

## Supplemental Online Content

Belete D, Jacobs BM, Simonet C, et al. Association between antiepileptic drugs and incident Parkinson disease in the UK Biobank. *JAMA Neurol*. Published online December 27, 2022. doi:10.1001/jamaneurol.2022.4699

**eTable 1.** Medication Search Terms

**eTable 2.** Frequency of Cases Prescribed an Antiepileptic Drug

**eTable 3.** Demographics of Cases and Controls

**eTable 4.** Frequency of Prescribed Medications

**eTable 5.** Odds Ratios of Antiepileptic Drugs for Parkinson's Disease in Model Adjusting for Epilepsy Diagnosis

**eTable 6.** Sensitivity Analysis Excluding Prescriptions Issued 1, 2 and 5 Years Before Parkinson's Disease Diagnosis

**eTable 7.** Sensitivity Analysis With Parkinson's Disease Defined as Hospital Episode Statistic and Two or More Prescriptions for Parkinson's Disease Medications

This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1: Medication Search Terms

<b>Code</b>	<b>AED Search term</b>
Read V2	dnb*
Drug name	sodium valproate
Drug name	Sodium Valproate
Drug name	Sodium valproate
Drug name	SODIUM VALPROATE
Drug name	epilim
Drug name	Epilim
Drug name	EPILIM
Read V2	dn3*
Drug name	carbamazepine
Drug name	Carbamazepine
Drug name	CARBAMAZEPINE
Drug name	tegretol
Drug name	Tegretol
Drug name	TEGRETOL
Read V2	dno*
Drug name	levetiracetam
Drug name	Levetiracetam
Drug name	LEVETIRACETAM
Drug name	keppra
Drug name	Keppra
Drug name	KEPPRA
Read V2	dnf*
Drug name	lamotrigine
Drug name	Lamotrigine
Drug name	lamictal
Drug name	Lamictal
Drug name	LAMICTAL
<b>Code</b>	<b>PD medication search term</b>
Drug name	careldopa
Drug name	Careldopa
Drug name	CARELDOPA
Drug name	beneldopa
Drug name	Beneldopa
Drug name	BENELDOPA
Drug name	madopar
Drug name	Madopar
Drug name	MADOPAR
Drug name	Sinemet
Drug name	SINEMET
Read code	dq2*
Read code	dq3*
BNF code	04.09.01.01.00

Drug name	entacapone
Drug name	Entacapone
Drug name	ENTACAPONE
Drug name	rotigotine
Drug name	Rotigotine
Drug name	ROTIGOTINE
Drug name	eldepryl
Drug name	Eldepryl
Drug name	ELDEPRYL
Drug name	selegiline
Drug name	Selegiline
Drug name	SELEGILINE
Drug name	pramipexole
Drug name	Pramipexole
Drug name	PRAMIPEXOLE
Drug name	ropinirole
Drug name	Ropinirole
Drug name	ROPINIROLE
BNF code	04.09.01.02.00
Drug name	stalevo
Drug name	Stalevo
Drug name	STALEVO
Drug name	rasagiline
Drug name	Rasagiline
Drug name	RASAGILINE
Drug name	Azilect
Drug name	Caramet
Drug name	STALEVO
Drug name	Stalevo
Drug name	Sastravi
Drug name	SASTRAVI
Drug name	bromocriptine
Drug name	Bromocriptine
Drug name	BROMOCRIPTINE
Drug name	cabergoline
Drug name	Cabergoline
Drug name	CABERGOLINE
Drug name	Tolcapone
Read code	dqA*
Drug name	ReQuip
Drug name	Amantadine

eTable 2: Frequency of Cases Prescribed an Antiepileptic Drug

<b>Medications</b>	<b>Cases n=1433</b>
Carbamazepine	32 (2.23)
Clobazam	5 (0.35)
Lacosamide	2 (0.14)
Lamotrigine	15 (1.05)
Levetiracetam	12 (0.84)
Oxcarbazepine	0 (0)
Phenytoin	5 (0.35)
Sodium valproate	30 (2.09)
Zonisamide	1 (0.07)
Frequency (%) of cases prescribed anti-epileptic drugs.	

eTable 3: Demographics of Cases and Controls

<b>Demographics</b>	<b>Cases (n=1433)</b>	<b>Controls (n=8598)</b>
<b>Age at diagnosis</b>	71 (65 - 75)	71 (65 - 75)
<b>Townsend deprivation index</b>	-2.30 (-3.63 - 0.46)	-2.31 (-3.63 - 0.46)
<b>Sex</b>		
Male	873 (60.9)	5238 (60.9)
Female	560 (39.1)	3360 (39.1)
<b>Ethnicity</b>		
White	1397 (97.5)	8382 (97.5)
Non-white	36 (2.5)	216 (2.5)
Demographics of cases and controls. Continuous variables are expressed medians (inter-quartile range) and categorical as n (%).		

eTable 4: Frequency of Prescribed Medications

<b>Medications</b>	<b>Cases n=1433</b>	<b>Controls n=8598</b>
Any AEDs	62 (4.33)	211 (2.45)
Carbamazepine	32 (2.23)	135 (1.57)
Lamotrigine	15 (1.05)	32 (0.37)
Levetiracetam	12 (0.84)	24 (0.28)
Sodium valproate	30 (2.09)	48 (0.56)
Frequency (%) of prescribed medications in the primary case control set. AED: antiepileptic drug.		

eTable 5: Odds ratios of Antiepileptic Drugs for Parkinson's Disease in Model Adjusting for Epilepsy Diagnosis

<b>Medications</b>	<b>Cases</b>	<b>Controls</b>	<b>OR</b>	<b>Lower 95% CI</b>	<b>Upper 95% CI</b>
Any AEDs	62	211	1.21	0.87	1.68
Carbamazepine	32	135	1.06	0.70	1.60
Lamotrigine	15	32	1.45	0.74	2.83
Levetiracetam	12	24	1.55	0.74	3.28
Sodium valproate	30	48	2.28	1.38	3.79
Multivariable logistic model for Parkinson's disease with OR and 95% CI adjusted for age, sex, Townsend deprivation index and HES epilepsy diagnosis. Cases n = 1433. Controls n = 8598. OR: odds ratio. CI: confidence interval. AED: antiepileptic drug.					

eTable 6: Sensitivity Analysis Excluding Prescriptions Issued 1, 2 and 5 Years Before Parkinson's Disease Diagnosis

<b>Medications</b>	<b>Cases</b>	<b>Controls</b>	<b>OR</b>	<b>Lower 95% CI</b>	<b>Upper 95% CI</b>
<b>1 year</b>					
Any AEDs	60	201	1.83	1.36	2.45
Carbamazepine	32	130	1.49	1.01	2.20
Lamotrigine	14	30	2.82	1.49	5.33
Levetiracetam	12	22	3.29	1.63	6.67
Sodium valproate	29	45	3.93	2.46	6.29
<b>2 years</b>					
Any AEDs	52	186	1.70	1.25	2.33
Carbamazepine	28	120	1.41	0.93	2.13
Lamotrigine	14	29	2.92	1.54	5.53
Levetiracetam	9	20	2.71	1.23	5.97
Sodium valproate	26	43	3.68	2.25	6.01
<b>5 years</b>					
Any AEDs	46	156	1.79	1.29	2.51
Carbamazepine	25	106	1.42	0.92	2.21
Lamotrigine	12	22	3.29	1.63	6.67
Levetiracetam	6	11	3.28	1.21	8.89
Sodium valproate	24	37	3.94	2.35	6.61
Multivariable logistic model for Parkinson's disease with OR and 95% CI adjusted for age, sex and Townsend deprivation index. Cases n = 1433. Controls n = 8598. OR: odds ratio. CI: confidence interval. AED: antiepileptic drug.					



eTable 7: Sensitivity Analysis With Parkinson’s Disease Defined as Hospital Episode Statistic and Two or More Prescriptions for Parkinson’s Disease Medications

<b>Medications</b>	<b>Cases</b>	<b>Controls</b>	<b>OR</b>	<b>Lower 95% CI</b>	<b>Upper 95% CI</b>
Any AEDs	29	130	1.35	0.90	2.03
Carbamazepine	16	84	1.14	0.67	1.96
Lamotrigine	4	16	1.51	0.50	4.52
Levetiracetam	5	19	1.58	0.59	4.25
Sodium valproate	14	29	2.94	1.55	5.58
Multivariable logistic model for Parkinson’s disease with OR and 95% CI adjusted for age, sex and Townsend deprivation index. Cases n = 913. Controls n = 5478. OR: odds ratio. CI: confidence interval. AED: antiepileptic drug.					