

Supplementary Table 1: Demographic Data and Clinical Characteristics of Literature Cases with m.3243A>G Variant Included in this Study.

Patient #	Authors	Reference Identification	m.3243 A>G Variant-Associated Phenotype	Gender	Age at Presentation [Years]	Snellen VA		Fundus Findings	Systemic Findings									Others
						OD	OS		Diabetes	Age at Diabetes Diagnosis [Years]	Time from Diabetes to Retinal Findings [Years]	Hearing Loss	Age at Hearing Loss Diagnosis [Years]	Time from Hearing Loss to Retinal Findings [Years]	Seizure	Age at Seizure Diagnosis [Years]	Time from Seizures onset to Retinal Findings [Years]	
1	Reardon et al. 1992 (44)	Case 1	MIDD	F	49	20/20	20/20	Macular RPE pigmentary changes	Y	30	19	Y	30	19	N	-	-	Basal ganglia calcification and generalized cerebral and cerebellar atrophy
2	Massin et al. 1995 (53)	Case 1	MIDD	F	36	20/40	20/25	Macular pattern-like dystrophy	Y	36	0	Y	26	10	N	-	-	N
3		Case 2	MIDD	M	48	20/20	20/20	Macular RPE pigmentary atrophy	Y	48	0	Y	38	10	N	-	-	N
4	Bonte et al. 1997 (12)	Case 1	MIDD	F	28	20/30	20/20	Macular RPE pigmentary clumping	Y	Not mentioned	-	Y	19	9	N	-	-	N
5		Case 2	MIDD	F	40	20/20	20/20	Macular pattern-like dystrophy	Y	Several years prior	-	Y	39	1	N	-	-	N
6		Case 3	MIDD	F	39	20/30	20/30	Macular RPE pigmentary clumping	Y	In childhood	-	Y	38	1	N	-	-	N
7		Case 4	MIDD	F	58	20/30	20/25	Macular pattern-like dystrophy	Y	53	5	Y	Not mentioned	-	N	-	-	N
8	Soueid et al. 1998 (58)	Case 1	MIDD	F	17	20/25	20/25	Macular "salt and pepper" like changes	Y	16	1	Y	9	8	N	-	-	-
9	Andrews et al. 1999 (49)	Case 1	MELAS	F	44	20/30	20/30	Macular RPE pigmentary atrophy	N	N	-	Y	40	4	Y	51	7	N
10	Latkany et al. 1999 (52)	Case 1	MELAS	F	40	20/25	20/30	Macular RPE pigmentary atrophy	N	N	-	Y	Not mentioned	-	N	-	-	Ophthalmoplegia
11	Smith et al. 1999 (24)	Case 1-1	MIDD	F	59	20/15	20/20	Macular RPE pigmentary atrophy	Y	49	10	Y	18	41	N	-	-	N
12		Case 1-2	MIDD	M	23	20/15	20/20	Macular RPE pigmentary atrophy	Y	18	5	Y	23	0	N	-	-	N
13		Case 1-3	MIDD	F	86	20/40	20/30	Drusen	Y	85	1	Y	86	0	N	-	-	N
14		Case 2-1	MIDD	F	42	20/16	20/20	RPE thinning, Diabetic retinopathy	Y	36	6	Y	20	22	N	-	-	N
15		Case 3-1	MIDD	F	52	20/30	20/30	Macular RPE pigmentary clumping and atrophy	Y	30	22	Y	30	22	N	-	-	N

16		Case 3-2	Carrier	F	20	20/16	20/16	Macular RPE pigmentary changes	N	-	-	Y	20	0	N	-	-	N
17		Case 3-3	MIDD	M	60	20/40	20/30	Diabetic retinopathy	Y	31	29	Y	59	1	N	-	-	N
18		Case 4-1	MIDD	M	44	20/16	20/16	Macular RPE pigmentary changes	Y	Impaired glucose tolerance	-	Y	30	14	N	-	-	N
19		Case 4-2	Carrier	F	43	CF	20/30	Macular RPE pigmentary changes	N	-	-	Y	39	-4	N	-	-	N
20		Case 5-1	MIDD	F	71	20/15	20/15	Macular RPE pigmentary changes	Y	66	5	Y	66	5	N	-	-	N
21		Case 5-2	Carrier	F	41	20/20	20/30	Normal	N	-	-	Y	41	0	N	-	-	N
22		Case 6-1	MIDD	M	51	20/16	20/16	Macular RPE pigmentary atrophy	Y	37	14	Y	47	4	N	-	-	N
23		Case 7-1	MIDD	F	50	20/40	20/40	Macular RPE pigmentary changes and atrophy	Y	45	5	Y	50	0	N	-	-	N
24	Massin et al. 1999 (25)	Case 1	MIDD	M	48	20/20	20/20	Macular RPE pigmentary atrophy	Y	23	25	Y	39	9	N	-	-	N
25		Case 2	MIDD	F	36	20/20	20/20	Macular pattern-like dystrophy	Y	32	25	Y	10	26	N	-	-	Nephropathy
26		Case 3	Carrier	M	40	20/20	20/20	Macular pattern-like dystrophy	Y	40	0	N	-	-	N	-	-	Nephropathy
27	Latvala et al. 2002 (22)	Case 1	Carrier	F	29	20/16	20/16	Normal	N	-	-	N	-	-	N	-	-	N
28		Case 2	MIDD	M	57	20/16	20/16	Macular RPE pigmentary clumping	Y	48	9	Y	Not mentioned	-	N	-	-	N
29		Case 3	Carrier	F	38	20/40	20/32	Macular RPE pigmentary clumping	N	-	-	Y	Not mentioned	-	N	-	-	N
30		Case 4	Carrier	F	34	20/16	20/16	Normal	N	-	-	N	-	-	N	-	-	Ptoxis
31		Case 5	MIDD	F	52	20/20	20/20	Macular RPE pigmentary clumping	Y	21	31	Y	Not mentioned	-	N	-	-	N
32		Case 6	Carrier	F	51	20/16	20/16	Normal	N	-	-	N	-	-	N	-	-	N
32		Case 7	Carrier	F	35	20/16	20/16	Normal	N	-	-	N	-	-	N	-	-	N
33		Case 8	Carrier	F	59	20/20	20/20	Macular RPE pigmentary clumping	N	-	-	N	-	-	N	-	-	N
34		Case 9	Carrier	F	68	20/20	20/20	Normal	N	-	-	Y	Not mentioned	-	N	-	-	N
35		Case 10	Carrier	F	39	20/20	20/20	Normal	N	-	-	Y	Not mentioned	-	N	-	-	N
36		Case 11	Carrier	F	54	20/32	20/32	Macular RPE pigmentary clumping	N	-	-	N	-	-	N	-	-	Ptoxis
37		Case 12	Carrier	F	48	20/20	20/20	Normal	N	-	-	Y	Not mentioned	-	N	-	-	N
38		Case 13	Carrier	F	31	20/25	20/25	Normal	N	-	-	N	-	-	N	-	-	N

40		Case 14	Carrier	M	53	20/20	20/20	Macular RPE pigmentary clumping	N	-	-	Y	Not mentioned	-	N	-	-	N
41		Case 15	MIDD	M	63	20/25	20/25	Macular RPE pigmentary clumping, Diabetic retinopathy	Y	32	31	Y	Not mentioned	-	N	-	-	Ptoxis
42		Case 16	MIDD	F	47	20/16	20/16	Macular RPE pigmentary clumping	Y	42	5	Y	Not mentioned	-	N	-	-	N
43		Case 17	MIDD	F	65	20/32	20/50	Macular RPE pigmentary clumping, Diabetic retinopathy	Y	45	20	Y	Not mentioned	-	N	-	-	Ptoxis, External ophthalmoplegia
44		Case 18	MIDD	F	32	20/16	20/16	Macular RPE pigmentary clumping	Y	32	0	Y	Not mentioned	-	N	-	-	N
45		Case 19	Carrier	M	43	20/16	20/16	Normal	N	-	-	Y	Not mentioned	-	N	-	-	N
46		Case 20	Carrier	F	37	20/20	20/20	Normal	Y	37	0	Y	Not mentioned	-	N	-	-	N
47		Case 21	Carrier	F	39	20/64	20/64	Macular RPE pigmentary clumping	N	-	-	Y	Not mentioned	-	N	-	-	N
48		Case 22	MIDD	F	26	20/20	20/20	Macular RPE pigmentary clumping	Y	22	4	Y	Not mentioned	-	N	-	-	N
49		Case 23	MIDD	F	59	20/125	20/20	Macular RPE pigmentary clumping	Y	37	22	Y	Not mentioned	-	N	-	-	N
50		Case 24	Carrier	F	18	20/16	20/16	Normal	N	-	-	Y	Not mentioned	-	N	-	-	N
51		Case 25	Carrier	F	40	20/16	20/16	Normal	N	-	-	N	-	-	N	-	-	N
52		Case 26	MIDD	M	24	20/16	20/16	Macular RPE pigmentary clumping	Y	24	0	Y	Not mentioned	-	N	-	-	Occipital stroke with homonymous hemianopia
53	Adjadj et al. 2008 (47)	Case 1	Carrier	F	40	20/20	20/20	Macular RPE atrophy	Y	Not mentioned	-	N	-	-	N	-	-	N
54		Case 2	MIDD	F	54	20/32	20/320	Macular RPE atrophy	Y	Not mentioned	-	Y	Not mentioned	-	N	-	-	N
55	Ambonville et al. 2008 (48)	Case 1	MIDD	M	37	20/20	20/20	Macular pattern-like dystrophy	Y	30	7	Y	Not mentioned	-	N	-	-	N
56	Michaelides et al. 2008 (26)	Case III-3, Family 1	MIDD	F	46	20/20	20/20	Maculopathy	Y	Not mentioned	-	Y	-	-	N	-	-	N
57		Case IV-1, Family 1	Carrier	M	23	20/16	20/20	Normal	N	-	-	N	-	-	N	-	-	N
58		Case IV-2, Family 1	Carrier	F	19	20/20	20/20	Normal	N	-	-	N	-	-	N	-	-	N
59		Case III-11, Family 2	Carrier	F	54	20/40	20/30	Maculopathy	N	-	-	Y	-	-	N	-	-	N
60		Case II-4, Family 2	Carrier	F	92	20/125	20/80	Maculopathy	N	-	-	N	-	-	N	-	-	N
61		Case III-3, Family 2	Carrier	F	65	20/16	20/16	RPE mottling	N	-	-	N	-	-	N	-	-	N
62		Case III-5, Family 2	Carrier	F	50	20/20	20/20	Normal	N	-	-	Y	-	-	N	-	-	N
63		Case III-7, Family 2	Carrier	F	59	20/30	20/20	Maculopathy	N	-	-	Y	-	-	N	-	-	N

64		Case III-8, Family 2	MIDD	M	58	20/40	20/30	RPE mottling	Y	Not mentioned	-	Y	-	-	N	-	-	N
65		Case III-13, Family 2	Carrier	F	56	20/30	20/30	RPE mottling	N	-	-	Y	-	-	N	-	-	N
66		Case IV-4, Family 2	Carrier	M	36	20/16	20/16	RPE mottling	N	-	-	Y	-	-	N	-	-	N
67		Case IV-8, Family 2	Carrier	M	34	20/20	20/20	Normal	N	-	-	Y	-	-	N	-	-	N
68		Case IV-10, Family 2	Carrier	M	25	20/16	20/16	RPE mottling	N	-	-	Y	-	-	N	-	-	N
69		Case IV-11, Family 2	Carrier	F	34	20/20	20/30	Drusen	N	-	-	Y	-	-	N	-	-	N
70		Case IV-12, Family 2	Carrier	M	32	20/20	20/20	RPE mottling	N	-	-	Y	-	-	N	-	-	N
71		Case III-3, Family 3	Carrier	F	73	20/30	20/30	Maculopathy	Y	-	-	N	-	-	N	-	-	N
72		Case IV-1, Family 3	Carrier	F	48	20/30	20/30	Maculopathy	N	-	-	N	-	-	N	-	-	N
73		Case III-1, Family 4	Carrier	M	66	20/40	20/60	Maculopathy	N	-	-	Y	-	-	N	-	-	N
74		Case IV-4, Family 5	Carrier	F	52	CF	20/30	Maculopathy	N	-	-	Y	-	-	N	-	-	N
75		Case IV-1, Family 5	Carrier	M	59	20/16	20/16	RPE mottling	N	-	-	Y	-	-	N	-	-	N
76		Case IV-6, Family 5	Carrier	M	45	20/16	20/16	RPE mottling	N	-	-	Y	-	-	N	-	-	N
77		Case V-3, Family 5	Carrier	M	23	20/16	20/16	Drusen	N	-	-	N	-	-	N	-	-	N
78		Case III-7, Family 6	Carrier	F	48	20/40	20/40	Maculopathy	N	-	-	Y	-	-	N	-	-	N
79		Case III-4, Family 6	Carrier	F	52	20/30	20/30	RPE mottling	Y	Not mentioned	-	N	-	-	N	-	-	N
80		Case III-8, Family 6	MIDD	F	43	20/30	20/30	RPE mottling	Y	Not mentioned	-	Y	-	-	N	-	-	N
81		Case III-2, Family 7	MIDD	F	55	20/30	20/30	Maculopathy	Y	Not mentioned	-	Y	-	-	N	-	-	N
82		Case IV-1, Family 7	MIDD	M	29	20/16	20/16	Myopic fundus	Y	Impaired fasting glucose	-	Y	-	-	N	-	-	N
83		Case IV-2, Family 2	Carrier	F	30	20/16	20/16	Normal	N	-	-	N	-	-	N	-	-	N
84	Strauss et al. 2012 (56)	Case 1	Carrier	M	68	20/25	20/25	Macular RPE atrophy with small vitelliform lesions	N	-	-	N	-	-	N	-	-	N
85	Raja et al. 2013 (55)	Case 1	MIDD	F	70	20/32	20/32	Macular pattern-like dystrophy	Y	Not mentioned	-	Y	Not mentioned	-	N	-	-	N
86	Fung et al. 2013 (57)	Case 1	MELAS	F	45	20/60	20/50	Maculopathy with yellow subretinal deposits	N	-	-	Y	21	24	N	-	-	Migraines, exercise intolerance, dysphagia, dementia, painful peripheral sensory neuropathy, ataxia, and gait imbalance
87	Daruich et al. 2014 (50)	Case 1	MIDD	F	46	20/20	20/20	Macular RPE pigmentary changes	Y	20	26	Y	41	5	N	-	-	Migraine since age 26
88		Case 2	Carrier	F	45	20/20	20/30	Macular RPE pigmentary	N	-	-	Y	28	17	N	-	-	Chronic fatigue, migraine and

								clumping and atrophy										diffuse muscular pain
89	Kamal-Salah et al. 2015 (51)	Case 1	MELAS	F	24	20/40	20/70	Macular RPE pigmentary clumping and atrophy	N	-	-	N	-	-	Y	24	0	Motor focal seizures with oculocephalic deviation, left homonymous hemianopia
90	Quian et al. 2017 (54)	Case 1	Carrier	F	30	20/25	20/25	Macular RPE pigmentary clumping and atrophy	N	-	-	Y	Not mentioned	-	N	-	-	Intraretinal cystoid spaces OU

Abbreviations: OD: oculus dexter and OS: oculus sinister. F: female. M: male. Y: yes. N: no. MIDD: maternally inherited loss of hearing and diabetes. MELAS: mitochondrial myopathy, encephalopathy, lactic acidosis, and stroke-like episodes syndrome.