

Consumption of milk and other dairy products and incidence of Parkinson's disease: a prospective cohort study in French women

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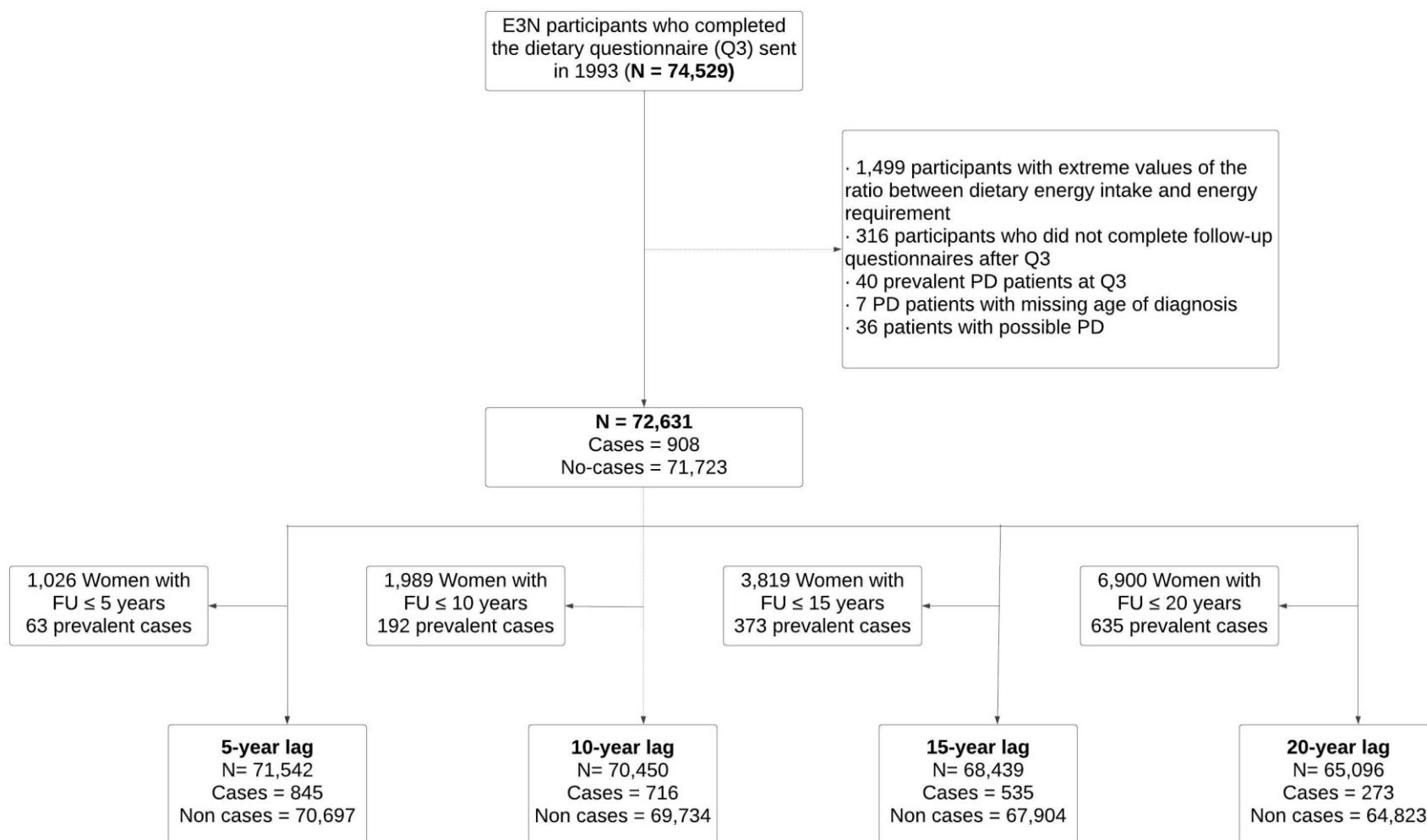
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Supplementary Figure 1. Flow chart for inclusion into the study (5-year, 10-year, 15-year, and 20-year lag).



Supplementary Table 1. Participant's characteristics at baseline (1993-Q3) according to Parkinson's disease status at the end of the follow-up.

Characteristics, N (%)	Parkinson's Disease	
	No N=70,697	Yes N=845
Age (years), M (SD)	52.8 (6.6)	56.1 (6.5)
Place of residence		
Rural	9,773 (15.0)	101 (12.9)
Urban	55,444 (85.0)	681 (87.1)
Missing	5,480	63
Menopausal status		
Premenopausal	30,250 (43.3)	197 (23.4)
Natural menopause	33,918 (48.5)	531 (63.1)
Artificial menopause	5,291 (7.6)	111 (13.2)
Unknown type of menopause	460 (0.7)	3 (0.4)
Missing	778	3
Age at menarche (years), M (SD)	12.8 (1.4)	12.9 (1.4)
≤11	14,389 (20.8)	177 (21.4)
12-13	35,283 (50.9)	389 (47.0)
≥14	19,625 (28.3)	261 (31.6)
Missing	1,400	18
Parity		
Nulliparous	8,357 (11.9)	93 (11.1)
One child	11,080 (15.8)	107 (12.8)
Two children	30,323 (43.2)	343 (41.1)
≥three children	20,470 (29.1)	292 (35.0)
Missing	467	10
Smoking		
Never	37,748 (53.5)	477 (56.5)
Ex	23,251 (33.0)	280 (33.2)
Current	9,564 (13.6)	87 (10.3)
Missing	134	1
Body mass index (kg/m²), M (SD)	23.0 (3.3)	23.2 (3.0)
<18.5	2,382 (3.4)	23 (2.7)
18.5-24.9	53,488 (75.7)	639 (75.6)
25.0-29.9	12,144 (17.2)	159 (18.8)
≥30.0	2,683 (3.8)	24 (2.8)
Physical activity (MET-h/week)		
<22.8	17,483 (24.9)	192 (22.8)
22.8-37.9	17,595 (25.1)	209 (24.8)
38.0-61	17,625 (25.1)	230 (27.3)
>61	17,531 (25.0)	212 (25.1)
Missing	463	2
Caffeine intake (mg/day), M (SD)	202.2 (149.8)	191.5 (139.0)
<93.5	17,586 (24.9)	220 (26.0)
93.5-174.1	17,775 (25.1)	209 (24.7)
174.2-271.3	17,690 (25.0)	234 (27.7)
≥271.4	17,646 (25.0)	182 (21.5)
Adherence to Mediterranean diet		
≤3	20,731 (29.3)	236 (27.9)
4-5	31,913 (45.1)	388 (45.9)
≥6	18,053 (25.5)	221 (26.2)

Characteristics, N (%)	Parkinson's Disease	
	No N=70,697	Yes N=845
Total energy intake (Kcal/day), M (SD)	2210.9 (560.4)	2204.2 (543.0)
<1812.6	17,659 (25.0)	194 (23.0)
1812.6-2156.6	17,662 (25.0)	240 (28.4)
2156.7-2551.2	17,678 (25.0)	215 (25.4)
≥2551.3	17,698 (25.0)	196 (23.2)
Constipation		
No	52,890 (75.4)	609 (72.6)
Yes	17,223 (24.6)	230 (27.4)
Missing	584	6
Depression		
No	55,494 (78.5)	654 (77.4)
Yes	15,203 (21.5)	191 (22.6)
Calcium intake, M (SD)	1065.9 (366.8)	1076.81 (377.9)
Total milk consumption		
No	30,242 (42.8)	369 (43.7)
Yes	40,455 (57.2)	476 (56.3)
Pure milk consumption		
No	54,622 (77.3)	637 (75.4)
Yes	16,075 (22.7)	208 (24.6)
Added milk consumption		
No	37,304 (52.8)	460 (54.4)
Yes	33,393 (47.2)	385 (45.6)

M, mean; SD, standard deviation; MET, metabolic equivalent of task.

Supplementary Table 2. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by total milk consumption: analyses lagged by 10 years.

Total milk consumption (ml/day)	Cases	Model 1			Model 2		Model 3		Model 4	
		IR	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
No	312	74.0	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	404	71.5	0.95 (0.82-1.10)	0.492	0.94 (0.81-1.09)	0.411	0.93 (0.80-1.08)	0.346	0.93 (0.80-1.08)	0.360
No	312	74.0	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<60	90	65.3	0.88 (0.69-1.11)	0.272	0.88 (0.69-1.11)	0.265	0.87 (0.69-1.10)	0.256	0.87 (0.69-1.11)	0.260
60-149	93	65.3	0.86 (0.68-1.08)	0.200	0.85 (0.67-1.07)	0.169	0.84 (0.67-1.06)	0.151	0.85 (0.67-1.07)	0.159
150-269	99	74.9	0.99 (0.79-1.24)	0.939	0.98 (0.78-1.24)	0.875	0.97 (0.77-1.22)	0.811	0.97 (0.77-1.23)	0.825
≥270	122	79.9	1.06 (0.86-1.31)	0.561	1.06 (0.85-1.31)	0.624	1.04 (0.84-1.29)	0.715	1.04 (0.84-1.30)	0.705
Per SD ^a	716	72.6	1.05 (0.98-1.13)	0.141	1.05 (0.98-1.13)	0.162	1.05 (0.98-1.13)	0.197	1.05 (0.98-1.13)	0.191
Per SD among drinkers ^a	716	72.6	1.10 (1.02-1.20)	0.012	1.10 (1.01-1.20)	0.022	1.10 (1.01-1.20)	0.026	1.10 (1.01-1.20)	0.026

IR, crude incidence rate of Parkinson's disease per 100,000 person-years; SD, standard deviation.

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche (≤11/12-13/≥14 years), parity (nulliparous/one child/two children/≥three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet (≤3/4-5 /≥6).

Model 3: further adjusted for total energy intake (quartiles).

Model 4: further adjusted for BMI (<18.5, 18.5–24.9, 25.0–29.9, ≥30.0 kg/m²).

^a SD, 162 ml/day.

Supplementary Table 3. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by total milk consumption: analyses lagged by 15 years.

Total milk consumption (ml/day)	Cases	Model 1			Model 2		Model 3		Model 4	
		IR	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
No	232	85.1	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	303	82.8	0.96 (0.81-1.14)	0.642	0.95 (0.80-1.13)	0.568	0.94 (0.79-1.12)	0.461	0.94 (0.79-1.12)	0.462
No	232	85.1	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<60	68	76.2	0.89 (0.68-1.17)	0.404	0.89 (0.68-1.17)	0.397	0.89 (0.68-1.16)	0.382	0.89 (0.68-1.16)	0.383
60-149	68	73.6	0.85 (0.65-1.11)	0.231	0.84 (0.64-1.10)	0.214	0.83 (0.63-1.09)	0.184	0.83 (0.64-1.09)	0.188
150-269	79	92.3	1.07 (0.83-1.38)	0.622	1.06 (0.82-1.38)	0.640	1.05 (0.81-1.36)	0.730	1.05 (0.81-1.36)	0.734
≥270	88	89.2	1.04 (0.81-1.32)	0.777	1.02 (0.79-1.31)	0.872	1.00 (0.77-1.29)	0.976	1.00 (0.77-1.28)	0.972
per SD ^a	535	83.8	1.06 (0.98-1.15)	0.145	1.06 (0.98-1.15)	0.174	1.05 (0.97-1.14)	0.242	1.05 (0.97-1.14)	0.244
per SD among drinkers ^a	535	83.8	1.11 (1.01-1.22)	0.032	1.11 (1.01-1.21)	0.039	1.10 (1.00-1.21)	0.053	1.10 (1.00-1.21)	0.054

IR, crude incidence rate of Parkinson's disease per 100,000 person-years; SD, standard deviation.

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche ($\leq 11/12-13 \geq 14$ years), parity (nulliparous/one child/two children/ $\geq$ three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet ($\leq 3/4-5 \geq 6$).

Model 3: further adjusted for total energy intake (quartiles).

Model 4: further adjusted for BMI ($<18.5, 18.5-24.9, 25.0-29.9, \geq 30.0$ kg/m²).

^a SD, 162 ml/day.

Supplementary Table 4. Hazards ratios (HRs) and 95% confidence intervals (Cis) of incident Parkinson's disease by total milk consumption: analyses lagged by 20 years.

Total milk consumption (ml/day)	Model 1				Model 2		Model 3		Model 4	
	Cases	IR	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
No	121	93.3	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	152	87.3	0.92 (0.73-1.17)	0.511	0.91 (0.71-1.16)	0.444	0.89 (0.70-1.14)	0.359	0.89 (0.70-1.14)	0.369
No	121	93.3	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<60	36	84.8	0.91 (0.62-1.31)	0.599	0.91 (0.63-1.32)	0.615	0.91 (0.62-1.31)	0.598	0.91 (0.62-1.32)	0.605
60-149	33	74.9	0.79 (0.54-1.16)	0.223	0.78 (0.53-1.15)	0.210	0.77 (0.52-1.13)	0.185	0.77 (0.53-1.14)	0.195
150-269	37	90.8	0.95 (0.66-1.38)	0.805	0.94 (0.65-1.37)	0.753	0.92 (0.64-1.34)	0.674	0.92 (0.64-1.34)	0.680
≥270	46	98.3	1.04 (0.74-1.46)	0.812	1.01 (0.71-1.43)	0.954	0.98 (0.69-1.39)	0.889	0.98 (0.69-1.39)	0.890
per SD ^a	273	89.9	1.06 (0.95-1.19)	0.279	1.06 (0.94-1.19)	0.337	1.05 (0.93-1.17)	0.452	1.05 (0.93-1.17)	0.451
per SD among drinkers ^a	273	89.9	1.13 (0.99-1.28)	0.066	1.13 (0.99-1.29)	0.061	1.11 (0.98-1.27)	0.113	1.11 (0.98-1.27)	0.113

IR, crude incidence rate of Parkinson's disease per 100,000 person-years; SD, standard deviation.

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche ($\leq 11/12-13 \geq 14$ years), parity (nulliparous/one child/two children/ $\geq$ three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet ($\leq 3/ [4-5] \geq 6$).

Model 3: further adjusted for total energy intake (quartiles).

Model 4: further adjusted for BMI ($<18.5, 18.5-24.9, 25-30, >30$ kg/m²).

^a SD, 162 ml/day.

Supplementary Table 5. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by intake of pure and added milk: analyses lagged by 10 years.

	Model 1				Model 2		Model 3		Model 4	
Milk consumption (ml/day)	Cases	IR	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Pure milk										
No	538	70.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	178	78.9	1.17 (0.99-1.39)	0.068	1.18 (0.99-1.40)	0.059	1.17 (0.99-1.39)	0.068	1.17 (0.99-1.39)	0.067
No	538	70.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<28.6	39	66.4	1.03 (0.74-1.43)	0.865	1.04 (0.75-1.44)	0.829	1.03 (0.75-1.43)	0.840	1.04 (0.75-1.43)	0.837
28.6-85.6	39	79.7	1.20 (0.87-1.67)	0.269	1.22 (0.88-1.70)	0.226	1.22 (0.88-1.69)	0.231	1.22 (0.88-1.70)	0.228
85.7-200	47	75.4	1.10 (0.82-1.48)	0.529	1.10 (0.82-1.49)	0.520	1.10 (0.82-1.49)	0.529	1.10 (0.82-1.49)	0.529
≥201.0	53	95.4	1.37 (1.03-1.81)	0.030	1.37 (1.03-1.82)	0.031	1.36 (1.02-1.81)	0.034	1.36 (1.02-1.81)	0.034
per SD ^a	716	72.6	1.10 (1.03-1.17)	0.002	1.10 (1.04-1.17)	0.002	1.10 (1.03-1.17)	0.003	1.10 (1.03-1.17)	0.003
per SD among drinkers ^a	716	72.6	1.10 (1.02-1.20)	0.020	1.10 (1.02-1.20)	0.021	1.10 (1.01-1.20)	0.022	1.10 (1.01-1.20)	0.023
Added milk										
No	389	74.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	327	70.2	0.90 (0.77-1.04)	0.147	0.88 (0.76-1.02)	0.098	0.87 (0.75-1.02)	0.080	0.88 (0.75-1.02)	0.085
No	389	74.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<52.7	80	67.7	0.86 (0.68-1.10)	0.231	0.86 (0.67-1.09)	0.204	0.85 (0.67-1.09)	0.197	0.85 (0.67-1.09)	0.202
52.7-122.8	67	58.1	0.75 (0.57-0.97)	0.026	0.73 (0.56-0.95)	0.019	0.73 (0.56-0.94)	0.017	0.73 (0.56-0.95)	0.018
122.9-231.3	87	75.2	0.97 (0.76-1.22)	0.764	0.95 (0.75-1.20)	0.651	0.94 (0.74-1.19)	0.597	0.94 (0.74-1.19)	0.613
≥231.4	93	79.7	1.03 (0.82-1.30)	0.778	1.02 (0.81-1.29)	0.861	1.01 (0.80-1.28)	0.923	1.01 (0.80-1.28)	0.908
P-quadratic trend				0.026		0.021		0.020		0.021
per SD ^b	716	72.6	0.99 (0.92-1.07)	0.817	0.99 (0.92-1.07)	0.751	0.99 (0.91-1.06)	0.694	0.99 (0.91-1.06)	0.710
per SD among drinkers ^b	716	72.6	1.04 (0.95-1.13)	0.445	1.04 (0.95-1.14)	0.444	1.03 (0.94-1.13)	0.470	1.04 (0.94-1.13)	0.468

IR, crude incidence rate of Parkinson's disease per 100,000 person-years; SD, standard deviation.

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche (≤11/12-13/≥14 years), parity (nulliparous/one child/two children/≥three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet (≤3/4-5/≥6).

Model 3: further adjusted for total energy intake (quartiles).

Model 4: further adjusted for BMI (<18.5, 18.5–24.9, 25.0–29.9, ≥30.0 kg/m²).

^a SD, 85 ml/day.

^b SD, 136 ml/day.

Supplementary Table 6. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by intake of pure and added milk: analyses lagged by 15 years.

Milk consumption (ml/day)	Model 1				Model 2		Model 3		Model 4	
	Cases	IR	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Pure milk										
No	398	80.8	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	137	93.8	1.21 (0.99-1.47)	0.059	1.21 (0.99-1.47)	0.062	1.19 (0.98-1.45)	0.078	1.19 (0.98-1.45)	0.078
No	398	80.8	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<28.6	29	76.0	1.02 (0.70-1.48)	0.937	1.02 (0.70-1.49)	0.932	1.01 (0.69-1.48)	0.954	1.01 (0.69-1.48)	0.945
28.6-85.6	27	85.1	1.11 (0.75-1.64)	0.612	1.11 (0.75-1.65)	0.590	1.11 (0.75-1.64)	0.610	1.11 (0.75-1.64)	0.607
85.6-200	40	99.2	1.26 (0.91-1.74)	0.166	1.26 (0.91-1.74)	0.166	1.25 (0.90-1.73)	0.181	1.25 (0.90-1.73)	0.182
≥201.0	41	114.2	1.42 (1.03-1.96)	0.033	1.41 (1.02-1.94)	0.039	1.39 (1.00-1.92)	0.047	1.39 (1.00-1.92)	0.048
per SD ^a	535	83.8	1.11 (1.03-1.19)	0.005	1.10 (1.03-1.18)	0.006	1.10 (1.03-1.18)	0.008	1.10 (1.03-1.18)	0.008
per SD among drinkers ^a	535	83.8	1.10 (1.00-1.21)	0.050	1.10 (1.00-1.21)	0.057	1.10 (1.00-1.21)	0.062	1.10 (1.00-1.21)	0.064
Added milk										
No	290	86.1	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	245	81.2	0.90 (0.76-1.07)	0.249	0.89 (0.75-1.06)	0.204	0.88 (0.74-1.05)	0.160	0.88 (0.74-1.05)	0.162
No	290	86.1	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<52.7	64	83.6	0.93 (0.71-1.22)	0.605	0.93 (0.71-1.22)	0.580	0.92 (0.70-1.21)	0.563	0.92 (0.70-1.21)	0.566
52.7-122.8	47	62.9	0.70 (0.52-0.96)	0.026	0.70 (0.51-0.95)	0.023	0.69 (0.51-0.94)	0.020	0.69 (0.51-0.94)	0.020
122.9-231.3	64	85.5	0.96 (0.73-1.26)	0.769	0.95 (0.72-1.25)	0.717	0.94 (0.71-1.23)	0.641	0.94 (0.71-1.23)	0.642
≥231.4	70	92.8	1.05 (0.81-1.36)	0.720	1.04 (0.79-1.35)	0.792	1.02 (0.78-1.33)	0.898	1.02 (0.78-1.33)	0.897
P-quadratic trend				0.039		0.038		0.039		0.039
per SD ^b	535	83.8	1.00 (0.91-1.08)	0.923	0.99 (0.91-1.08)	0.871	0.99 (0.90-1.08)	0.761	0.99 (0.90-1.08)	0.761
per SD among drinkers ^b	535	83.8	1.04 (0.94-1.15)	0.489	1.04 (0.93-1.15)	0.510	1.03 (0.93-1.15)	0.568	1.03 (0.93-1.15)	0.572

IR, crude incidence rate of Parkinson's disease per 100,000 person-years; SD, standard deviation.

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche (≤11/12-13/≥14 years), parity (nulliparous/one child/two children/≥three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet (≤3/ 4-5 /≥6).

Model 3: further adjusted for total energy intake (quartiles).

Model 4: further adjusted for BMI (<18.5, 18.5–24.9, 25.0–29.9, ≥30.0 kg/m²).

^a SD, 85 ml/day.

^b SD, 136 ml/day.

Supplementary Table 7. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by intake of pure and added milk: analyses lagged by 20 years.

	Model 1				Model 2		Model 3		Model 4	
Milk consumption (ml/day)	Cases	IR	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Pure milk										
No	203	86.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	70	100.6	1.22 (0.93-1.60)	0.155	1.21 (0.92-1.59)	0.178	1.19 (0.90-1.56)	0.223	1.19 (0.90-1.56)	0.224
No	203	86.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<28.6	12	65.7	0.83 (0.46-1.49)	0.536	0.84 (0.47-1.50)	0.546	0.83 (0.46-1.49)	0.530	0.83 (0.46-1.49)	0.535
28.6-85.6	14	92.7	1.14 (0.66-1.95)	0.648	1.14 (0.66-1.96)	0.647	1.12 (0.65-1.93)	0.686	1.12 (0.65-1.93)	0.680
85.7-200	23	119.9	1.43 (0.93-2.20)	0.107	1.43 (0.92-2.20)	0.109	1.40 (0.91-2.17)	0.125	1.40 (0.91-2.17)	0.125
≥201.0	21	123.4	1.42 (0.91-2.23)	0.124	1.37 (0.87-2.16)	0.169	1.34 (0.85-2.11)	0.209	1.33 (0.85-2.10)	0.217
per SD ^a	273	89.9	1.13 (1.03-1.24)	0.013	1.12 (1.02-1.23)	0.020	1.11 (1.01-1.23)	0.029	1.11 (1.01-1.23)	0.030
per SD among drinkers ^a	273	89.9	1.14 (1.00-1.29)	0.052	1.13 (0.99-1.29)	0.069	1.12 (0.99-1.28)	0.080	1.12 (0.99-1.28)	0.084
Added milk										
No	155	96.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	118	82.2	0.81 (0.64-1.04)	0.094	0.80 (0.63-1.03)	0.079	0.79 (0.62-1.01)	0.062	0.79 (0.62-1.01)	0.065
No	155	96.7	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<52.7	34	93.4	0.93 (0.64-1.34)	0.688	0.93 (0.64-1.35)	0.690	0.93 (0.64-1.34)	0.682	0.93 (0.64-1.35)	0.691
52.7-122.8	23	64.5	0.64 (0.42-1.00)	0.049	0.64 (0.41-0.99)	0.046	0.63 (0.41-0.98)	0.041	0.63 (0.41-0.99)	0.043
122.9-231.3	24	67.4	0.68 (0.44-1.04)	0.073	0.66 (0.43-1.02)	0.064	0.65 (0.42-1.01)	0.053	0.65 (0.42-1.01)	0.055
≥231.4	37	103.3	1.04 (0.73-1.49)	0.823	1.02 (0.71-1.47)	0.920	0.99 (0.68-1.44)	0.960	0.99 (0.69-1.44)	0.968
P-quadratic trend				0.021		0.023		0.025		0.026
per SD ^b	273	89.9	0.98 (0.87-1.11)	0.748	0.98 (0.86-1.11)	0.715	0.97 (0.85-1.10)	0.610	0.97 (0.85-1.10)	0.619
per SD among drinkers ^b	273	89.9	1.07 (0.92-1.23)	0.387	1.06 (0.92-1.23)	0.409	1.06 (0.91-1.22)	0.477	1.05 (0.91-1.22)	0.480

IR, crude incidence rate of Parkinson's disease per 100,000 person-years; SD, standard deviation.

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche (≤11/12-13/≥14 years), parity (nulliparous/one child/two children/≥three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet (≤3/ 4-5 /≥6).

Model 3: further adjusted for total energy intake (quartiles).

Model 4: further adjusted for BMI (<18.5, 18.5–24.9, 25.0–29.9, ≥30.0 kg/m²).

^a SD, 85 ml/day.

^b SD, 136 ml/day.

Supplementary Table 8. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by one SD increment of intake of calcium.

Calcium intake (1-SD, mg)	Model 1		Model 2		Model 3	
	HR (95% IC)	P-value	HR (95% IC)	P-value	HR (95% IC)	P-value
Total intake (367.4)	1.05 (0.98-1.12)	0.197	1.04 (0.98-1.12)	0.219	1.04 (0.96-1.12)	0.405
Sources						
Dairy products (320.6)	1.04 (0.98-1.12)	0.208	1.04 (0.98-1.12)	0.221	1.04 (0.96-1.11)	0.370
Total milk (192.7)	1.05 (0.98-1.12)	0.176	1.04 (0.98-1.12)	0.171	1.04 (0.97-1.11)	0.231
Pure milk (98.4)	1.08 (1.02-1.15)	0.008	1.08 (1.02-1.15)	0.007	1.08 (1.02-1.15)	0.009
Added milk (163.0)	1.00 (0.93-1.07)	0.988	1.00 (0.93-1.07)	0.964	0.99 (0.93-1.06)	0.831
Non-dairy products (124.4)	1.02 (0.95-1.09)	0.614	1.02 (0.95-1.09)	0.623	1.00 (0.92-1.09)	0.975

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model 1: adjusted for age (as the timescale).

Model 2: further adjusted for baseline place of residence (rural/urban), age at menarche ($\leq 11/12-13/\geq 14$ years), parity (nulliparous/one child/two children/ $\geq$ three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles) and adherence to Mediterranean diet ($\leq 3/4-5/\geq 6$).

Model 3: further adjusted for total energy intake (quartiles).

Supplementary Table 9. Hazards ratios (HRs) and 95% confidence intervals (CIs) of incident Parkinson's disease by milk consumption: analyses adjusted for constipation and depression.

Milk consumption (ml/day)	5-year lag		10-year lag		15-year lag		20-year lag	
	HR (95% IC)	P-value	HR (95% IC)	P-value	HR (95% IC)	P-value	HR (95% IC)	P-value
Total milk								
No	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	0.93 (0.81-1.07)	0.312	0.93 (0.80-1.08)	0.352	0.94 (0.79-1.12)	0.472	0.89 (0.70-1.14)	0.367
No	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<60	0.89 (0.72-1.10)	0.280	0.87 (0.69-1.11)	0.259	0.89 (0.68-1.16)	0.391	0.91 (0.63-1.32)	0.612
60-149	0.88 (0.71-1.08)	0.219	0.84 (0.67-1.07)	0.153	0.83 (0.64-1.09)	0.187	0.77 (0.52-1.13)	0.186
150-269	0.94 (0.76-1.16)	0.554	0.97 (0.77-1.23)	0.822	1.05 (0.81-1.36)	0.711	0.93 (0.64-1.35)	0.690
≥270	1.03 (0.84-1.25)	0.804	1.04 (0.84-1.29)	0.714	1.00 (0.77-1.28)	0.974	0.98 (0.69-1.39)	0.887
per SD ^a	1.04 (0.98-1.12)	0.200	1.05 (0.98-1.13)	0.198	1.05 (0.97-1.14)	0.248	1.04 (0.93-1.17)	0.461
per SD among drinkers ^a	1.09 (1.01-1.18)	0.024	1.10 (1.01-1.19)	0.027	1.10 (1.00-1.21)	0.056	1.11 (0.97-1.27)	0.124
Pure milk								
No	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	1.16 (0.99-1.36)	0.066	1.17 (0.99-1.39)	0.068	1.19 (0.98-1.45)	0.082	1.18 (0.90-1.56)	0.230
No	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<28.6	1.08 (0.81-1.46)	0.590	1.04 (0.75-1.44)	0.832	1.01 (0.69-1.48)	0.948	0.83 (0.46-1.49)	0.539
28.6-85.6	1.20 (0.89-1.62)	0.249	1.22 (0.88-1.69)	0.231	1.11 (0.75-1.64)	0.616	1.12 (0.65-1.92)	0.695
85.7-200	1.11 (0.84-1.45)	0.477	1.10 (0.82-1.48)	0.532	1.25 (0.90-1.73)	0.188	1.40 (0.91-2.16)	0.130
≥201.0	1.28 (0.98-1.67)	0.076	1.36 (1.02-1.81)	0.034	1.38 (1.00-1.91)	0.050	1.33 (0.84-2.09)	0.221
per SD ^b	1.08 (1.02-1.14)	0.012	1.10 (1.03-1.17)	0.003	1.10 (1.02-1.18)	0.009	1.11 (1.01-1.22)	0.032
per SD among drinkers ^b	1.07 (0.99-1.16)	0.100	1.10 (1.01-1.20)	0.023	1.09 (0.99-1.20)	0.067	1.12 (0.98-1.28)	0.086
Added milk								
No	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
Yes	0.87 (0.76-1.00)	0.057	0.87 (0.75-1.02)	0.082	0.89 (0.74-1.05)	0.169	0.79 (0.62-1.02)	0.066
No	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.	1.00 (Reference)	.
<52.7	0.84 (0.67-1.05)	0.125	0.85 (0.67-1.09)	0.198	0.92 (0.70-1.21)	0.570	0.93 (0.64-1.35)	0.693
52.7-122.8	0.77 (0.61-0.98)	0.030	0.73 (0.56-0.95)	0.017	0.69 (0.51-0.95)	0.021	0.63 (0.41-0.98)	0.042
122.9-231.3	0.92 (0.74-1.15)	0.482	0.94 (0.74-1.19)	0.608	0.94 (0.72-1.24)	0.665	0.66 (0.42-1.01)	0.057
≥231.4	0.98 (0.79-1.22)	0.882	1.01 (0.80-1.28)	0.923	1.02 (0.78-1.33)	0.889	0.99 (0.69-1.44)	0.967
per SD ^c	1.00 (0.93-1.07)	0.929	0.99 (0.91-1.06)	0.695	0.99 (0.90-1.08)	0.769	0.97 (0.85-1.10)	0.615
per SD among drinkers ^c	1.05 (0.97-1.14)	0.220	1.03 (0.94-1.13)	0.474	1.03 (0.93-1.15)	0.574	1.05 (0.91-1.22)	0.485

Hazard ratios (HR) and 95% confidence intervals (CI) calculated using Cox proportional hazards models with age as the time scale.

Model adjusted for age (as the timescale), baseline place of residence (rural/urban), age at menarche (≤11/12-13/≥14 years), parity (nulliparous/one child/two children/≥three children), smoking (never/ex/current), menopausal status (premenopausal/natural/artificial/unknown type), physical activity (quartiles), caffeine intake (quartiles), adherence to Mediterranean diet (≤3/ 4-5 /≥6), total energy intake (quartiles), depression (no/yes) and constipation (no/yes).

^a SD, 162 ml/day.

^b SD, 85 ml/day.

^c SD, 136 ml/day.