6.4	8.6	5.5	0.7	6.3	12.5	3.5	1.9
	10	6.5	8.6	5.1	0.8	6.0	7.8	4.7	0.7
		Average	6.13	8.42	5.26		5.55	8.31	4.10
	SE	0.14	0.52	0.09		0.23	0.52	0.21	
	Av L+R	5.84	8.37	4.68					
	SE	0.15	0.36	0.17					
10	1	5.7	7.8	5.1	0.7	5.8	8.6	5.1	0.7
	2	5.9	7.8	5.5	0.5	6.3	9.8	5.5	1.0
	3	6.1	8.6	4.7	1.0	5.5	7.1	5.1	0.4
	4	5.8	7.8	4.7	0.6	5.8	9.0	5.1	0.6
	5	6.2	8.2	5.5	0.6	6.6	9.8	5.5	0.9
	6	5.5	8.2	4.7	0.8	6.0	11.0	4.7	1.2
	7	6.8	13.7	4.7	2.0	5.2	7.8	4.7	0.7
	8	6.3	8.6	4.7	1.0	6.2	8.2	4.7	0.9
	9	5.0	7.5	4.7	0.6	6.0	8.2	5.5	0.6
	10	5.4	7.8	4.7	0.8	7.4	12.5	6.3	1.5
	Average	5.87	8.60	4.90		6.08	9.20	5.22	
	SE	0.16	0.58	0.11		0.19	0.51	0.16	
	Av L+R	5.98	8.90	5.06					
	SE	0.13	0.38	0.10					
11	1	6.7	10.2	5.5	1.1	6.4	8.6	5.5	0.8
	2	6.4	8.6	5.1	0.8	6.7	8.2	5.1	0.7
	3	6.4	7.8	5.1	0.7	5.7	7.1	5.1	0.4
	4	6.5	7.8	5.9	0.6	5.6	7.8	5.1	0.6
	5	6.4	9.0	5.1	0.9	5.6	7.5	5.1	0.5
	6	5.1	7.1	3.9	1.1	6.0	7.8	5.1	0.5
	7	6.0	8.6	4.7	1.1	5.4	9.4	4.7	0.9
	8	5.7	9.4	4.3	1.2	6.2	7.5	4.7	0.5
	9	5.9	7.1	4.7	0.6	5.8	9.0	4.7	1.1
	10	6.3	8.2	4.3	0.8	6.4	13.3	4.7	1.7
	Average	6.14	8.38	4.86		5.98	8.62	4.98	
	SE	0.15	0.31	0.19		0.14	0.57	0.09	

	Av L+R	6.06	8.50	4.92					
	SE	0.10	0.32	0.10					
12	1	6.3	7.8	5.1	0.5	5.9	7.5	5.5	0.5
	2	5.6	7.8	4.7	0.9	5.9	9.0	4.7	0.9
	3	7.3	14.1	5.5	1.8	6.2	10.2	5.1	1.1
	4	4.8	7.1	3.9	0.8	5.7	7.8	4.3	0.9
	5	5.1	7.5	4.7	0.7	5.9	9.0	4.7	0.9
	6	5.3	9.0	3.9	1.3	7.1	10.6	5.5	1.4
	7	6.7	8.2	5.1	0.7	5.7	7.1	5.5	0.5
	8	8.8	9.8	7.8	0.6	6.1	7.1	5.5	0.6
	9	6.0	7.8	4.7	0.6	6.1	8.2	4.7	1.1
	10	5.6	7.1	4.7	0.7	6.9	8.6	5.9	0.6
		Average	6.15	8.62	5.01		6.15	8.51	5.14
	SE	0.38	0.66	0.35		0.15	0.38	0.16	
	Av L+R	6.15	8.57	5.08					
	SE	0.20	0.37	0.19					
13	1	6.0	8.6	4.7	1.0	6.4	8.2	5.5	0.5
	2	5.7	7.1	4.7	0.6	6.3	9.0	4.7	0.9
	3					5.3	7.1	4.3	0.6
	4	5.8	7.1	5.1	0.6	5.6	7.5	4.7	0.7
	5	5.1	6.7	4.7	0.6	6.4	8.2	5.5	0.7
	6	6.7	9.4	5.9	0.8	6.4	11.0	4.7	1.2
	7	6.3	9.4	5.5	0.8	4.7	6.7	3.9	0.6
	8	5.7	7.8	4.7	0.8	7.5	9.4	4.3	1.1
	9	5.7	8.2	4.7	0.6	5.5	9.0	4.7	0.8
	10	5.8	7.8	4.7	0.9	6.2	7.8	5.1	0.6
		Average	5.87	8.01	4.97		6.03	8.39	4.74
	SE	0.10	0.22	0.10		0.25	0.40	0.16	
	Av L+R	5.95	8.21	4.85					
	SE	0.63	1.12	0.48					
14	1	5.5	7.8	4.7	0.7				
	2	6.2	7.1	5.5	0.5				
	3	6.5	8.2	5.5	0.6				
	4	6.0	8.2	5.1	0.7				
	5	6.4	8.2	5.5	0.7				
	6	5.0	7.5	4.3	0.6				
	7	6.5	13.3	4.7	1.8				
	8	6.9	9.0	5.9	0.7				
	9	6.0	7.8	5.1	0.5				

	10	6.2	7.8	5.1	0.7				
	Average	6.12	8.49	5.14					
	SE	0.17	0.56	0.15					
15	1					6.9	9.4	5.9	0.8
	2					6.4	9.0	5.5	0.7
	3					6.7	8.6	5.5	0.8
	4					6.5	8.6	5.5	0.9
	5					7.5	8.6	6.7	0.6
	6					6.8	10.2	5.9	1.0
	7					6.0	8.6	4.7	1.1
	8					6.3	7.8	5.5	0.5
	9					7.2	9.4	5.9	1.0
	10					6.4	8.2	5.5	0.6
		Average					6.67	8.84	5.66
	SE					0.14	0.22	0.16	
16	1	6.8	10.6	5.5	1.1				
	2	5.3	6.3	4.7	0.5				
	3	7.1	8.6	5.9	0.7				
	4	6.8	9.8	5.5	0.9				
	5	6.5	8.2	5.1	0.7				
	6	6.3	7.8	5.1	0.6				
	7	6.7	10.2	5.5	0.9				
	8	7.0	9.0	6.3	0.8				
	9	6.1	7.8	5.1	0.7				
	10	5.4	6.7	3.1	0.8				
		Average	6.40	8.50	5.18				
	SE	0.20	0.45	0.27					
	Av L+R SE								
17	1	6.6	8.2	5.6	0.7	6.5	8.6	5.5	0.8
	2	5.3	7.1	4.3	0.7	6.9	9.4	5.9	1.0
	3	6.6	8.2	5.9	0.7	6.5	9.0	5.5	1.0
	4	6.0	7.8	4.7	0.8	6.6	8.2	5.1	0.9
	5	6.1	7.5	5.1	0.6	6.2	9.0	4.7	1.0
	6	6.0	7.5	5.1	0.5	6.1	8.6	4.7	1.5
	7	6.3	9.4	5.5	1.0	8.2	13.3	5.9	2.1
	8	6.5	8.6	5.5	0.8	6.1	9.8	5.1	1.0
	9	5.7	7.5	4.7	0.6	6.2	9.8	4.3	1.5
	10	6.7	9.0	5.5	1.0	6.3	8.2	5.5	0.7

	Average	6.18	8.08	5.19		6.56	9.39	5.22	
	SE	0.14	0.23	0.16		0.20	0.47	0.17	
	Av L+R	6.37	8.74	5.21					
	SE	0.57	1.33	0.50					
18	1	6.6	8.2	5.5	0.6	6.4	8.2	5.5	0.8
	2	7.1	8.6	5.5	0.8	6.2	11.0	5.5	1.1
	3	6.3	7.8	5.1	0.8	7.0	9.4	5.9	9.0
	4	6.9	9.4	5.5	1.0	6.4	7.5	5.1	0.5
	5	6.8	11.8	5.9	1.3	6.0	7.5	4.7	0.7
	6	5.3	7.8	4.7	0.7	6.3	11.0	4.7	1.6
	7	7.3	9.8	5.1	1.3	5.8	7.5	4.7	0.6
	8	6.8	8.6	5.5	0.9	7.1	11.0	5.9	1.4
	9	5.6	7.5	4.7	0.7	6.1	9.4	4.7	1.0
	10	6.7	8.6	5.5	0.8	7.0	10.6	5.9	1.2
	Average	6.54	8.81	5.30		6.43	9.31	5.26	
	SE	0.20	0.40	0.12		0.14	0.49	0.17	
	Av L+R	6.49	9.06	5.28					
	SE	0.12	0.31	0.10					

Table D.7: Data from Scheimpflug of female C57BL/6 irradiated with 2 Gy ^{60}Co delivered at 0.063 Gy/min over an 18 month period.

Table D.8: Scheimpflug imaging data from control C57BL/6 mice sham-irradiated alongside 0.063 Gy/min exposures (L = Left eye, R = right eye).

Control 1 to 10 (0.063 Gy/min)									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	1	5.2	7.1	4.3	0.6	5.6	8.2	4.7	0.7
	2	4.6	7.1	3.9	0.6	5.0	6.3	4.7	0.5
	3	5.0	7.8	4.3	0.7	5.5	7.8	4.7	0.7
	4	5.3	7.5	4.7	0.9	5.1	8.6	3.9	1.1
	5	3.9	6.7	3.1	0.9	5.3	8.6	3.9	0.9
	6	5.3	7.5	4.7	0.6	5.1	7.8	4.3	0.8
	7	5.8	7.5	4.3	1.0	5.1	7.8	4.7	0.7
	8	5.3	7.1	4.3	0.6	5.0	7.8	4.7	0.8
	9	5.6	7.1	4.3	1.0	5.1	7.5	4.3	0.8
	10					5.6	7.8	4.7	1.0
	Average	5.11	7.27	4.21		5.24	7.82	4.46	
	SE	0.19	0.11	0.16		0.08	0.20	0.11	
	Av L+R	5.18	7.56	4.34					
	SE	0.10	0.13	0.10					
2	1	4.9	8.2	3.9	0.9	5.3	7.1	4.7	0.4
	2	5.0	7.1	3.9	0.8	5.9	10.6	5.1	1.1
	3	4.2	7.1	3.9	0.7	5.5	10.6	4.7	1.1
	4	4.3	7.1	3.9	0.7	5.4	7.8	4.7	0.7
	5	4.8	7.1	3.5	0.6	5.1	7.8	3.9	1.1
	6	4.8	7.1	4.3	0.6	5.8	9.4	4.7	0.9
	7	5.0	7.5	4.3	0.6	5.8	9.8	4.7	1.4
	8	5.2	8.2	4.3	0.7	5.0	8.6	4.3	0.9
	9	5.3	7.1	4.3	0.6	5.3	8.6	4.7	0.6
	10	5.2	7.1	4.3	0.6	5.7	8.6	4.7	0.7
	Average	4.87	7.36	4.06		5.48	8.89	4.62	
	SE	0.12	0.15	0.09		0.10	0.38	0.10	
	Av L+R	5.18	8.13	4.34					
	SE	0.10	0.26	0.09					
3	1	5.1	7.5	4.7	0.6	5.6	8.2	4.7	0.6
	2	5.2	7.5	4.3	0.7	5.3	7.1	4.3	0.5
	3	5.3	7.1	4.3	0.6	5.4	8.2	4.3	0.8
	4	4.8	6.3	4.3	0.4	5.0	7.8	4.7	0.6
	5	5.5	7.5	4.7	0.6	5.6	9.0	4.3	0.9
	6	5.3	7.5	4.3	0.5	5.5	9.0	4.7	0.8
	7	4.9	8.6	3.9	1.2	5.2	9.4	4.7	1.2
	8	4.1	5.5	3.9	0.4	5.7	9.0	4.7	0.9
	9	4.8	7.8	3.1	1.1	5.6	7.5	4.7	0.6
	10	5.3	7.5	4.3	0.6	5.3	9.0	4.3	1.0

	Average	5.03	7.28	4.18		5.42	8.42	4.54		
	SE	0.13	0.27	0.15		0.07	0.24	0.07		
	Av L+R	5.23	7.85	4.36						
	SE	0.08	0.22	0.09						
4	1	4.9	7.8	3.5	0.7	4.9	8.2	4.7	0.6	
	2	4.9	7.5	4.3	0.7	5.6	7.8	5.1	0.5	
	3	4.9	8.6	3.1	1.0	5.8	9.0	4.7	0.9	
	4	5.0	8.2	3.5	0.9	5.0	7.1	3.9	0.6	
	5	5.2	8.2	4.7	0.9	5.4	7.8	3.9	0.6	
	6	5.5	7.1	4.3	0.6	5.3	8.2	4.3	0.9	
	7	4.8	9.4	3.9	0.8	5.4	9.0	4.3	1.1	
	8	4.8	6.7	4.3	0.3	5.6	8.2	5.1	0.6	
	9	4.8	7.5	4.3	0.5	6.1	9.0	5.1	1.0	
	10	5.7	7.8	4.7	1.1	5.8	8.2	3.9	0.8	
		Average	5.05	7.88	4.06		5.49	8.25	4.50	
		SE	0.10	0.24	0.17		0.12	0.20	0.16	
		Av L+R	5.27	8.07	4.28					
		SE	0.09	0.16	0.12					
5	1	4.9	7.5	4.3	0.6	5.7	8.6	5.1	0.7	
	2	4.8	7.5	3.1	0.7	6.2	9.8	3.9	1.4	
	3	5.5	11.4	4.3	1.5	5.3	7.1	4.7	0.4	
	4	5.2	8.2	4.7	0.8	5.1	7.8	3.9	0.8	
	5	5.5	7.8	4.7	0.7	5.6	8.2	4.7	0.7	
	6	4.8	7.1	3.9	0.6	5.4	8.6	4.7	0.8	
	7	6.8	11.4	5.5	1.7	6.7	12.5	5.1	2.2	
	8	5.2	8.2	4.7	0.7	6.3	8.2	5.5	0.8	
	9	5.3	7.1	4.7	0.4	5.1	7.8	4.3	0.9	
	10	5.4	7.1	4.7	0.4	5.1	8.2	3.5	0.8	
		Average	5.34	8.33	4.46		5.65	8.68	4.54	
		SE	0.18	0.53	0.20		0.18	0.48	0.20	
		Av L+R	5.50	8.51	4.50					
		SE	0.13	0.35	0.14					
6	1	5.3	7.5	4.7	0.7	5.4	7.8	4.7	0.6	
	2	5.3	8.6	3.9	1.1	6.0	9.0	5.1	0.8	
	3	5.0	7.1	3.9	0.6	6.2	9.0	4.7	1.2	
	4	4.5	7.1	3.9	0.6	5.4	7.8	4.7	0.6	
	5	4.8	7.5	3.9	0.6	5.6	7.8	4.7	0.6	
	6	5.2	7.5	4.7	0.6	5.8	7.8	5.1	0.6	
	7	5.2	7.1	4.7	0.7	5.6	9.0	4.3	1.2	
	8	4.9	7.5	4.7	0.5	5.8	8.6	4.7	0.8	
	9	5.3	7.5	3.9	0.7	6.1	14.9	5.1	1.5	
	10	5.0	7.8	4.7	0.6	6.0	10.6	5.5	0.9	
		Average	5.05	7.52	4.30		5.79	9.23	4.86	
		SE	0.08	0.14	0.13		0.09	0.69	0.11	

	Av L+R	5.42	8.38	4.58						
	SE	0.10	0.39	0.11						
7	1	6.0	8.6	5.5	0.8	5.2	7.5	4.3	0.6	
	2	5.1	7.1	4.3	0.6	5.1	7.1	3.5	0.7	
	3	5.5	8.2	4.7	0.7	6.3	10.6	5.1	1.4	
	4	5.8	9.8	5.5	0.8	5.2	7.5	4.7	0.6	
	5	5.8	8.2	5.5	0.6	4.9	7.5	4.3	0.6	
	6	5.7	7.8	5.1	0.6	5.8	7.1	4.7	0.7	
	7	4.8	7.1	4.3	0.4	5.5	7.8	4.7	0.8	
	8	5.6	11.0	4.7	1.5	5.9	7.8	5.1	0.6	
	9	5.8	7.1	5.1	0.5	5.2	7.5	4.7	0.5	
	10	4.9	6.7	4.3	0.4	5.7	11.0	4.7	1.2	
		Average	5.50	8.16	4.90		5.48	8.14	4.58	
		SE	0.13	0.43	0.16		0.14	0.45	0.15	
		Av L+R	5.49	8.15	4.74					
		SE	0.09	0.30	0.11					
8	1	5.0	7.5	3.9	0.8	5.9	7.5	5.1	0.6	
	2	5.6	7.5	4.7	0.6	5.2	7.8	4.7	0.7	
	3	5.6	8.6	4.7	0.7	6.0	7.5	5.1	0.6	
	4	5.8	9.4	4.7	0.8	5.6	7.5	4.7	0.6	
	5	5.0	7.1	3.9	0.6	5.6	7.1	5.1	0.4	
	6	5.7	7.8	5.1	0.5	5.1	8.2	3.9	0.9	
	7	5.3	7.5	4.3	0.7	5.5	8.6	4.7	0.8	
	8	5.3	8.6	4.7	0.8	5.7	8.2	4.3	0.8	
	9	6.2	14.1	5.5	1.6	4.9	7.1	3.9	0.7	
	10	6.5	9.8	5.1	1.2					
		Average	5.60	8.79	4.66		5.50	7.72	4.61	
		SE	0.15	0.65	0.16		0.12	0.17	0.16	
		Av L+R	5.55	8.28	4.64					
		SE	0.10	0.37	0.11					
9	1	6.0	7.8	5.1	0.6	5.8	7.8	4.7	0.6	
	2	6.3	9.8	5.1	1.2	6.3	8.6	3.9	1.0	
	3	6.3	7.8	5.5	0.5	6.5	7.8	5.5	0.6	
	4	5.7	7.5	4.7	0.5	5.6	7.1	4.7	0.5	
	5	5.5	7.5	5.1	0.4	5.9	8.2	3.9	0.7	
	6	5.7	7.5	4.7	0.7	5.6	7.8	3.5	0.7	
	7	5.3	7.8	4.3	0.7	5.7	7.5	4.7	0.5	
	8	5.0	6.7	4.3	0.4	5.9	8.2	3.9	0.8	
	9	5.8	8.2	4.7	0.8	6.0	7.1	5.1	0.4	
	10	5.8	9.8	3.9	1.3	5.9	7.8	4.7	0.7	
		Average	5.74	8.04	4.74		5.92	7.79	4.46	
		SE	0.13	0.32	0.15		0.09	0.15	0.20	
		Av L+R	5.83	7.92	4.60					
		SE	0.08	0.17	0.13					

10	1	6.3	8.2	5.5	0.5	5.5	8.2	4.7	0.5
	2	6.5	10.2	5.1	1.1	5.9	9.8	4.7	0.9
	3	5.2	7.5	4.7	0.6	5.9	8.2	3.9	1.0
	4					6.0	7.5	4.3	0.7
	5	5.5	7.8	4.7	0.8	5.6	7.5	4.3	0.7
	6	5.5	7.5	4.7	0.7	5.3	7.1	4.3	0.5
	7	6.0	9.0	5.1	1.1	5.2	7.1	3.9	0.7
	8	5.4	7.1	4.7	0.4	5.9	7.5	5.1	0.6
	9	6.3	7.8	5.5	0.6	6.2	11.0	5.5	0.8
	10	6.4	9.4	5.5	1.0	5.8	7.8	5.1	0.7
	Average	5.90	8.28	5.06		5.73	8.17	4.58	
	SE	0.17	0.34	0.12		0.10	0.40	0.17	
	Av L+R	5.81	8.22	4.81					
	SE	0.09	0.26	0.12					
11	1	6.6	8.6	5.1	1.0	5.9	9.0	5.1	0.8
	2	5.9	8.6	4.7	0.7	6.0	7.8	5.1	0.5
	3	5.1	7.5	4.7	0.7	6.6	8.6	4.7	0.7
	4	5.7	7.8	4.7	0.5	5.9	8.2	3.1	0.9
	5	6.2	8.2	5.5	0.7	6.3	8.2	5.5	0.6
	6	6.2	7.8	5.5	0.6	6.5	9.8	4.3	1.2
	7	6.1	12.5	4.7	1.6	5.6	8.2	5.1	0.6
	8	5.7	10.6	4.3	1.5	7.0	9.0	5.9	1.0
	9	6.0	8.2	4.7	0.8	5.5	7.1	4.7	0.4
	10	7.2	8.6	5.9	0.8	5.8	8.2	4.7	0.8
	Average	6.07	8.84	4.98		6.11	8.41	4.82	
	SE	0.18	0.49	0.16		0.15	0.23	0.24	
	Av L+R	6.09	8.63	4.90					
	SE	0.11	0.27	0.14					
12	1	5.7	8.6	4.7	0.9	6.3	9.8	4.7	1.1
	2	5.7	7.5	4.3	0.7	6.1	8.6	5.1	0.7
	3	6.3	8.2	5.5	0.6	6.7	9.4	3.9	1.2
	4	5.3	7.1	4.3	0.5	6.2	9.4	5.5	0.8
	5	6.0	10.2	5.5	1.0	6.6	11.0	4.7	1.4
	6	5.3	7.5	4.7	0.7	5.5	7.1	4.7	0.3
	7	6.4	8.2	5.9	0.6	6.0	8.6	4.7	0.8
	8	4.1	16.9	3.1	2.1	6.2	10.2	5.5	1.1
	9	6.2	10.2	5.5	1.0	6.0	8.2	5.1	0.7
	10	6.8	9.0	5.9	0.9	6.9	11.0	5.5	1.1
	Average	5.78	9.34	4.94		6.25	9.33	4.94	
	SE	0.24	0.90	0.28		0.13	0.39	0.16	
	Av L+R	6.02	9.34	4.94					
	SE	0.14	0.48	0.16					
13	1					6.8	9.0	5.9	0.7
	2	5.6	7.1	4.7	0.5	6.5	8.6	5.5	0.7

	3	6.1	7.8	5.5	0.6	6.3	9.0	5.1	0.7
	4	6.1	7.8	5.5	0.6	6.2	9.0	5.1	0.9
	5	5.4	7.1	4.7	0.5	6.0	7.5	4.7	0.7
	6	5.4	7.8	4.3	0.8	6.4	8.6	5.9	0.5
	7	5.9	8.2	5.1	0.9	5.5	7.8	4.7	0.8
	8	6.1	8.2	4.7	0.8	5.9	7.8	5.5	0.5
	9	6.6	8.6	5.9	0.7	6.0	8.6	4.7	0.6
	10	6.9	8.2	5.9	0.6	6.8	9.0	5.1	1.0
	Average	6.01	7.87	5.14		6.24	8.49	5.22	
	SE	0.17	0.17	0.19		0.13	0.18	0.15	
	Av L+R	6.13	8.19	5.18					
	SE	0.11	0.14	0.12					
14	1	5.6	7.1	4.3	0.4				
	2	5.1	7.1	4.3	0.6				
	3	5.7	7.8	4.7	0.7				
	4	6.1	8.6	5.5	0.8				
	5	5.5	7.8	4.7	0.6				
	6	5.7	8.2	4.7	0.8				
	7	5.2	7.1	4.7	0.6				
	8	5.8	7.1	5.5	0.5				
	9	5.7	6.7	4.7	0.5				
	10	5.5	7.1	4.7	0.6				
	Average	5.59	7.46	4.78					
	SE	0.09	0.19	0.13					
15	1					6.2	9.0	4.7	1.1
	2					6.4	7.8	5.5	0.5
	3					7.4	10.6	5.9	1.2
	4					6.5	8.2	5.5	0.5
	5					5.7	7.5	5.1	0.4
	6					6.6	9.0	5.9	0.7
	7					6.1	7.8	5.1	0.7
	8					6.2	7.8	5.5	0.5
	9					6.3	7.8	5.1	0.6
	10					5.7	8.2	5.1	0.7
	Average					6.31	8.37	5.34	
	SE					0.15	0.30	0.12	
16	1	5.9	7.5	4.3	0.6	5.8	8.6	4.7	0.8
	2	6.7	13.7	3.9	1.6	6.2	7.1	4.7	0.5
	3	6.2	7.8	5.1	0.6	5.3	7.5	4.7	0.6
	4	5.7	7.8	4.7	0.7				
	5	6.1	8.2	5.5	0.5	5.8	7.5	4.7	0.6
	6	6.3	7.8	5.5	0.6	6.4	8.2	5.5	0.7
	7	6.3	9.0	5.1	0.8	6.2	7.8	5.1	0.6
	8	5.5	7.1	4.3	0.5	6.4	7.8	5.5	0.7

	9	6.2	9.4	5.5	0.8	6.7	12.9	5.1	1.4
	10	5.9	7.1	4.3	0.5	6.7	8.2	5.5	0.8
	Average	6.08	8.54	4.82		6.17	8.40	5.06	
	SE	0.11	0.62	0.19		0.15	0.58	0.12	
	Av L+R	6.12	8.47	4.93					
	SE	0.09	0.42	0.12					
17	1	5.6	9.4	4.3	0.8	6.3	9.0	4.7	1.5
	2								
	3	7.4	9.8	5.5	1.4	6.5	8.2	5.1	0.6
	4	6.7	14.5	4.7	2.1	7.1	9.4	5.9	1.0
	5	5.8	7.5	5.1	0.5	6.3	9.4	5.1	0.7
	6	6.1	7.8	5.5	0.7	7.6	11.8	5.9	1.3
	7	6.0	7.8	4.3	0.8	6.5	9.0	5.5	1.2
	8	6.3	9.4	5.1	1.1	6.6	9.8	5.5	1.3
	9	5.9	7.5	5.1	0.6	6.1	8.2	4.7	0.9
	10	8.3	15.7	5.9	2.7	6.7	8.6	5.5	0.8
	Average	6.46	9.93	5.06		6.63	9.27	5.32	
	SE	0.29	1.02	0.18		0.15	0.37	0.15	
	Av L+R	6.54	9.60	5.19					
	SE	0.16	0.53	0.12					
18	1	6.0	7.8	4.3	0.7	6.6	7.8	4.7	0.7
	2								
	3	6.3	8.2	5.5	0.8	6.1	7.5	4.7	0.5
	4	5.8	7.1	5.5	0.5	5.9	7.8	5.1	0.8
	5	5.9	7.8	5.1	0.8	5.9	7.8	5.1	0.7
	6	6.3	12.9	4.3	1.9	7.2	9.4	5.5	0.9
	7	6.4	8.2	5.5	0.5	5.9	7.5	5.1	0.7
	8	6.5	10.2	5.5	0.8	6.5	9.0	5.1	1.0
	9	6.7	8.2	5.5	0.7	6.5	9.8	5.5	0.9
	10	5.5	7.1	4.7	0.5	7.5	10.6	3.9	1.9
	Average	6.16	8.61	5.10		6.46	8.58	4.97	
	SE	0.13	0.62	0.18		0.19	0.38	0.16	
	Av L+R	6.31	8.59	5.03					
	SE	0.12	0.35	0.12					
Control 11 to 20 (0.063 Gy/min)									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	11	4.8	6.3	3.1	0.6	4.3	6.7	3.9	0.7
	12	4.4	6.7	3.5	0.7	5.1	7.9	3.9	0.9
	13	4.1	6.3	3.5	0.6	5.6	7.8	4.7	0.7

	14	5.2	7.8	3.9	0.8	5.4	8.6	4.3	1.0
	15	4.9	7.5	4.3	0.7	5.1	7.8	3.9	0.8
	16	5.1	6.7	4.3	0.5	5.7	7.8	4.3	0.7
	17	4.8	7.1	3.9	0.6	5.3	7.1	4.7	0.5
	18					5.2	12.2	4.3	1.4
	19	5.4	7.5	4.3	0.6	4.9	6.7	3.9	0.6
	20	5.6	7.5	4.3	0.7	5.0	7.5	4.7	0.7
	Average	4.92	7.04	3.90		5.16	8.01	4.26	
	SE	0.16	0.19	0.15		0.12	0.50	0.11	
	Av L+R	5.05	7.55	4.09					
	SE	0.10	0.29	0.10					
2	11	5.4	7.1	4.3	0.5	5.5	7.8	5.1	0.6
	12	5.2	7.5	4.3	0.6	5.7	8.6	5.5	0.7
	13	5.6	8.6	4.7	0.8	5.6	7.1	4.3	0.5
	14	5.2	7.1	4.7	0.5	5.6	8.6	4.3	0.8
	15	5.7	8.6	5.1	0.7	5.6	7.5	4.7	0.5
	16	4.8	7.1	3.9	0.5	5.1	7.1	4.3	0.5
	17	5.9	9.8	3.9	1.2	5.5	7.1	4.3	0.6
	18	5.6	7.8	4.3	0.6	5.8	8.6	5.1	0.8
	19	5.4	8.2	4.3	0.6	5.1	7.8	4.3	0.6
	20	5.5	8.2	3.9	0.7	5.0	7.8	4.3	0.7
	Average	5.43	8.00	4.34		5.45	7.80	4.62	
	SE	0.10	0.27	0.13		0.09	0.20	0.14	
	Av L+R	5.44	7.90	4.48					
	SE	0.06	0.17	0.10					
3	11	5.6	7.5	4.7	0.6	5.5	8.6	4.7	0.7
	12	5.6	7.1	5.1	0.4	5.6	7.5	5.1	0.6
	13	5.1	7.8	4.3	0.6	5.4	7.1	4.7	0.4
	14	5.5	8.6	4.3	0.8	5.3	9.0	4.7	0.9
	15	5.2	7.1	3.9	0.6	5.8	9.0	4.3	0.7
	16	5.2	8.6	4.3	0.8	6.0	10.2	5.5	1.1
	17	4.9	7.8	4.7	0.7	5.6	8.2	3.9	0.6
	18	4.9	6.7	3.9	0.5	5.7	9.0	4.3	0.9
	19	4.7	6.7	3.9	0.5	5.7	9.4	4.7	1.1
	20	5.8	9.0	3.9	1.0	5.1	7.8	4.7	0.7
	Average	5.25	7.69	4.30		5.57	8.58	4.66	
	SE	0.11	0.26	0.13		0.08	0.30	0.14	
	Av L+R	5.41	8.14	4.48					
	SE	0.08	0.22	0.10					
4	11	4.4	6.3	3.9	0.5	4.9	6.7	4.7	0.4
	12	5.0	8.6	4.3	0.8	4.9	7.1	3.9	0.5
	13	5.5	9.0	4.7	0.7	5.3	7.5	4.7	0.6
	14	4.9	6.7	4.3	0.4	5.7	9.4	4.7	1.0
	15	4.8	7.1	3.9	0.6	5.2	7.1	4.3	0.5

	16	4.7	7.8	3.9	0.9	5.9	8.2	4.7	0.7
	17	5.1	8.2	4.7	0.8	5.4	7.8	4.7	0.6
	18	4.6	9.4	3.9	1.2	5.8	7.8	4.7	0.7
	19	5.2	7.1	3.9	0.8	5.2	8.2	4.7	0.8
	20	5.1	7.5	4.7	0.5	5.4	8.6	3.1	1.1
	Average	4.93	7.77	4.22		5.37	7.84	4.42	
	SE	0.10	0.32	0.12		0.11	0.25	0.17	
	Av L+R	5.15	7.81	4.32					
	SE	0.09	0.20	0.10					
5	11	5.2	6.7	3.9	0.6	4.9	7.1	4.7	0.5
	12	5.4	7.8	4.7	0.7	5.9	8.6	5.1	0.8
	13	6.6	10.2	5.5	1.0	5.8	7.1	5.1	0.5
	14	5.0	7.8	4.7	0.6	5.8	9.4	4.7	1.0
	15	5.3	7.5	4.7	0.6	5.9	7.8	5.1	0.5
	16	5.7	7.8	5.1	0.5	5.2	7.8	4.7	0.6
	17	5.6	7.5	4.7	0.4	5.2	9.0	4.7	0.9
	18	5.7	7.8	4.7	0.7	5.5	7.8	4.7	0.8
	19	4.9	7.5	4.3	0.6	5.2	7.8	4.7	0.6
	20	5.3	7.5	4.3	0.5	5.1	7.5	4.7	0.5
	Average	5.47	7.81	4.66		5.45	7.99	4.82	
	SE	0.15	0.29	0.14		0.12	0.24	0.06	
	Av L+R	5.46	7.90	4.74					
	SE	0.09	0.18	0.08					
6	11	4.9	6.7	3.9	0.5				
	12	5.6	7.8	4.7	0.8	5.2	7.1	4.7	0.6
	13	5.0	7.1	4.3	0.6	4.8	7.1	3.9	0.6
	14	4.9	7.1	4.3	0.6	5.1	7.8	4.7	0.6
	15	5.6	7.8	4.7	0.6	5.2	7.8	4.7	0.7
	16	4.9	7.5	4.3	0.5	5.6	7.8	5.1	0.5
	17	5.5	8.6	4.3	0.6	5.9	10.6	4.7	1.4
	18	4.7	6.7	3.9	0.6	5.1	6.7	4.7	0.5
	19	5.3	7.5	4.7	0.6	5.8	12.9	4.7	1.5
	20	5.3	9.0	4.7	0.9	5.2	7.8	4.7	0.8
	Average	5.17	7.58	4.38		5.32	8.40	4.66	
	SE	0.10	0.24	0.10		0.12	0.67	0.10	
	Av L+R	5.24	7.97	4.51					
	SE	0.08	0.35	0.08					
7	11	4.9	7.5	4.3	0.5	5.3	7.8	4.7	0.6
	12	5.1	7.8	4.7	0.6	5.4	7.1	4.3	0.5
	13	4.9	7.1	4.7	0.4	5.7	9.4	4.7	1.0
	14	5.0	7.1	4.3	0.5	5.4	7.1	4.7	0.4
	15	4.9	6.7	4.7	0.4	6.3	9.4	5.5	0.6
	16	5.0	7.8	4.7	0.6	5.1	7.5	4.3	0.6
	17	5.4	7.8	4.7	0.6	5.5	11.0	4.7	1.4

	18	5.9	7.1	5.1	0.5	5.2	7.8	4.3	0.9
	19	6.5	9.8	5.5	0.9	5.6	7.8	4.3	1.0
	20	4.8	6.7	4.3	0.4	5.1	7.8	4.7	0.5
	Average	5.24	7.54	4.70		5.46	8.27	4.62	
	SE	0.17	0.28	0.12		0.11	0.40	0.12	
	Av L+R	5.35	7.91	4.66					
	SE	0.10	0.25	0.08					
8	11	6.1	7.8	5.1	0.5	4.6	6.7	3.9	0.4
	12	5.3	7.8	4.7	0.6	5.3	7.5	4.3	0.8
	13	5.0	6.7	3.9	0.7	6.3	9.4	4.7	1.1
	14	6.0	7.8	5.1	0.6	6.6	9.8	5.9	0.8
	15	5.9	7.8	5.1	0.6	5.7	7.8	4.7	0.7
	16	5.7	7.8	4.7	0.5	5.6	7.8	4.7	0.6
	17	5.3	7.5	4.3	0.9	6.3	9.4	5.1	1.1
	18	4.7	6.7	3.9	0.6	5.9	9.8	4.7	0.9
	19	4.1	14.9	3.1	1.8	6.0	8.6	4.7	0.9
	20	5.8	8.2	5.5	0.7	5.4	7.5	4.7	0.7
	Average	5.39	8.30	4.54		5.77	8.43	4.74	
	SE	0.20	0.75	0.23		0.19	0.35	0.16	
	Av L+R	5.58	8.37	4.64					
	SE	0.14	0.40	0.14					
9	11	4.9	7.1	4.7	0.5	6.0	8.6	5.5	0.8
	12	5.7	7.8	4.7	0.8	6.0	8.6	4.3	1.1
	13	5.7	7.8	5.1	0.6	5.1	6.7	4.3	0.6
	14	5.6	7.5	4.7	0.6	5.7	8.2	3.9	1.1
	15	5.5	6.3	4.3	0.6	5.8	8.2	5.5	0.6
	16	5.5	7.5	3.9	0.6	5.5	7.8	4.7	0.7
	17	5.9	8.2	5.5	0.6	5.4	7.8	3.5	0.7
	18	5.6	7.1	4.7	0.6	4.9	7.5	4.7	0.5
	19	5.8	10.2	4.7	0.6	5.4	10.2	4.7	1.1
	20	5.6	8.2	4.7	0.7	5.8	7.1	4.7	0.8
	Average	5.58	7.77	4.70		5.56	8.07	4.58	
	SE	0.09	0.32	0.13		0.12	0.31	0.20	
	Av L+R	5.57	7.92	4.64					
	SE	0.07	0.22	0.12					
10	11	5.6	7.8	4.7	0.8	6.0	8.2	5.1	0.8
	12	5.7	8.2	5.1	0.5	6.0	7.8	5.5	0.6
	13	5.3	9.0	4.3	1.1	5.5	9.0	4.7	0.9
	14	5.9	7.8	5.1	0.6	5.3	7.8	4.7	0.6
	15	6.9	8.2	5.5	0.6	6.9	14.9	5.5	1.9
	16	5.1	7.5	4.3	0.6	5.8	7.5	4.7	0.5
	17	6.1	9.4	5.5	0.8	5.7	7.5	5.1	0.5
	18	5.2	7.1	4.7	0.6	5.9	7.8	5.1	0.7
	19	5.6	9.8	4.3	1.2	6.1	8.2	5.1	0.8

	20	5.7	7.8	5.1	0.5	5.8	7.8	5.1	0.5
	Average	5.71	8.26	4.86		5.90	8.65	5.06	
	SE	0.16	0.27	0.15		0.13	0.71	0.09	
	Av L+R	5.81	8.46	4.96					
	SE	0.11	0.37	0.09					
11	11	5.9	9.8	4.7	1.3	5.6	7.8	4.7	0.6
	12	6.0	7.5	4.7	0.6	4.8	7.1	3.9	0.6
	13	6.2	7.8	5.5	0.5	6.6	9.0	5.1	0.9
	14	6.2	8.6	4.7	0.8	6.0	7.8	5.1	0.6
	15	6.4	7.8	5.5	0.5	6.9	16.1	4.7	2.5
	16	5.5	7.8	4.7	0.7	6.7	9.0	5.1	0.9
	17	5.5	8.2	4.7	0.8	5.8	9.0	5.1	0.7
	18	6.2	10.2	4.3	1.4	6.5	9.8	5.5	0.9
	19	5.7	7.8	4.3	0.5				
	20	6.8	14.5	5.9	1.3	6.2	9.8	5.1	1.0
	Average	6.04	9.00	4.90		6.12	9.49	4.92	
	SE	0.13	0.68	0.17		0.22	0.88	0.15	
	Av L+R	6.08	9.23	4.91					
	SE	0.12	0.54	0.11					
12	11	6.3	8.2	5.5	0.6	5.2	7.5	4.7	0.8
	12	5.9	7.5	5.5	0.5	6.0	7.8	5.1	0.6
	13	5.5	7.1	4.3	0.6	5.7	7.5	4.7	0.6
	14	5.5	7.1	4.7	0.5				
	15	5.7	7.8	5.1	0.6	5.8	10.6	4.7	1.6
	16	5.7	7.5	4.7	0.6	6.4	9.4	5.5	0.8
	17	5.3	7.1	4.3	0.7	6.6	8.6	5.9	0.6
	18	6.5	8.2	5.5	0.7	6.5	8.2	5.1	0.8
	19	5.4	7.1	4.7	0.7	6.7	8.6	6.3	0.6
	20	5.9	9.4	4.7	0.7	5.6	7.5	4.7	0.5
	Average	5.77	7.70	4.90		6.06	8.41	5.19	
	SE	0.12	0.23	0.15		0.17	0.35	0.20	
	Av L+R	5.91	8.04	5.04					
	SE	0.11	0.22	0.12					
13	11	5.8	7.5	4.7	0.7	5.7	7.5	4.7	0.6
	12	6.7	8.2	5.1	0.9	6.2	7.8	5.1	0.4
	13	5.9	8.6	5.1	0.8	6.7	9.4	5.5	1.0
	14	5.3	12.2	3.9	1.4	7.1	11.4	5.9	1.2
	15	6.0	7.1	4.3	0.7	5.7	7.1	5.1	0.6
	16	5.6	9.8	4.7	1.1	6.8	10.6	5.5	1.3
	17	5.7	7.1	5.1	0.5	5.9	8.2	5.5	0.6
	18	5.6	9.8	4.7	1.2	6.8	8.6	5.5	0.8
	19	7.1	10.6	5.6	1.3	6.4	10.2	5.5	1.3
	20	5.5	7,8	4.7	0.5	6.4	7.8	5.1	0.6
	Average	5.92	8.99	4.79		6.37	8.86	5.34	

	SE	0.18	0.55	0.15		0.15	0.46	0.11		
	Av L+R	6.15	8.92	5.07						
	SE	0.13	0.35	0.11						
14	11	6.8	9.4	5.1	0.9					
	12	6.4	8.6	5.5	0.7					
	13	5.3	7.5	4.7	0.6					
	14	5.8	7.8	5.1	0.5					
	15	5.5	7.5	4.7	0.6					
	16	5.6	9.8	4.7	1.2					
	17	5.3	7.8	4.7	0.7					
	18	6.3	8.2	5.5	0.6					
	19	6.2	7.8	5.5	0.6					
	20	6.1	7.8	4.7	0.6					
		Average	5.93	8.22	5.02					
	SE	0.16	0.25	0.12						
15	11					6.3	8.2	5.1	0.8	
	12					6.4	8.2	4.3	0.8	
	13					6.1	7.8	5.5	0.6	
	14					7.1	9.8	5.5	1.2	
	15					6.4	8.6	5.1	1.1	
	16					6.0	11.0	4.7	1.2	
	17					5.4	8.2	4.7	0.9	
	18					6.7	8.6	5.1	0.9	
	19					6.8	8.2	5.5	0.7	
	20					5.1	7.5	4.7	0.7	
		Average					6.23	8.61	5.02	
	SE					0.19	0.33	0.13		
16	11	6.5	7.8	5.9	0.5	5.9	8.6	4.7	0.7	
	12	6.3	7.8	5.9	0.4	5.9	7.5	5.1	0.6	
	13	5.7	7.1	5.1	0.4	6.8	9.8	4.7	1.2	
	14	6.3	8.2	5.1	1.0	6.5	9.4	4.7	1.0	
	15	5.9	7.5	5.1	0.6	6.5	8.2	5.1	0.8	
	16	6.6	12.9	5.5	1.5					
	17	6.3	7.8	5.5	0.7					
	18	7.3	12.9	5.9	1.4					
	19	6.1	7.8	5.1	0.7					
	20	5.6	10.2	4.7	0.9					
		Average	6.26	9.00	5.38		6.32	8.70	4.86	
		SE	0.16	0.70	0.13		0.18	0.41	0.10	
		Av L+R	6.28	8.90	5.21					
		SE	0.12	0.48	0.11					
17	11	5.9	10.2	5.1	0.9	6.2	7.8	5.5	0.6	
	12	6.5	8.6	5.5	0.7	6.7	7.8	5.9	0.5	
	13	6.3	7.8	5.1	0.6	6.2	8.2	5.5	0.8	

	14	5.4	7.1	4.7	0.6	5.8	12.5	4.7	1.3
	15	6.3	7.8	5.5	0.6	6.4	7.8	5.5	0.6
	16	6.1	9.0	5.1	0.9	5.7	7.8	4.7	0.6
	17	5.8	8.2	4.7	0.9	6.1	8.2	4.3	1.2
	18	7.1	9.8	5.5	1.0	7.4	10.2	6.3	1.1
	19	5.6	9.0	4.7	0.9	6.4	8.2	3.9	0.8
	20	6.1	7.5	5.5	0.6	6.8	10.6	5.1	1.6
	Average	6.11	8.50	5.14		6.37	8.91	5.14	
	SE	0.15	0.32	0.11		0.16	0.51	0.23	
	Av L+R	6.24	8.71	5.14					
	SE	0.11	0.30	0.13					
18	11	6.6	10.2	5.5	0.9	6.4	7.8	5.1	0.6
	12	6.6	8.6	5.1	0.8	5.8	10.2	4.7	1.4
	13	6.4	11.0	4.7	1.2	6.1	7.8	4.7	0.6
	14	5.8	7.8	4.7	0.7	6.1	7.8	4.7	0.8
	15	6.8	8.2	5.9	0.8	6.0	7.8	4.7	0.5
	16	7.3	11.4	5.9	1.3	5.7	7.1	4.7	0.5
	17	7.2	12.2	5.9	1.1	7.3	11.0	6.3	1.2
	18	7.0	8.2	5.9	0.7	6.4	9.0	5.1	0.9
	19	7.4	11.4	5.9	1.6	6.8	10.2	5.1	1.4
	20	6.9	10.6	5.5	1.0	5.8	10.2	4.3	1.1
	Average	6.80	9.96	5.50		6.24	8.89	4.94	
	SE	0.15	0.51	0.16		0.16	0.44	0.17	
	Av L+R	6.52	9.43	5.22					
	SE	0.56	1.57	0.58					
Control 21 to 30 (0.063 Gy/min)									
Month	Mouse number	Left eye				Right eye			
		Mean	Max	Min	Std dev	Average	Max	Min	Std dev
1	21					5.1	7.8	4.7	0.7
	22	4.9	6.7	4.7	0.5	5.1	7.1	3.9	0.6
	23	4.9	7.5	4.3	0.6	4.9	6.3	4.3	0.4
	24	5.1	6.7	4.7	0.5	5.3	8.2	4.7	1.0
	25	4.8	7.1	3.9	0.7	5.6	7.1	5.1	0.5
	26	4.8	7.1	4.3	0.6				
	27	4.5	7.1	3.9	0.6	5.1	7.1	4.3	0.6
	28	4.6	7.1	3.9	0.6	4.5	7.1	3.5	0.6
	29	4.5	7.1	3.9	0.7	4.8	8.2	3.9	1.0
	30	4.8	7.1	3.9	0.7	5.4	7.8	4.7	0.6
	Average	4.77	7.06	4.17		5.09	7.4 1	4.34	

	SE	0.07	0.08	0.12		0.11	0.2 1	0.17	
	Av L+R	4.93	7.23	4.26					
	SE	0.07	0.12	0.10					
2	21	4.9	7.1	4.3	0.6	5.5	7.8	4.3	0.5
	22	4.9	7.5	3.9	0.6	5.7	7.8	5.5	0.4
	23	4.8	6.7	3.9	0.4	5.5	8.2	4.3	0.7
	24	5.5	7.8	3.9	0.6	5.5	9.4	4.3	1.1
	25	5.6	7.8	4.7	0.6	5.3	7.5	4.3	0.5
	26	5.5	8.2	4.7	0.7	4.7	7.1	3.5	0.5
	27	5.4	7.8	4.7	0.6	5.5	7.5	3.9	0.6
	28	4.8	6.7	3.9	0.5	5.7	8.2	5.1	0.6
	29	5.8	9.4	4.3	1.1	5.0	8.2	3.9	1.0
	30	5.5	7.5	4.7	0.6	5.2	7.1	4.3	0.5
	Average	5.27	7.65	4.30		5.36	7.8 8	4.34	
	SE	0.12	0.25	0.12		0.10	0.2 1	0.18	
	Av L+R	5.32	7.77	4.32					
	SE	0.08	0.16	0.11					
3	21	5.5	7.1	5.1	0.4	5.1	7.1	4.3	0.7
	22	4.9	7.8	4.3	0.8	5.2	7.1	4.7	0.5
	23	5.1	7.5	3.1	0.9	5.6	8.6	4.3	0.7
	24	5.4	7.8	4.7	0.7	5.5	7.8	4.3	0.6
	25	5.8	7.5	4.3	0.6	4.8	7.5	3.9	0.7
	26	5.3	7.8	4.3	0.6	5.0	7.5	4.3	0.6
	27	4.6	7.5	3.5	0.8	5.5	7.8	4.3	0.7
	28	5.2	7.1	3.9	0.6	5.0	7.8	3.9	0.7
	29	5.1	7.1	4.3	0.6	5.2	7.8	4.7	0.7
	30	5.6	7.5	4.3	0.6	4.9	7.5	4.7	0.6
	Average	5.25	7.47	4.18		5.18	7.6 5	4.34	
	SE	0.11	0.09	0.18		0.09	0.1 4	0.09	
	Av L+R	5.22	7.56	4.26					
	SE	0.07	0.08	0.10					
4	21	4.5	6.7	3.9	0.6	5.5	8.2	4.7	0.8
	22	4.3	7.1	3.5	0.6	5.2	8.2	3.9	0.8
	23	4.6	7.1	3.9	0.6	5.3	7.5	4.7	0.5
	24	4.6	6.7	3.9	0.5	5.2	8.2	3.5	1.0
	25	4.5	7.1	3.9	0.6	4.8	7.1	3.9	0.6
	26	5.4	7.5	4.7	0.6	5.0	7.5	3.9	0.8
	27	5.1	7.1	3.9	0.5	5.1	7.1	3.9	0.8
	28	4.8	7.1	3.9	0.5	5.6	8.2	4.7	0.5
	29	4.4	7.1	3.9	0.5	5.0	7.5	3.9	0.6

	30	6.3	9.4	4.7	0.9	5.6	9.0	4.3	0.8
	Average	4.85	7.29	4.02		5.23	7.85	4.14	
	SE	0.19	0.25	0.12		0.09	0.19	0.14	
	Av L+R	5.04	7.57	4.08					
	SE	0.11	0.16	0.09					
5	21	5.3	7.5	3.9	0.7	6.1	8.6	5.1	0.6
	22	4.7	7.1	3.9	0.6	5.6	7.8	5.1	0.4
	23	5.5	7.5	4.7	0.6	4.9	6.7	4.7	0.4
	24	5.4	7.8	4.7	0.6	5.7	10.6	5.1	1.0
	25	5.4	7.5	4.7	0.4	5.6	7.8	5.1	0.4
	26	4.9	7.5	4.3	0.6	5.0	7.5	4.7	0.6
	27	5.1	7.1	4.7	0.5	5.7	8.6	5.1	0.7
	28	4.9	7.5	4.7	0.5	5.6	7.1	5.1	0.4
	29	4.7	7.5	3.9	0.5	5.3	10.2	4.7	1.1
	30	4.6	5.9	3.5	0.4	5.4	7.5	4.7	0.5
	Average	5.05	7.29	4.30		5.49	8.24	4.94	
	SE	0.11	0.17	0.15		0.11	0.41	0.07	
	Av L+R	5.27	7.77	4.62					
	SE	0.09	0.24	0.11					
6	21	5.1	7.1	4.7	0.6	6.0	8.2	5.1	0.7
	22	5.1	7.5	4.7	0.6	5.3	7.8	4.7	0.5
	23	5.5	7.8	4.7	0.6	5.0	7.1	4.7	0.5
	24	5.8	9.4	4.7	1.2	5.1	7.5	4.7	0.5
	25	4.8	6.7	3.9	0.5	5.1	8.6	4.7	0.9
	26	4.9	7.1	3.9	0.6	5.8	7.8	5.1	0.5
	27	5.1	7.1	3.9	0.6	5.0	7.1	4.7	0.5
	28	5.2	7.1	4.3	0.5	5.4	8.2	4.3	0.8
	29	4.8	6.7	3.9	0.6	5.4	7.8	4.7	0.5
	30	4.7	7.1	3.9	0.6	5.2	7.5	4.3	0.5
	Average	5.10	7.36	4.26		5.33	7.76	4.70	
	SE	0.11	0.25	0.13		0.11	0.15	0.08	
	Av L+R	5.22	7.56	4.48					
	SE	0.08	0.15	0.09					
7	21	5.7	9.4	4.7	0.9	4.9	7.8	3.1	0.8
	22	5.1	7.8	4.7	0.7	4.9	7.8	4.7	0.5
	23	6.1	7.8	3.9	0.6	5.7	8.2	4.7	0.7
	24	5.5	7.8	4.7	0.7	5.7	10.6	4.7	1.1
	25	5.4	9.4	4.3	1.2	4.8	7.1	3.9	0.5
	26	5.4	7.5	4.7	0.5	5.6	7.5	4.7	0.7
	27	5.7	8.2	5.1	0.5	6.1	9.0	5.5	0.9

	28	5.3	7.1	4.7	0.6	5.1	7.1	4.7	0.5
	29	5.5	7.5	4.7	0.5	5.6	8.2	4.7	0.8
	30	5.5	7.5	4.7	0.5	5.8	8.2	5.1	0.5
	Average	5.52	8.00	4.62		5.42	8.15	4.58	
	SE	0.09	0.25	0.10		0.14	0.33	0.21	
	Av L+R	5.47	8.08	4.60					
	SE	0.08	0.20	0.11					
8	21	6.0	9.8	4.7	1.1	5.6	7.5	5.1	0.4
	22	5.1	7.1	4.3	0.6	6.3	7.8	5.5	0.6
	23	4.9	7.1	3.9	0.7	6.3	7.8	3.9	1.2
	24	6.2	8.2	5.1	0.8	5.2	7.1	4.7	0.5
	25	5.3	7.8	4.7	0.7	5.7	7.8	5.1	0.6
	26	5.1	7.5	4.3	0.7	4.9	7.5	4.3	0.7
	27	5.7	7.8	5.1	0.6	5.6	7.8	4.7	0.7
	28	5.0	7.5	4.3	0.8	6.0	8.6	5.5	0.8
	29	5.4	9.0	4.3	1.2	5.7	7.8	4.7	0.6
	30	6.2	9.8	4.7	1.2	5.9	8.6	5.5	0.6
	Average	5.49	8.16	4.54		5.72	7.83	4.90	
	SE	0.16	0.32	0.12		0.14	0.15	0.17	
	Av L+R	5.61	8.00	4.72					
	SE	0.11	0.18	0.11					
9	21	6.5	8.6	5.5	0.7	6.2	7.5	5.1	0.7
	22	5.6	7.1	5.1	0.5	5.8	7.8	5.1	0.6
	23	5.6	7.8	4.7	0.7	5.3	7.8	4.7	0.7
	24	4.9	7.8	4.3	0.6	5.7	7.8	5.1	0.5
	25	5.9	9.8	5.1	1.0	5.3	7.5	4.7	0.7
	26	5.0	7.5	4.7	0.5	5.7	7.8	5.1	0.5
	27	5.4	7.1	4.7	0.5	5.3	7.8	3.5	0.7
	28	5.9	7.8	5.1	0.7	5.6	7.1	4.7	0.6
	29	5.5	7.5	4.7	0.4	5.8	7.1	5.5	0.5
	30	5.6	7.5	5.1	0.5	5.1	8.6	3.1	1.0
	Average	5.59	7.85	4.90		5.58	7.68	4.66	
	SE	0.14	0.26	0.11		0.10	0.14	0.24	
	Av L+R	5.59	7.77	4.78					
	SE	0.09	0.14	0.13					
10	21	5.2	7.1	4.7	0.5	5.4	7.1	4.7	0.6
	22					6.0	7.5	5.5	0.5
	23	5.6	8.2	4.7	0.9	6.6	8.6	5.5	0.7
	24	5.8	12.9	4.7	1.9	6.3	8.2	4.7	0.7
	25	5.2	7.5	4.7	0.5	6.1	7.8	5.5	0.5

	26	5.7	7.8	5.1	0.5	5.7	7.1	4.7	0.5
	27	4.1	14.9	3.5	1.6	6.4	12.9	3.9	1.7
	28	5.9	7.1	5.1	0.4	5.2	7.1	4.7	0.5
	29	5.1	7.5	4.3	0.6	4.2	16.1	3.1	1.7
	30	5.8	7.8	3.9	1.2	5.7	11.0	4.7	1.0
	Average	5.38	8.98	4.52		5.76	9.34	4.70	
	SE	0.19	0.95	0.18		0.22	0.96	0.24	
	Av L+R	5.58	9.17	4.62					
	SE	0.15	0.66	0.15					
11	21	5.3	7.1	4.3	0.7	7.3	14.1	5.5	1.9
	22	5.8	7.8	5.1	0.6	5.9	7.5	5.5	0.5
	23	6.2	7.5	5.5	0.6	5.8	6.7	4.7	0.5
	24	5.5	7.5	4.3	0.5	5.1	7.1	3.9	0.6
	25	6.1	7.5	5.1	0.6	5.9	7.5	5.5	0.5
	26	6.1	7.5	5.5	0.6	5.7	7.8	5.1	0.5
	27	6.3	8.2	5.5	0.6	5.8	8.2	4.3	0.8
	28	6.2	7.8	5.1	0.6	5.8	8.2	4.7	0.7
	29	5.6	7.5	4.3	0.6	5.4	7.1	4.7	0.5
	30	6.6	8.6	4.7	0.8	5.5	7.5	4.7	0.4
	Average	5.97	7.70	4.94		5.82	8.17	4.86	
	SE	0.13	0.13	0.16		0.18	0.68	0.17	
	Av L+R	5.90	7.94	4.90					
	SE	0.11	0.34	0.11					
12	21	5.3	8.2	4.3	0.9	6.3	8.6	5.5	0.7
	22	6.0	7.5	5.5	0.5	5.5	8.2	4.7	0.6
	23	5.3	7.1	4.3	0.5	5.6	7.5	5.1	0.4
	24	7.8	9.8	6.3	1.2	6.1	10.2	5.5	1.0
	25	5.2	7.1	4.7	0.6	5.8	7.1	5.1	0.5
	26	5.5	7.5	4.7	0.6	5.5	7.5	3.9	0.8
	27	6.4	8.6	5.5	0.7	7.0	8.2	5.5	0.9
	28	5.3	7.5	4.7	0.7	5.6	8.2	4.7	0.8
	29	5.9	7.5	5.1	0.7	5.7	7.5	4.7	0.5
	30	5.6	7.1	4.7	0.5	6.7	8.2	5.9	0.6
	Average	5.83	7.79	4.98		5.98	8.12	5.06	
	SE	0.25	0.27	0.20		0.17	0.27	0.18	
	Av L+R	5.91	7.96	5.02					
	SE	0.15	0.19	0.13					
13	21	6.0	9.0	5.5	0.8	5.7	7.5	4.7	0.5
	22	5.5	7.5	4.7	0.6	5.4	7.5	4.7	0.6
	23	5.2	7.1	3.9	0.6	6.1	7.8	5.5	0.7

	24	5.9	7.8	3.9	1.0	5.7	7.8	5.1	0.6
	25	5.9	11.8	4.7	1.4	5.8	7.5	4.7	0.6
	26	6.7	11.0	5.5	1.0	5.9	7.1	5.1	0.5
	27	6.2	7.8	5.5	0.6	7.1	8.6	5.5	0.9
	28	6.6	7.5	5.5	0.6	6.4	7.8	5.5	0.5
	29	5.5	7.5	4.7	0.7	6.5	8.6	5.1	0.8
	30	5.5	7.1	4.7	0.5	7.0	14.1	5.5	2.1
	Average	5.90	8.41	4.86		6.16	8.43	5.14	
	SE	0.16	0.53	0.20		0.18	0.65	0.11	
	Av L+R	6.03	8.42	5.00					
	SE	0.12	0.41	0.12					
14	21	6.3	9.0	5.5	0.9				
	22	7.2	9.0	4.7	1.0				
	23	5.1	7.1	4.7	0.6				
	24	5.6	6.7	4.7	0.6				
	25	6.0	7.8	5.5	0.5				
	26	5.6	8.2	4.7	0.7				
	27	6.5	8.2	5.5	0.6				
	28	6.0	7.8	5.1	0.7				
	29	5.2	7.5	4.3	0.7				
	30	5.5	7.1	4.3	0.5				
	Average	5.90	7.84	4.90					
	SE	0.20	0.25	0.15					
15	21					6.0	7.5	5.5	0.6
	22					6.4	10.6	3.9	1.5
	23					5.8	7.1	5.1	0.5
	24					6.2	9.0	4.7	1.0
	25					6.0	7.8	5.1	0.7
	26					5.6	7.5	4.7	0.5
	27					5.7	8.2	4.7	0.8
	28					6.4	8.2	5.5	0.8
	29					5.6	7.8	4.7	0.6
	30					5.5	7.5	4.7	0.7
	Average					5.92	8.12	4.86	
	SE					0.11	0.32	0.15	
16	21	7.6	15.7	5.5	1.9				
	22	6.7	9.4	3.9	1.4				
	23	6.7	8.6	5.5	0.8				
	24	6.0	8.6	5.1	0.7				
	25	6.3	7.8	5.1	0.6				
	26	6.2	7.8	5.5	0.6				

	27	5.0	6.3	3.9	0.5				
	28	6.8	8.2	5.5	0.8				
	29	5.9	7.5	3.5	1.0				
	30	7.3	11.4	4.7	2.1				
	Average	6.45	9.13	4.82					
	SE	0.24	0.84	0.25					
	Av L+R								
	SE								
17	21	6.1	7.1	5.5	0.5	5.9	9.0	4.7	1.1
	22	6.1	7.8	4.7	0.7	7.1	10.6	4.7	1.7
	23	6.2	7.8	5.5	0.5	6.2	11.8	4.7	1.9
	24	5.8	7.8	5.1	0.6	7.8	11.8	5.9	1.8
	25	6.6	9.0	3.9	1.0	6.1	8.2	4.7	0.8
	26	6.2	11.0	4.7	1.4	6.2	8.2	4.7	1.0
	27	5.9	7.5	5.5	0.6	6.2	9.0	5.1	0.7
	28					5.8	8.2	5.1	0.8
	29	6.1	8.2	5.5	0.7	6.9	7.8	5.9	0.6
	30	6.7	18.0	5.5	2.1	6.5	9.0	5.5	1.0
	Average	6.19	9.36	5.10		6.47	9.36	5.10	
	SE	0.10	1.15	0.19		0.20	0.46	0.16	
	Av L+R	6.34	9.36	5.10					
	SE	0.12	0.58	0.12					
18	21	7.8	17.6	5.9	2.0	5.7	7.1	5.5	0.4
	22	6.3	7.8	5.5	0.6	6.2	7.1	4.3	0.6
	23	6.3	10.2	4.7	1.2	6.3	7.5	5.5	0.6
	24	5.5	7.5	4.7	0.5	5.1	7.1	4.3	0.5
	25	5.6	11.8	3.9	1.7	6.4	11.8	5.5	1.3
	26	6.0	7.5	4.7	0.7	6.8	10.6	5.5	1.2
	27	6.4	8.6	5.5	0.6	7.6	11.0	5.1	1.6
	28	6.6	10.2	5.5	0.9	6.6	8.6	5.9	0.7
	29	6.1	10.2	4.7	1.3	6.4	7.5	5.5	0.6
	30	6.7	9.8	5.5	0.8	7.2	11.4	5.5	1.4
	Average	6.33	10.12	5.06		6.43	8.97	5.26	
	SE	0.20	0.94	0.19		0.22	0.63	0.17	
	Av L+R	6.38	9.55	5.16					
	SE	0.66	2.54	0.57					

Table D.8: Data from Scheimpflug of female C57BL/6 mice sham-irradiated alongside 0.063 Gy/min over an 18 month period.