

Association of APOE e2 Genotype with Alzheimer's and Non-Alzheimer's Neurodegenerative Pathologies

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Supplementary Information

**Supplementary Table 1
APOE Genotype by PLAQUE THAL STAGE**

Frequency	APOE Genotype	NPTHAL(NPTHAL)						Total
		0	1	2	3	4	5	
	E2	48	14	8	17	16	27	130
	E3/E3	133	75	60	90	145	250	753
	E3/E4	14	25	25	61	109	301	535
	E4/E4	3	1	3	5	20	107	139
	Total	198	115	96	173	290	685	1557

Statistics for Table 1: APOE Genotype by NPTHAL

Statistic	DF	Value	Prob
Chi-Square	15	263.2261	<.0001

**Supplementary Table 2
APOE Genotype by BRAAK STAGE**

Frequency	APOE Genotype	BRAAK STAGE							Total
		0	1	2	3	4	5	6	
	E2	19	17	15	27	15	12	25	130
	E3/E3	53	78	100	84	94	130	214	753
	E3/E4	11	28	22	44	52	112	266	535
	E4/E4	0	2	2	2	6	30	97	139
	Total	83	125	139	157	167	284	602	1557

Statistics for Table 2: APOE Genotype by NACC BRAAK STAGE

Statistic	DF	Value	Prob
Chi-Square	18	234.6745	<.0001

Supplementary Table 3
APOE Genotype by NEURITIC PLAQUE FREQUENCY (# cases)

Frequency	APOE Genotype	NEURITIC PLAQUE STAGE				Total
		0	1	2	3	
	E2	61	13	19	37	130
	E3/E3	231	78	154	290	753
	E3/E4	51	34	108	342	535
	E4/E4	5	5	20	109	139
	Total	348	130	301	778	1557

Statistics for Table 3: APOE Genotype by NEURITIC PLAQUE

Statistic	DF	Value	Prob
Chi-Square	9	209.1753	<.0001

Supplementary Table 4. Independent Age and Sex Effects on AD Neuropathologies

		Wald	p	Point Estimate	CI
<u>Braak</u>	Age	2.39	.12	.99	.98 – 1.00
e2 v e3	Sex	5.59	.02	.75	.59 – .95
<u>Braak</u>	Age	5.57	.02	1.02	1.00 – 1.03
e2 v e4	Sex	4.12	.04	.76	.58 – .99
<u>Thal</u>	Age	1.09	.29	.99	.99 – 1.01
e2 v e3	Sex	4.08	.04	.78	.62 – .99
<u>Thal</u>	Age	.17	.67	.99	.98 – 1.01
e2 v e4	Sex	4.51	.03	.76	.39 – .77
<u>Neuritic Plaque</u>	Age	.17	.68	1.00	.59 – 1.01
e2 v e3	Sex	4.50	.03	.77	.60 – .98
<u>Neuritic Plaque</u>	Age	9.51	.002	1.02	1.01 – 1.04
e2 v e4	Sex	2.63	.10	.79	.59 – 1.05

**Supplementary Table 5
APOE e2/e4 by BRAAK STAGE**

Frequency	APOE	BRAAK STAGE							Total
	0	1	2	3	4	5	6		
E2/E3	19	17	15	26	15	12	23	127	
E2/E4	0	0	5	3	4	12	22	46	
E3/E3	52	77	99	84	92	128	210	742	
E3/E4	11	28	22	41	52	106	258	518	
Total	82	122	141	154	163	258	513	1433	

Statistics for Table 5: APOE e2/e4 by NACCBRAA

Statistic	DF	Value	Prob
Chi-Square	18	157.7241	<.0001

Supplementary Table 6
APOE e2/e4 by NEURITIC PLAQUE

		NEURITIC PLAQUE				
		0	1	2	3	Total
Frequency	E2/E3	61	13	18	35	127
	E2/E4	3	4	11	28	46
	E3/E3	228	78	150	286	742
	E3/E4	51	34	106	327	518
	Total	343	129	285	676	1433

Statistics for Table 6: APOE e2/e4 by NEURITIC PLAQUE

Statistic	DF	Value	Prob
Chi-Square	9	153.8538	<.0001

Supplementary Table 7. APOE e2/e4 by THAL AMYLOID

APOE		0	1	2	3	4	5	Total
Frequency								
	E2/E3	48	13	8	17	16	25	127
	E2/E4	2	2	3	3	13	23	46
	E3/E3	131	74	60	90	141	246	742
	E3/E4	14	25	25	60	103	291	518
	Total	195	114	96	170	273	585	1433

Statistics for Table 7: APOE e2/e4 by THAL

Statistic	DF	Value	Prob
Chi-Square	15	190.2329	<.0001

Supplementary Table 8
APOE Genotype by LEWY BODY EXTENT

Frequency	APOE Genotype	LEWY)				Total
		0	1	2	3	
	E2	88	15	21	9	133
	E3/E3	543	30	121	78	772
	E3/E4	319	15	120	81	535
	E4/E4	65	2	45	30	142
	Total	1015	62	307	198	1582

Statistics for Table 8: APOE Genotype by LEWY BODY EXTENT

Statistic	DF	Value	Prob
Chi-Square	9	74.6915	<.0001

Supplementary Table 9. Age and Sex Effects on Lewy Body Pathology

		Wald	p	Point Est.	CI
<u>Lewy Body</u>	Age	.09	.77	1.00	.99 – 1.01
e2 v e3	Sex	3.52	.06	.76	.57 – 1.01
	Age	2.74	.10	.99	.98 – 1.00
e2 v e4	Sex	.25	.61	.93	.70 – 1.23

Supplementary Table 10. APOE by TDP-43

	APOE	TDP-43		
		0	1	Total
Frequency	E2	90	17	107
Percent		7.20	1.36	8.56
Row Pct		84.11	15.89	
Col Pct		7.85	16.50	
	E3/E3	550	54	604
		44.00	4.32	48.32
		91.06	8.94	
		47.95	52.43	
	E3/E4	404	27	431
		32.32	2.16	34.48
		93.74	6.26	
		35.22	26.21	
	E4/E4	103	5	108
		8.24	0.40	8.64
		95.37	4.63	
		8.98	4.85	
	Total	1147	103	1250
		91.76	8.24	100.00

Frequency Missing = 227

Supplementary Table 11. APOE by PSP

		APOE		PSP	
			0	1	Total
Frequency	E2	97	10	107	
Percent		7.76	0.80	8.56	
Row Pct		90.65	9.35		
Col Pct		8.09	19.61		
	E3/E3	576	28	604	
		46.08	2.24	48.32	
		95.36	4.64		
		48.04	54.90		
	E3/E4	421	10	431	
		33.68	0.80	34.48	
		97.68	2.32		
		35.11	19.61		
	E4/E4	105	3	108	
		8.40	0.24	8.64	
		97.22	2.78		
		8.76	5.88		
	Total	1199	51	1250	
		95.92	4.08	100.00	

Frequency Missing = 227

Supplementary Table 12. APOE by Pick's B0dy Pathology

		APOE		Pick	Total
		0	1		
Frequency	E2	103	4		107
Percent		8.24	0.32		8.56
Row Pct		96.26	3.74		
Col Pct		8.41	16.00		
	E3/E3	586	18		604
		46.88	1.44		48.32
		97.02	2.98		
		47.84	72.00		
	E3/E4	428	3		431
		34.24	0.24		34.48
		99.30	0.70		
		34.94	12.00		
	E4/E4	108	0		108
		8.64	0.00		8.64
		100.00	0.00		
		8.82	0.00		
	Total	1225	25		1250
		98.00	2.00		100.00

Frequency Missing = 227