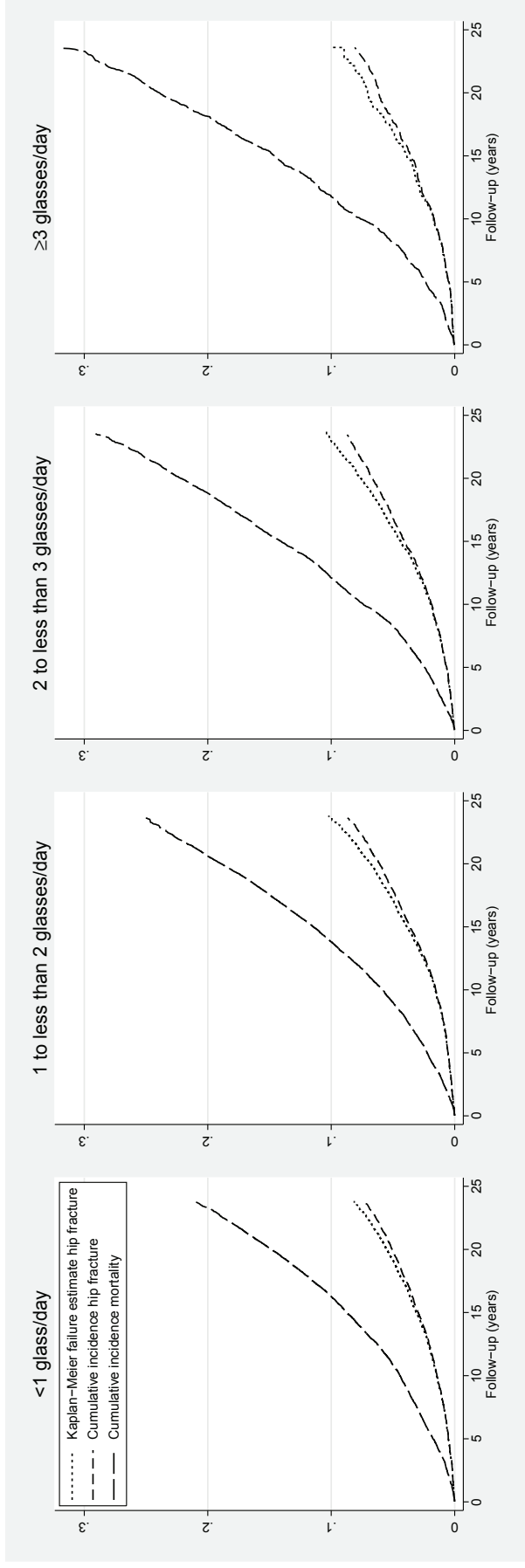
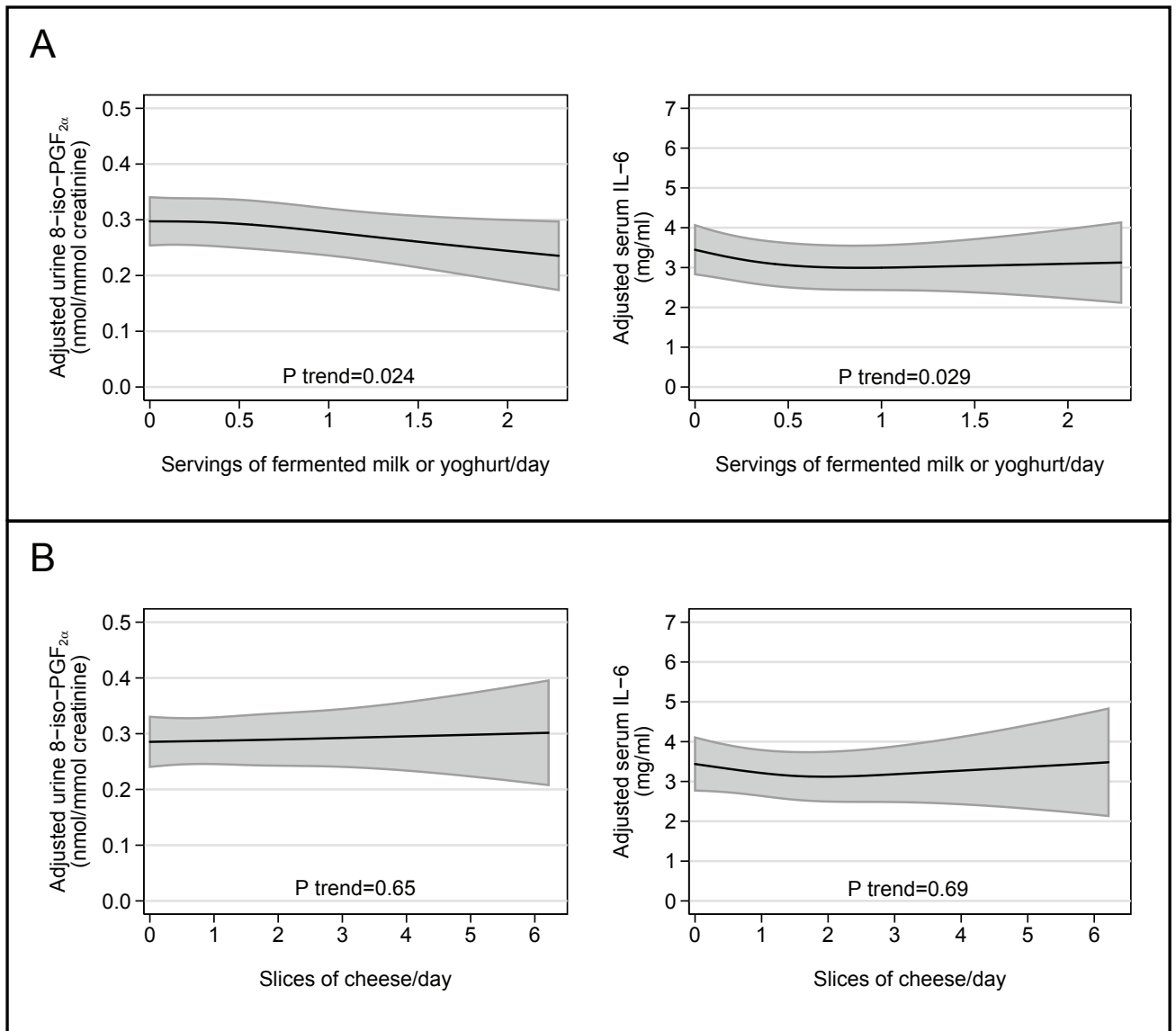


Appendix Figure A. Directed Acyclic Graph (DAG) for milk intake and fracture risk.



Appendix Figure B. Cumulative incidence curves for hip fracture and all-cause mortality by milk intake in the Swedish Mammography Cohort. The solid line represents the Kaplan-Meier failure estimate for hip fracture. The figure indicates that the overestimation of hip fracture incidence by the Kaplan-Meier failure estimate is small and does not differ by categories of milk intake and that an approximation to survival methods is acceptable.



Appendix Figure C. Adjusted predictions of urine log(8-iso-PGF<sub>2α</sub>), a marker of oxidative stress (n=700) and serum log(IL-6; n=633), a marker of inflammation, after cubic spline regression with fermented milk/yogurt consumption (panel A) and cheese consumption (panel B). Consumption was assessed among men aged 71 years and measurement of inflammatory markers was at age 77 years. Covariates were age, BMI, energy intake, education, smoking status and physical activity. One serving of fermented milk/yogurt corresponds to 100 grams and one slice of cheese corresponds to 20 grams.

**Table A.** Baseline characteristics of the women in the Swedish Mammography Cohort (1987-90) and of the men in the Cohort of Swedish Men (1997) by categories of cheese intake. Values are numbers (percentages) unless stated otherwise

	Categories of daily cheese intake			
	<20 g/d	20-39 g/d	40-59 g/d	≥60 g/d
<b>The Swedish Mammography Cohort</b>				
No	22678	22606	6956	9193
Mean (SD) age at entry (years)	57.2 (10.6)	50.9 (7.7)	61.9 (5.8)	45.7 (4.9)
Mean (SD) body mass index (kg/m <sup>2</sup> )	25.3 (4.0)	24.6 (3.8)	25.0 (3.8)	23.6 (3.6)
Mean (SD) height (cm)	163.3 (5.8)	164.5 (5.7)	163.3 (5.6)	165.4 (5.7)
Mean (SD) nutrient intake:				
Energy (kcal/d)	1434 (446)	1555 (412)	1774 (448)	1881 (460)
Calcium (mg/d)	812 (192)	863 (166)	966 (163)	992 (163)
Phosphorus (mg/d)	1344 (227)	1371 (193)	1446 (183)	1440 (183)
Vitamin D (mg/d)	4.6 (1.6)	4.4 (1.3)	4.2 (1.2)	4.1 (1.2)
Retinol (mg/d)	1.04 (0.72)	1.05 (0.65)	0.97 (0.53)	0.96 (0.55)
Protein (g/d)	64.4 (9.9)	66.7 (8.4)	69.0 (7.8)	71.0 (7.8)
Total fat (g/d)	43.6 (17.6)	49.0 (16.2)	59.2 (18.0)	65.2 (19.0)
Saturated fat (g/d)	18.4 (8.5)	21.4 (7.7)	27.4 (8.8)	30.4 (9.1)
Alcohol (g/d)	2.0 (3.3)	2.9 (3.6)	1.9 (2.9)	3.4 (3.8)
Mean (SD) metabolic equivalents (kcal/kg and hour)	42.2 (4.9)	42.6 (4.8)	42.5 (4.8)	42.6 (4.8)
Calcium supplement use*	6172 (27.2)	7718 (34.1)	2008 (28.9)	3223 (35.1)
Vitamin D supplement use*	2686 (11.8)	3278 (14.5)	1018 (14.6)	1618 (17.6)
Ever oestrogen replacement use*	4027 (17.8)	5486 (24.3)	1236 (17.8)	2801 (30.5)
Education level:				
≤9 years	18990 (83.7)	17687 (78.2)	5737 (82.5)	6548 (71.2)
10-12 years	1483 (6.5)	1753 (7.8)	400 (5.8)	899 (9.8)
>12 years	702 (3.1)	1158 (5.1)	222 (3.2)	861 (9.4)
other	1503 (6.6)	2008 (8.9)	597 (8.6)	885 (9.6)
Charlson comorbidity:				
0	19721 (87.0)	20733 (91.7)	6131 (88.1)	8560 (93.1)

1	2284 (10.1)	1538 (6.8)	618 (8.9)	531 (5.8)
≥2	673 (3.0)	335 (1.5)	207 (3.0)	102 (1.1)
Nulliparous	2821 (12.4)	2172 (9.6)	824 (11.8)	881 (9.6)
Ever cortisone use*	1119 (4.9)	1098 (4.9)	391 (5.6)	413 (4.5)
Smoker status:*				
Current	4242 (18.7)	4734 (20.9)	930 (13.4)	2184 (23.8)
Former	6725 (29.7)	6848 (30.3)	1761 (25.3)	3011 (32.8)
Never	11711 (51.6)	11024 (48.8)	4265 (61.3)	3998 (43.5)
Living alone	6549 (28.9)	4329 (19.1)	1823 (26.2)	1767 (19.2)

### The Cohort of Swedish Men

No	7208	6354	11402	20375
Mean (SD) age at entry (years)	60.1 (9.6)	60.5 (9.7)	61.2 (9.8)	59.7 (9.7)
Mean (SD) body mass index (kg/m <sup>2</sup> )	26.0 (3.4)	25.8 (3.3)	25.8 (3.3)	25.7 (3.3)
Mean (SD) height (cm)	176.4 (6.8)	176.9 (6.7)	177.1 (6.6)	177.7 (6.6)
Mean (SD) nutrient intake:				
Energy (kcal/d)	2157 (734)	2301 (701)	2498 (687)	3040 (810)
Calcium (mg/d)	1178 (507)	1301 (416)	1412 (399)	1651 (432)
Phosphorus (mg/d)	1944 (390)	1986 (324)	2040 (314)	2157 (325)
Vitamin D (mg/d)	7.2 (4.1)	6.8 (3.2)	6.7 (2.8)	6.3 (2.5)
Retinol (mg/d)	1.25 (1.13)	1.28 (0.88)	1.26 (0.88)	1.22 (0.78)
Protein (g/d)	96.4 (17.6)	98.7 (14.9)	100.7 (14.0)	106.5 (14.0)
Total fat (g/d)	81.1 (16.9)	85.3 (14.0)	88.1 (13.5)	94.3 (14.1)
Saturated fat (g/d)	33.9 (9.4)	37.2 (8.0)	39.7 (7.8)	45.0 (8.8)
Alcohol (g/d)	13.5 (28.6)	14.1 (19.8)	13.4 (18.0)	13.5 (20.0)
Metabolic equivalents (kcal/kg and hour)	41.3 (5.0)	41.2 (4.8)	41.2 (4.7)	41.9 (5.0)
Calcium supplement use	704 (9.8)	645 (10.2)	1102 (9.7)	1989 (9.8)
Vitamin D supplement use	939 (13.0)	895 (14.1)	1494 (13.1)	2725 (13.4)
Educational level:				
≤9 years	5089 (71.0)	4315 (68.2)	7761 (68.3)	14197 (69.8)
10-12 years	977 (13.6)	931 (14.7)	1629 (14.3)	2736 (13.5)
>12 years	1054 (14.7)	1051 (16.6)	1929 (17.0)	3334 (16.4)
other	43 (0.6)	28 (0.4)	43 (0.4)	66 (0.3)

Charlson comorbidity:					
0	5832 (80.9)	5261 (82.8)	9410 (82.5)	17379 (85.3)	
1	929 (12.9)	751 (11.8)	1407 (12.3)	2115 (10.4)	
≥2	447 (6.2)	342 (5.4)	585 (5.1)	881 (4.3)	
Ever cortisone use	300 (4.2)	267 (4.2)	447 (3.9)	899 (4.4)	
Smoker status:					
Current	1946 (27.5)	1556 (24.9)	2587 (23.0)	5020 (25.0)	
Former	2777 (39.2)	2480 (39.6)	4473 (39.7)	7685 (38.2)	
Never	2364 (33.4)	2221 (35.5)	4197 (37.3)	7405 (36.8)	
Living alone	1670 (23.2)	1131 (17.8)	1887 (16.5)	3413 (16.8)	

\*Information available only in the 1997 questionnaire and values are imputed from these data

**Table B.** Baseline characteristics of the women in the Swedish Mammography Cohort (1987-90) and of the men in the Cohort of Swedish Men (1997) by categories of soured milk and yogurt intake. Values are numbers (percentages) unless stated otherwise

	Categories of daily soured milk and yogurt intake			
	<1 g/d	1-199 g/d	200-399 g/d	≥400 g/d
<b>The Swedish Mammography Cohort</b>				
No	13543	33777	12921	1192
Mean (SD) age at entry (years)	55.1 (9.9)	53.3 (9.3)	53.4 (10.4)	53.7 (9.7)
Mean (SD) body mass index (kg/m <sup>2</sup> )	25.0 (4.0)	24.8 (3.9)	24.5 (3.8)	24.7 (3.8)
Mean (SD) height (cm)	163.6 (5.9)	164.1 (5.7)	164.4 (5.8)	163.5 (6.0)
Mean (SD) nutrient intake:				
Energy (kcal/d)	1467 (473)	1586 (448)	1666 (452)	1961 (563)
Calcium (mg/d)	803 (194)	864 (172)	956 (167)	1128 (201)
Phosphorus (mg/d)	1303 (221)	1369 (191)	1467 (185)	1606 (216)
Vitamin D (mg/d)	4.3 (1.5)	4.4 (1.3)	4.5 (1.4)	4.6 (1.7)
Retinol (mg/d)	1.02 (0.72)	1.04 (0.63)	1.00 (0.62)	0.98 (0.64)
Protein (g/d)	64.4 (9.9)	66.5 (8.6)	69.3 (8.8)	73.6 (10.3)
Total fat (g/d)	47.4 (19.2)	51.2 (18.6)	51.4 (18.6)	61.3 (24.9)
Saturated fat (g/d)	20.5 (9.4)	22.5 (9.2)	23.0 (9.1)	28.9 (12.7)
Alcohol (g/d)	2.3 (3.7)	2.6 (3.5)	2.7 (3.5)	2.3 (3.7)
Mean (SD) metabolic equivalents (kcal/kg and hour)	42.3 (4.9)	42.5 (4.8)	42.4 (4.8)	42.7 (4.9)
Calcium supplement use*	3477 (25.7)	10977 (32.5)	4319 (33.4)	348 (29.2)
Vitamin D supplement use*	1348 (10.0)	4818 (14.3)	2217 (17.2)	217 (18.2)
Ever oestrogen replacement use*	2515 (18.6)	7460 (22.1)	3237 (25.1)	338 (28.4)
Education level:				
≤9 years	11273 (83.2)	26698 (79.0)	10036 (77.7)	955 (80.1)
10-12 years	856 (6.3)	2498 (7.4)	1095 (8.5)	86 (7.2)
>12 years	476 (3.5)	1625 (4.8)	788 (6.1)	54 (4.5)
other	938 (6.9)	2956 (8.8)	1002 (7.8)	97 (8.1)
Charlson comorbidity:				

0	11916 (88.0)	30583 (90.5)	11597 (89.8)	1049 (88.0)
1	1252 (9.2)	2574 (7.6)	1042 (8.1)	103 (8.6)
≥2	375 (2.8)	620 (1.8)	282 (2.2)	40 (3.4)
Nulliparous	1728 (12.8)	3303 (9.8)	1518 (11.7)	149 (12.5)
Ever cortisone use*	612 (4.5)	1651 (4.9)	703 (5.4)	55 (4.6)
Smoker status:*				
Current	2902 (21.4)	6709 (19.9)	2254 (17.4)	225 (18.9)
Former	4112 (30.4)	9892 (29.3)	3972 (30.7)	369 (31.0)
Never	6529 (48.2)	17176 (50.9)	6695 (51.8)	598 (50.2)
Living alone	3348 (24.7)	7586 (22.5)	3191 (24.7)	343 (28.8)

### The Cohort of Swedish Men

No	17113	10976	10309	6941
Mean (SD) age at entry (years)	60.5 (9.8)	59.3 (9.5)	60.6 (9.7)	60.9 (9.8)
Mean (SD) body mass index (kg/m <sup>2</sup> )	25.9 (3.5)	25.9 (3.3)	25.6 (3.2)	25.6 (3.2)
Mean (SD) height (cm)	176.8 (6.8)	177.3 (6.6)	177.5 (6.6)	177.8 (6.8)
Mean (SD) nutrient intake:				
Energy (kcal/d)	2516 (830)	2600 (787)	2705 (783)	3042 (875)
Calcium (mg/d)	1373 (501)	1386 (403)	1509 (403)	1761 (464)
Phosphorus (mg/d)	1990 (363)	2016 (296)	2111 (291)	2292 (337)
Vitamin D (mg/d)	6.7 (3.5)	6.6 (2.6)	6.6 (2.8)	6.6 (2.6)
Retinol (mg/d)	1.25 (1.05)	1.27 (0.79)	1.23 (0.74)	1.20 (0.76)
Protein (g/d)	100.4 (16.6)	101.3 (13.8)	103.2 (13.8)	107.5 (14.8)
Total fat (g/d)	90.4 (16.7)	89.8 (14.1)	88.7 (14.0)	87.2 (14.5)
Saturated fat (g/d)	41.0 (10.5)	40.5 (8.8)	40.6 (8.8)	41.1 (9.2)
Alcohol (g/d)	14.1 (22.0)	13.9 (22.0)	12.8 (18.1)	13.0 (21.7)
Metabolic equivalents (kcal/kg and hour)	41.6 (5.1)	41.5 (4.8)	41.3 (4.7)	41.9 (5.0)
Calcium supplement use	1321 (7.7)	1103 (10.0)	1215 (11.8)	801 (11.5)
Vitamin D supplement use	1817 (10.6)	1486 (13.5)	1647 (16.0)	1103 (15.9)
Educational level:				
≤9 years	12745 (74.8)	7435 (67.9)	6621 (64.5)	4561 (65.9)
10-12 years	2103 (12.3)	1652 (15.1)	1530 (14.9)	988 (14.3)
>12 years	2123 (12.5)	1820 (16.6)	2077 (20.2)	1348 (19.5)



other	72 (0.4)	42 (0.4)	44 (0.4)	22 (0.3)
Charlson comorbidity:				
0	14054 (82.1)	9398 (85.6)	8650 (83.9)	5780 (83.3)
1	2129 (12.4)	1145 (10.4)	1112 (10.8)	816 (11.8)
≥2	930 (5.4)	433 (3.9)	547 (5.3)	345 (5.0)
Ever cortisone use	716 (4.2)	458 (4.2)	436 (4.2)	303 (4.4)
Smoker status:				
Current	5033 (29.9)	2531 (23.3)	2109 (20.7)	1436 (21.0)
Former	6539 (38.9)	4237 (39.0)	4003 (39.3)	2636 (38.6)
Never	5254 (31.2)	4097 (37.7)	4071 (40.0)	2765 (40.4)
Living alone	3537 (20.7)	1681 (15.3)	1650 (16.0)	1233 (17.8)

\*Information available only in the 1997 questionnaire and values are imputed from these data

**Table C.** Cheese consumption and time to death and fracture in the Swedish Mammography Cohort\* and the Cohort of Swedish Men

	Categories of daily cheese intake			Continuous (per 20 g)
	<20 g/d	20-39 g/d	40-59 g/d	
<b>The Swedish Mammography Cohort</b>				
	<b>Total mortality</b>			
Number of deaths	6602	4689	2922	15541
Person-years of follow-up	369590	455595	196218	1231818
Rate/1000 person-years†	15.3	11.0	11.0	12.6
HR (95% CI), model 1	1.00 (reference)	0.60 (0.58 to 0.62)	0.63 (0.60 to 0.66)	0.78 (0.77 to 0.79)
HR (95% CI), model 2	1.00 (reference)	0.70 (0.68 to 0.73)	0.75 (0.72 to 0.79)	0.86 (0.85 to 0.88)
HR (95% CI), model 3	1.00 (reference)	0.72 (0.69 to 0.75)	0.77 (0.74 to 0.81)	0.87 (0.85 to 0.89)
	<b>Cardiovascular mortality</b>			
Number of deaths	2311	1574	1034	5278
Person-years of follow-up	369590	455595	196218	1231818
Rate/1000 person-years†	5.2	3.7	3.9	4.3
HR (95% CI), model 1	1.00 (reference)	0.59 (0.55 to 0.62)	0.63 (0.59 to 0.68)	0.77 (0.74 to 0.79)
HR (95% CI), model 2	1.00 (reference)	0.69 (0.64 to 0.73)	0.74 (0.68 to 0.80)	0.83 (0.81 to 0.86)
HR (95% CI), model 3	1.00 (reference)	0.70 (0.65 to 0.75)	0.76 (0.70 to 0.82)	0.83 (0.80 to 0.87)
	<b>Cancer mortality</b>			
Number of deaths	1033	1165	613	3283
Person-years of follow-up	369590	455595	196218	1231818
Rate/1000 person-years†	2.5	2.8	2.4	2.7
HR (95% CI), model 1	1.00 (reference)	0.82 (0.76 to 0.90)	0.76 (0.68 to 0.84)	0.94 (0.91 to 0.97)
HR (95% CI), model 2	1.00 (reference)	0.89 (0.82 to 0.97)	0.84 (0.76 to 0.93)	0.98 (0.95 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.89 (0.81 to 0.97)	0.84 (0.75 to 0.94)	0.98 (0.94 to 1.02)
	<b>Any fracture</b>			
Number of fractures	5672	5905	3354	17252
Person-years of follow-up	334019	413732	172118	1112837

Rate/1000 person-years†	15.6	15.2	17.9	16.3	15.5
HR (95% CI), model 1	1.00 (reference)	0.83 (0.80 to 0.86)	0.87 (0.83 to 0.91)	0.79 (0.76 to 0.83)	0.93 (0.92 to 0.95)
HR (95% CI), model 2	1.00 (reference)	0.86 (0.83 to 0.89)	0.92 (0.88 to 0.96)	0.85 (0.81 to 0.90)	0.96 (0.94 to 0.97)
HR (95% CI), model 3	1.00 (reference)	0.87 (0.84 to 0.91)	0.94 (0.90 to 0.99)	0.89 (0.83 to 0.94)	0.97 (0.95 to 0.98)
<b>Hip fracture</b>					
Number of fractures	1722	1290	930	317	4259
Person-years of follow-up	361851	449090	191694	208659	1211295
Rate/1000 person-years†	4.0	3.1	3.6	2.8	3.5
HR (95% CI), model 1	1.00 (reference)	0.63 (0.59 to 0.68)	0.75 (0.70 to 0.82)	0.50 (0.44 to 0.56)	0.82 (0.79 to 0.85)
HR (95% CI), model 2	1.00 (reference)	0.69 (0.64 to 0.74)	0.81 (0.75 to 0.88)	0.57 (0.50 to 0.64)	0.86 (0.83 to 0.89)
HR (95% CI), model 3	1.00 (reference)	0.72 (0.67 to 0.78)	0.88 (0.80 to 0.97)	0.64 (0.55 to 0.74)	0.89 (0.85 to 0.92)

### The Cohort of Swedish Men

<b>Total mortality</b>					
Number of deaths	1754	1484	2695	4179	10112
Person-years of follow-up	84070	74264	133546	242214	534094
Rate/1000 person-years†	21.8	19.7	18.2	18.2	18.9
HR (95% CI), model 1	1.00 (reference)	0.90 (0.84 to 0.96)	0.83 (0.78 to 0.88)	0.82 (0.78 to 0.87)	0.99 (0.98 to 1.00)
HR (95% CI), model 2	1.00 (reference)	0.97 (0.91 to 1.04)	0.92 (0.87 to 0.98)	0.93 (0.87 to 0.98)	0.99 (0.98 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.95 (0.89 to 1.02)	0.89 (0.84 to 0.95)	0.86 (0.80 to 0.92)	0.97 (0.96 to 0.99)

### Cardiovascular mortality

Number of deaths	811	694	1238	1825	4568
Person-years of follow-up	84070	74264	133546	242214	534094
Rate/1000 person-years†	10.2	9.2	8.2	8.0	8.6
HR (95% CI), model 1	1.00 (reference)	0.90 (0.81 to 1.00)	0.80 (0.73 to 0.88)	0.78 (0.71 to 0.84)	0.98 (0.97 to 1.00)
HR (95% CI), model 2	1.00 (reference)	0.99 (0.89 to 1.09)	0.93 (0.85 to 1.01)	0.91 (0.84 to 1.00)	0.99 (0.97 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.97 (0.88 to 1.08)	0.91 (0.82 to 0.99)	0.87 (0.79 to 0.97)	0.97 (0.95 to 0.99)



**Table D.** Soured milk and yogurt consumption and time to death and fracture in the Swedish Mammography Cohort\* and the Cohort of Swedish Men

	Categories of daily soured milk and yogurt intake			
	<1 g/d	1-199 g/d	200-399 g/d	≥400 g/d
<b>The Swedish Mammography Cohort</b>				
	<b>Total mortality</b>			
Number of deaths	3512	7846	3692	491
Person-years of follow-up	220064	699122	279085	33547
Rate/1000 person-years†	16.1	11.8	11.7	11.7
HR (95% CI), model 1	1.00 (reference)	0.65 (0.62 to 0.68)	0.65 (0.62 to 0.69)	0.62 (0.56 to 0.68)
HR (95% CI), model 2	1.00 (reference)	0.76 (0.73 to 0.80)	0.84 (0.80 to 0.89)	0.86 (0.78 to 0.95)
HR (95% CI), model 3	1.00 (reference)	0.76 (0.73 to 0.80)	0.84 (0.80 to 0.88)	0.86 (0.78 to 0.95)
				0.78 (0.75 to 0.80)
				0.92 (0.90 to 0.95)
				0.91 (0.89 to 0.94)
				1231818
				12.6
				15541
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
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				0.81 (0.78 to 0.85)
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				0.81 (0.78 to 0.85)
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				1231818
				4.3
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				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)
				0.95 (0.90 to 1.00)
				919186
				3738
				5278
				1231818
				4.3
				4.1
				0.81 (0.78 to 0.85)
				0.95 (0.91 to 1.00)



		<b>Cancer mortality</b>		
Number of deaths	1181	619	656	2881
Person-years of follow-up	198527	131942	121784	534094
Rate/1000 person-years†	5.9	5.1	5.2	5.4
HR (95% CI), model 1	1.00 (reference)	0.85 (0.77 to 0.94)	0.88 (0.80 to 0.97)	0.83 (0.74 to 0.92)
HR (95% CI), model 2	1.00 (reference)	0.90 (0.81 to 0.99)	0.93 (0.84 to 1.02)	0.87 (0.78 to 0.98)
HR (95% CI), model 3	1.00 (reference)	0.90 (0.82 to 1.00)	0.94 (0.85 to 1.03)	0.89 (0.79 to 1.01)
<b>Any fracture</b>				
Number of fractures	2103	1235	1199	5379
Person-years of follow-up	189017	126054	116338	509361
Rate/1000 person-years†	11.1	10.1	10.2	10.6
HR (95% CI), model 1	1.00 (reference)	0.90 (0.84 to 0.97)	0.91 (0.85 to 0.98)	0.94 (0.87 to 1.02)
HR (95% CI), model 2	1.00 (reference)	0.93 (0.87 to 1.00)	0.92 (0.86 to 0.99)	0.95 (0.87 to 1.03)
HR (95% CI), model 3	1.00 (reference)	0.93 (0.87 to 1.00)	0.92 (0.86 to 0.99)	0.95 (0.87 to 1.03)
<b>Hip fracture</b>				
Number of hip fractures	565	246	268	1266
Person-years of follow-up	196838	131053	120947	530047
Rate/1000 person-years†	2.8	2.1	2.1	2.4
HR (95% CI), model 1	1.00 (reference)	0.73 (0.63 to 0.85)	0.74 (0.64 to 0.86)	0.75 (0.63 to 0.88)
HR (95% CI), model 2	1.00 (reference)	0.77 (0.66 to 0.90)	0.76 (0.65 to 0.88)	0.77 (0.65 to 0.92)
HR (95% CI), model 3	1.00 (reference)	0.78 (0.67 to 0.90)	0.75 (0.65 to 0.87)	0.75 (0.63 to 0.90)

CI: confidence interval; HR: hazard ratio

\*had access to repeat exposure information, exposures and covariates were treated as cumulative averages

† Age standardized rates, number of cases per 1000 person-years at risk

Model 1: age-adjusted

Model 2: adjusted for age, body mass index, height, total energy intake, total alcohol intake, a healthy dietary pattern, calcium and vitamin D supplementation, ever use of cortisone, educational level, living alone, physical activity level estimated as metabolic equivalents, smoking status and Charlson's comorbidity index; and in women additionally for ever use of oestrogen replacement therapy and nulliparity.

Model 3: adjusted according to model 2 but additionally adjusted for intake of calcium, vitamin D, phosphorus, total fat, saturated fat, total protein and retinol.

**Table E.** Mechanistic model of milk consumption in relation to mortality and fracture in the Swedish Mammography Cohort\* and in the Cohort of Swedish Men.

	Categories of daily milk intake			
	<1 glass (<200 g/d)	1 to 2 glasses (200 to 399 g/d)	2 to 3 glasses (400 to 599 g/d)	≥3 glasses (≥600 g/d)
<b>The Swedish Mammography Cohort</b>				
<b>Total mortality</b>				
Adjusted HR (95% CI) †	1.00 (reference)	1.33 (1.27 to 1.38)	1.90 (1.80 to 2.01)	2.61 (2.41 to 2.84)
<b>Any fracture</b>				
Adjusted HR (95% CI) †	1.00 (reference)	1.13 (1.09 to 1.17)	1.28 (1.21 to 1.35)	1.37 (1.26 to 1.49)
<b>Hip fracture</b>				
Adjusted HR (95% CI) †	1.00 (reference)	1.38 (1.28 to 1.49)	2.03 (1.83 to 2.25)	2.54 (2.15 to 3.00)
<b>The Cohort of Swedish Men</b>				
<b>Total mortality</b>				
Adjusted HR (95% CI) †	1.00 (reference)	1.01 (0.96 to 1.07)	1.09 (1.02 to 1.15)	1.16 (1.07 to 1.25)
<b>Any fracture</b>				
Adjusted HR (95% CI) †	1.00 (reference)	1.03 (0.96 to 1.11)	1.02 (0.94 to 1.11)	1.05 (0.94 to 1.16)
<b>Hip fracture</b>				
Adjusted HR (95% CI) †	1.00 (reference)	0.98 (0.84 to 1.14)	1.19 (1.01 to 1.40)	1.10 (0.89 to 1.37)
<b>Continuous (per 200 g/d)</b>				
				1.26 (1.23 to 1.29)

HR: Hazard ratio, CI: confidence interval

\*had access to repeat exposure information, exposures and covariates were treated as cumulative averages

†The hazard ratios were adjusted for age, body mass index, height, total energy intake, total alcohol intake, a healthy dietary pattern, calcium and vitamin D supplementation, ever use of cortisone, educational level, living alone, physical activity level estimated as metabolic equivalents, smoking status and Charlson's comorbidity index and in addition intake of calcium, vitamin D, phosphorus, total fat, saturated fat, total protein and retinol; and in women additionally for ever use of oestrogen replacement therapy and nulliparity.



**Table F.** Daily consumption of milk, cheese and fermented milk or yogurt in relation to mortality and fracture in the Swedish Mammography Cohort\*, mutually adjusted for intakes of the other dairy categories

	Total mortality				
	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
Milk intake					
HR (95% CI), model 1	1.00 (reference)	1.29 (1.24 to 1.33)	1.75 (1.67 to 1.83)	2.05 (1.92 to 2.19)	1.18 (1.16 to 1.20)
HR (95% CI), model 2	1.00 (reference)	1.19 (1.15 to 1.24)	1.53 (1.46 to 1.61)	1.78 (1.66 to 1.91)	1.13 (1.11 to 1.15)
HR (95% CI), model 3	1.00 (reference)	1.33 (1.28 to 1.39)	1.91 (1.80 to 2.03)	2.62 (2.38 to 2.89)	1.19 (1.15 to 1.24)
Cheese intake					
	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.64 (0.61 to 0.66)	0.65 (0.62 to 0.68)	0.54 (0.50 to 0.57)	0.79 (0.78 to 0.81)
HR (95% CI), model 2	1.00 (reference)	0.74 (0.71 to 0.77)	0.78 (0.75 to 0.82)	0.72 (0.67 to 0.76)	0.87 (0.86 to 0.89)
HR (95% CI), model 3	1.00 (reference)	0.82 (0.79 to 0.86)	0.96 (0.91 to 1.01)	0.98 (0.91 to 1.06)	0.93 (0.90 to 0.95)
Fermented milk/yogurt intake					
	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.70 (0.67 to 0.73)	0.73 (0.69 to 0.76)	0.67 (0.61 to 0.74)	0.82 (0.80 to 0.84)
HR (95% CI), model 2	1.00 (reference)	0.79 (0.76 to 0.83)	0.88 (0.84 to 0.93)	0.90 (0.81 to 0.99)	0.94 (0.91 to 0.96)
HR (95% CI), model 3	1.00 (reference)	0.85 (0.82 to 0.89)	1.03 (0.98 to 1.09)	1.20 (1.08 to 1.33)	0.98 (0.95 to 1.02)
<b>Cardiovascular mortality</b>					
Milk intake					
	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.25 (1.17 to 1.33)	1.76 (1.63 to 1.90)	2.04 (1.82 to 2.29)	1.20 (1.16 to 1.23)
HR (95% CI), model 2	1.00 (reference)	1.14 (1.07 to 1.22)	1.51 (1.40 to 1.64)	1.73 (1.54 to 1.96)	1.13 (1.10 to 1.17)
HR (95% CI), model 3	1.00 (reference)	1.25 (1.16 to 1.34)	1.80 (1.62 to 1.99)	2.35 (2.00 to 2.77)	1.18 (1.11 to 1.26)
Cheese intake					
	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.62 (0.58 to 0.66)	0.65 (0.61 to 0.70)	0.50 (0.45 to 0.56)	0.78 (0.75 to 0.80)
HR (95% CI), model 2	1.00 (reference)	0.72 (0.67 to 0.77)	0.77 (0.71 to 0.83)	0.64 (0.57 to 0.73)	0.84 (0.82 to 0.87)
HR (95% CI), model 3	1.00 (reference)	0.79 (0.73 to 0.85)	0.91 (0.83 to 0.99)	0.84 (0.73 to 0.97)	0.89 (0.85 to 0.93)
Fermented milk/yogurt intake					
	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.70 (0.65 to 0.75)	0.73 (0.67 to 0.79)	0.74 (0.64 to 0.86)	0.86 (0.82 to 0.90)
HR (95% CI), model 2	1.00 (reference)	0.78 (0.73 to 0.84)	0.87 (0.80 to 0.95)	0.95 (0.82 to 1.11)	0.96 (0.92 to 1.01)

HR (95% CI), model 3 1.00 (reference) 0.83 (0.77 to 0.89) 0.98 (0.90 to 1.08) 1.20 (1.01 to 1.42) 1.00 (0.94 to 1.06)

### Cancer mortality

Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.10 (1.02 to 1.19)	1.22 (1.10 to 1.35)	1.49 (1.28 to 1.74)	1.08 (1.04 to 1.13)
HR (95% CI), model 2	1.00 (reference)	1.06 (0.98 to 1.15)	1.15 (1.03 to 1.28)	1.40 (1.19 to 1.65)	1.06 (1.02 to 1.11)
HR (95% CI), model 3	1.00 (reference)	1.08 (0.99 to 1.18)	1.18 (1.03 to 1.35)	1.48 (1.19 to 1.83)	1.08 (0.99 to 1.17)

Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.85 (0.78 to 0.93)	0.78 (0.70 to 0.86)	0.88 (0.79 to 0.99)	0.95 (0.92 to 0.98)
HR (95% CI), model 2	1.00 (reference)	0.91 (0.83 to 0.99)	0.86 (0.77 to 0.95)	0.99 (0.88 to 1.12)	0.98 (0.95 to 1.02)
HR (95% CI), model 3	1.00 (reference)	0.92 (0.84 to 1.01)	0.88 (0.78 to 1.00)	1.04 (0.89 to 1.21)	1.00 (0.94 to 1.05)

Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.86 (0.78 to 0.95)	0.79 (0.71 to 0.88)	0.77 (0.62 to 0.94)	0.89 (0.84 to 0.95)
HR (95% CI), model 2	1.00 (reference)	0.92 (0.84 to 1.01)	0.88 (0.78 to 0.98)	0.86 (0.69 to 1.06)	0.95 (0.90 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.93 (0.84 to 1.03)	0.90 (0.79 to 1.02)	0.89 (0.71 to 1.13)	0.96 (0.89 to 1.04)

### Any fracture

Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.07 (1.04 to 1.11)	1.15 (1.10 to 1.20)	1.13 (1.06 to 1.21)	1.01 (1.00 to 1.03)
HR (95% CI), model 2	1.00 (reference)	1.07 (1.03 to 1.11)	1.14 (1.09 to 1.20)	1.13 (1.05 to 1.21)	1.01 (0.99 to 1.03)
HR (95% CI), model 3	1.00 (reference)	1.15 (1.10 to 1.19)	1.31 (1.23 to 1.39)	1.42 (1.29 to 1.57)	1.06 (1.02 to 1.10)

Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.84 (0.81 to 0.87)	0.88 (0.85 to 0.92)	0.81 (0.77 to 0.85)	0.94 (0.93 to 0.95)
HR (95% CI), model 2	1.00 (reference)	0.87 (0.84 to 0.90)	0.93 (0.89 to 0.97)	0.87 (0.82 to 0.91)	0.96 (0.94 to 0.97)
HR (95% CI), model 3	1.00 (reference)	0.91 (0.88 to 0.95)	1.03 (0.98 to 1.09)	1.01 (0.94 to 1.09)	0.99 (0.96 to 1.01)

Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.85 (0.82 to 0.89)	0.88 (0.84 to 0.92)	0.82 (0.74 to 0.90)	0.94 (0.91 to 0.96)
HR (95% CI), model 2	1.00 (reference)	0.89 (0.85 to 0.93)	0.93 (0.89 to 0.98)	0.90 (0.82 to 1.00)	0.97 (0.95 to 1.00)

HR (95% CI), model 3      1.00 (reference)      0.93 (0.89 to 0.97)      1.02 (0.97 to 1.08)      1.08 (0.97 to 1.20)      1.01 (0.97 to 1.05)

### Hip fracture

Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.23 (1.15 to 1.32)	1.62 (1.49 to 1.77)	1.66 (1.45 to 1.90)	1.11 (1.07 to 1.15)
HR (95% CI), model 2	1.00 (reference)	1.17 (1.09 to 1.26)	1.47 (1.34 to 1.60)	1.45 (1.26 to 1.68)	1.06 (1.03 to 1.10)
HR (95% CI), model 3	1.00 (reference)	1.38 (1.28 to 1.50)	2.02 (1.80 to 2.28)	2.53 (2.09 to 3.06)	1.22 (1.14 to 1.31)

Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.66 (0.62 to 0.72)	0.78 (0.72 to 0.85)	0.53 (0.47 to 0.60)	0.83 (0.81 to 0.86)
HR (95% CI), model 2	1.00 (reference)	0.71 (0.66 to 0.77)	0.84 (0.77 to 0.91)	0.59 (0.52 to 0.68)	0.86 (0.83 to 0.89)
HR (95% CI), model 3	1.00 (reference)	0.82 (0.76 to 0.89)	1.08 (0.98 to 1.20)	0.89 (0.76 to 1.04)	0.96 (0.91 to 1.01)

Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.67 (0.62 to 0.73)	0.72 (0.66 to 0.78)	0.53 (0.43 to 0.64)	0.81 (0.77 to 0.86)
HR (95% CI), model 2	1.00 (reference)	0.74 (0.68 to 0.80)	0.83 (0.76 to 0.91)	0.66 (0.54 to 0.81)	0.90 (0.85 to 0.95)
HR (95% CI), model 3	1.00 (reference)	0.82 (0.75 to 0.89)	1.04 (0.93 to 1.15)	0.97 (0.78 to 1.21)	1.01 (0.94 to 1.08)

HR: Hazard ratio, CI: confidence interval

\*had access to repeat exposure information, exposures and covariates were treated as cumulative averages

Model 1 adjusted for age, milk, cheese, fermented milk/yogurt

Model 2 adjusted for age, milk, cheese, fermented milk/yogurt, body mass index, height, total energy intake, total alcohol intake, a healthy dietary pattern, calcium and vitamin D supplementation, ever use of cortisone, educational level, living alone, physical activity level estimated as metabolic equivalents, smoking status, Charlson's comorbidity index, ever use of oestrogen replacement therapy, and nulliparity.

Model 3, adjusted according to model 2 but in addition included intake of calcium, vitamin D, phosphorus, total fat, saturated fat, total protein, and retinol

**Table G.** Daily consumption of milk, cheese and fermented milk or yogurt in relation to mortality and fracture in the Cohort of Swedish Men; mutually adjusted for intakes of the other dairy categories

Milk intake	Total mortality					
	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.01 (0.96 to 1.06)	1.08 (1.03 to 1.14)	1.14 (1.08 to 1.21)	1.04 (1.02 to 1.05)	1.04 (1.02 to 1.05)
HR (95% CI), model 2	1.00 (reference)	1.00 (0.95 to 1.05)	1.05 (1.00 to 1.11)	1.09 (1.03 to 1.16)	1.03 (1.01 to 1.04)	1.03 (1.01 to 1.04)
HR (95% CI), model 3	1.00 (reference)	1.00 (0.95 to 1.05)	1.06 (0.99 to 1.12)	1.09 (1.00 to 1.18)	1.01 (0.98 to 1.03)	1.01 (0.98 to 1.03)
Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.91 (0.85 to 0.97)	0.83 (0.78 to 0.88)	0.82 (0.78 to 0.87)	0.99 (0.98 to 1.00)	0.99 (0.98 to 1.00)
HR (95% CI), model 2	1.00 (reference)	0.98 (0.91 to 1.05)	0.93 (0.87 to 0.99)	0.93 (0.87 to 0.99)	0.99 (0.98 to 1.01)	0.99 (0.98 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.96 (0.89 to 1.03)	0.90 (0.84 to 0.96)	0.87 (0.81 to 0.94)	0.97 (0.95 to 0.99)	0.97 (0.95 to 0.99)
Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.92 (0.88 to 0.97)	0.89 (0.83 to 0.95)	0.95 (0.86 to 1.06)	0.96 (0.93 to 0.98)	0.96 (0.93 to 0.98)
HR (95% CI), model 2	1.00 (reference)	0.95 (0.91 to 1.00)	0.94 (0.88 to 1.00)	0.95 (0.85 to 1.05)	0.97 (0.95 to 0.99)	0.97 (0.95 to 0.99)
HR (95% CI), model 3	1.00 (reference)	0.96 (0.91 to 1.01)	0.94 (0.88 to 1.01)	0.94 (0.84 to 1.06)	0.96 (0.93 to 0.99)	0.96 (0.93 to 0.99)
Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.07 (0.99 to 1.16)	1.16 (1.07 to 1.25)	1.24 (1.14 to 1.35)	1.06 (1.04 to 1.08)	1.06 (1.04 to 1.08)
HR (95% CI), model 2	1.00 (reference)	1.04 (0.96 to 1.12)	1.10 (1.01 to 1.19)	1.15 (1.06 to 1.26)	1.05 (1.03 to 1.07)	1.05 (1.03 to 1.07)
HR (95% CI), model 3	1.00 (reference)	1.03 (0.95 to 1.12)	1.09 (0.99 to 1.19)	1.12 (0.99 to 1.27)	1.03 (0.99 to 1.07)	1.03 (0.99 to 1.07)
Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.91 (0.82 to 1.01)	0.80 (0.74 to 0.88)	0.77 (0.71 to 0.84)	0.98 (0.96 to 0.99)	0.98 (0.96 to 0.99)
HR (95% CI), model 2	1.00 (reference)	0.99 (0.90 to 1.10)	0.93 (0.85 to 1.02)	0.92 (0.84 to 1.00)	0.99 (0.97 to 1.01)	0.99 (0.97 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.98 (0.89 to 1.09)	0.92 (0.83 to 1.01)	0.89 (0.80 to 0.99)	0.97 (0.95 to 1.00)	0.97 (0.95 to 1.00)
Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.90 (0.84 to 0.97)	0.90 (0.82 to 0.99)	0.97 (0.83 to 1.12)	0.96 (0.93 to 0.99)	0.96 (0.93 to 0.99)
HR (95% CI), model 2	1.00 (reference)	0.93 (0.86 to 1.00)	0.96 (0.87 to 1.05)	0.96 (0.82 to 1.12)	0.98 (0.95 to 1.01)	0.98 (0.95 to 1.01)

**Cardiovascular mortality**

HR (95% CI), model 3      1.00 (reference)      0.93 (0.86 to 1.00)      0.95 (0.86 to 1.05)      0.94 (0.79 to 1.12)      0.96 (0.92 to 1.01)

**Cancer mortality**

Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.95 (0.86 to 1.05)	0.97 (0.88 to 1.07)	1.03 (0.92 to 1.14)	1.00 (0.98 to 1.03)
HR (95% CI), model 2	1.00 (reference)	0.97 (0.88 to 1.07)	0.97 (0.87 to 1.07)	1.01 (0.90 to 1.13)	0.99 (0.97 to 1.02)
HR (95% CI), model 3	1.00 (reference)	1.00 (0.90 to 1.10)	1.02 (0.91 to 1.15)	1.11 (0.95 to 1.30)	1.00 (0.95 to 1.05)

Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	1.06 (0.93 to 1.21)	0.97 (0.86 to 1.09)	1.03 (0.93 to 1.15)	1.01 (0.99 to 1.03)
HR (95% CI), model 2	1.00 (reference)	1.09 (0.95 to 1.24)	1.01 (0.90 to 1.14)	1.07 (0.95 to 1.20)	1.00 (0.98 to 1.02)
HR (95% CI), model 3	1.00 (reference)	1.09 (0.95 to 1.25)	1.02 (0.89 to 1.16)	1.08 (0.93 to 1.25)	0.99 (0.96 to 1.03)

Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.94 (0.85 to 1.02)	0.89 (0.79 to 1.00)	0.83 (0.67 to 1.02)	0.95 (0.91 to 0.99)
HR (95% CI), model 2	1.00 (reference)	0.97 (0.88 to 1.06)	0.93 (0.82 to 1.05)	0.84 (0.68 to 1.04)	0.96 (0.92 to 1.00)
HR (95% CI), model 3	1.00 (reference)	0.99 (0.90 to 1.09)	0.97 (0.85 to 1.11)	0.90 (0.71 to 1.14)	0.96 (0.91 to 1.02)

**Any fracture**

Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	1.02 (0.96 to 1.10)	1.01 (0.94 to 1.09)	1.03 (0.95 to 1.12)	1.01 (1.00 to 1.03)
HR (95% CI), model 2	1.00 (reference)	1.02 (0.96 to 1.10)	1.01 (0.93 to 1.08)	1.02 (0.94 to 1.11)	1.01 (0.99 to 1.03)
HR (95% CI), model 3	1.00 (reference)	1.02 (0.95 to 1.10)	0.99 (0.91 to 1.08)	0.99 (0.88 to 1.11)	1.01 (0.98 to 1.05)

Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.97 (0.88 to 1.07)	0.99 (0.91 to 1.07)	0.96 (0.88 to 1.04)	1.00 (0.99 to 1.02)
HR (95% CI), model 2	1.00 (reference)	0.98 (0.89 to 1.09)	1.01 (0.92 to 1.10)	0.96 (0.88 to 1.04)	1.00 (0.98 to 1.01)
HR (95% CI), model 3	1.00 (reference)	0.96 (0.87 to 1.06)	0.96 (0.88 to 1.06)	0.88 (0.79 to 0.98)	0.99 (0.97 to 1.02)

Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.95 (0.89 to 1.01)	0.95 (0.88 to 1.04)	1.07 (0.93 to 1.23)	1.00 (0.98 to 1.03)
HR (95% CI), model 2	1.00 (reference)	0.95 (0.89 to 1.01)	0.95 (0.87 to 1.04)	1.04 (0.90 to 1.20)	1.00 (0.97 to 1.03)

HR (95% CI), model 3 1.00 (reference) 0.94 (0.88 to 1.01) 0.94 (0.86 to 1.04) 1.00 (0.86 to 1.17) 1.01 (0.97 to 1.05)

### Hip fracture

Milk intake	<200 g/d	200 to 399 g/d	400 to 599 g/d	≥600 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.96 (0.83 to 1.11)	1.13 (0.97 to 1.30)	0.97 (0.82 to 1.15)	1.03 (0.99 to 1.07)
HR (95% CI), model 2	1.00 (reference)	0.96 (0.83 to 1.11)	1.13 (0.97 to 1.31)	0.98 (0.82 to 1.17)	1.04 (1.00 to 1.08)
HR (95% CI), model 3	1.00 (reference)	0.95 (0.82 to 1.11)	1.10 (0.93 to 1.31)	0.94 (0.74 to 1.19)	1.06 (0.99 to 1.14)

Cheese intake	<20 g/d	20 to 39 g/d	40 to 59 g/d	≥60 g/d	per 20 g/d
HR (95% CI), model 1	1.00 (reference)	0.75 (0.61 to 0.92)	0.87 (0.74 to 1.03)	0.79 (0.67 to 0.92)	1.00 (0.97 to 1.03)
HR (95% CI), model 2	1.00 (reference)	0.78 (0.63 to 0.95)	0.92 (0.78 to 1.09)	0.81 (0.69 to 0.97)	1.00 (0.97 to 1.03)
HR (95% CI), model 3	1.00 (reference)	0.76 (0.62 to 0.94)	0.88 (0.74 to 1.06)	0.74 (0.60 to 0.92)	1.00 (0.95 to 1.05)

Fermented milk/yogurt intake	<1 g/d	1 to 199 g/d	200 to 399 g/d	≥400 g/d	per 200 g/d
HR (95% CI), model 1	1.00 (reference)	0.84 (0.73 to 0.96)	0.73 (0.60 to 0.88)	1.19 (0.92 to 1.54)	0.97 (0.91 to 1.03)
HR (95% CI), model 2	1.00 (reference)	0.83 (0.72 to 0.96)	0.74 (0.61 to 0.89)	1.18 (0.90 to 1.53)	0.98 (0.92 to 1.04)
HR (95% CI), model 3	1.00 (reference)	0.82 (0.71 to 0.95)	0.71 (0.58 to 0.88)	1.09 (0.81 to 1.47)	1.00 (0.92 to 1.09)

HR: Hazard ratio, CI: confidence interval

\*had access to repeat exposure information, exposures and covariates were treated as cumulative averages

Model 1 adjusted for age, milk, cheese, fermented milk/yogurt

Model 2 adjusted for age, milk, cheese, fermented milk/yogurt, body mass index, height, total energy intake, total alcohol intake, a healthy dietary pattern, calcium and vitamin D supplementation, ever use of cortisone, educational level, living alone, physical activity level estimated as metabolic equivalents, smoking status and Charlson's comorbidity index

Model 3, adjusted according to model 2 but in addition included intake of calcium, vitamin D, phosphorus, total fat, saturated fat, total protein, and retinol

**Table H.** Sensitivity analysis using baseline data from 1987-1990 in the Swedish Mammography Cohort to study the association between milk intake and mortality and fracture

	Categories of daily milk intake				Continuous (per 200 g/d)
	<1 glass (<200 g/d)	1 to 2 glasses (200 to 399 g/d)	2 to 3 glasses (400 to 599 g/d)	≥3 glasses (≥600 g/d)	
N cases	3908	5946	4345	1557	15756
Person-years of follow-up	345082	472600	308015	112094	1237791
Rate/1000 person-years*	11.9	12.2	13.5	15.3	12.7
HR (95% CI), model 1	1.00 (reference)	1.02 (0.98 to 1.07)	1.16 (1.11 to 1.21)	1.33 (1.25 to 1.41)	1.10 (1.08 to 1.11)
HR (95% CI), model 2	1.00 (reference)	1.01 (0.97 to 1.05)	1.10 (1.05 to 1.15)	1.21 (1.14 to 1.29)	1.07 (1.05 to 1.08)
HR (95% CI), model 3	1.00 (reference)	1.03 (0.98 to 1.07)	1.14 (1.08 to 1.21)	1.29 (1.19 to 1.41)	1.10 (1.07 to 1.13)
<b>Total mortality</b>					
N cases	1311	1999	1524	545	5379
Person-years of follow-up	345082	472600	308015	112094	1237791
Rate/1000 person-years*	4.1	4.1	4.7	5.5	4.3
HR (95% CI), model 1	1.00 (reference)	1.01 (0.94 to 1.08)	1.18 (1.10 to 1.27)	1.42 (1.28 to 1.57)	1.12 (1.09 to 1.15)
HR (95% CI), model 2	1.00 (reference)	0.99 (0.92 to 1.06)	1.12 (1.04 to 1.21)	1.27 (1.14 to 1.41)	1.08 (1.05 to 1.12)
HR (95% CI), model 3	1.00 (reference)	1.01 (0.94 to 1.10)	1.19 (1.08 to 1.31)	1.41 (1.22 to 1.63)	1.14 (1.09 to 1.19)
<b>Cardiovascular mortality</b>					
N cases	870	1285	874	298	3327
Person-years of follow-up	345082	472600	308015	112094	1237791
Rate/1000 person-years*	2.6	2.7	2.8	2.8	2.7
HR (95% CI), model 1	1.00 (reference)	1.03 (0.95 to 1.12)	1.09 (0.99 to 1.20)	1.11 (0.98 to 1.27)	1.04 (1.00 to 1.07)
HR (95% CI), model 2	1.00 (reference)	1.04 (0.95 to 1.13)	1.09 (0.99 to 1.20)	1.11 (0.96 to 1.28)	1.03 (1.00 to 1.07)
HR (95% CI), model 3	1.00 (reference)	1.04 (0.95 to 1.15)	1.10 (0.97 to 1.25)	1.13 (0.94 to 1.36)	1.04 (0.98 to 1.09)
<b>Cancer mortality</b>					

		<b>Any fracture</b>			
N cases		4853	6663	4388	1503
Person-years of follow-up		311454	426272	277747	102232
Rate/1000 person-years*		15.9	15.4	15.5	15.4
HR (95% CI), model 1		1.00 (reference)	0.97 (0.93 to 1.00)	0.99 (0.95 to 1.03)	0.98 (0.92 to 1.04)
HR (95% CI), model 2		1.00 (reference)	0.98 (0.94 to 1.02)	1.00 (0.96 to 1.05)	0.99 (0.93 to 1.06)
HR (95% CI), model 3		1.00 (reference)	0.99 (0.95 to 1.03)	1.02 (0.97 to 1.08)	1.03 (0.95 to 1.11)
<b>Hip fracture</b>					
N cases		1136	1673	1141	371
Person-years of follow-up		339753	464390	302452	110381
Rate/1000 person-years*		3.5	3.5	3.6	3.8
HR (95% CI), model 1		1.00 (reference)	0.98 (0.91 to 1.06)	1.04 (0.96 to 1.13)	1.10 (0.98 to 1.24)
HR (95% CI), model 2		1.00 (reference)	0.98 (0.91 to 1.06)	1.01 (0.92 to 1.10)	1.03 (0.90 to 1.16)
HR (95% CI), model 3		1.00 (reference)	1.00 (0.92 to 1.08)	1.04 (0.93 to 1.16)	1.08 (0.91 to 1.27)

CI: confidence interval; HR: hazard ratio

\* Age standardized rates, number of cases per 1000 person-years at risk

Model 1 adjusted for age

Model 2 adjusted for age, body mass index, height, total energy intake, total alcohol intake, a healthy dietary pattern, calcium and vitamin D supplementation, ever use of cortisone, educational level, living alone, physical activity level estimated as metabolic equivalents, smoking status, Charlson's comorbidity index, ever use of oestrogen replacement therapy, and nulliparity.

Model 3, adjusted according to model 2 but in addition included intake of calcium, vitamin D, phosphorus, total fat, saturated fat, total protein, and retinol



**Table 1.** Sensitivity analysis using data from 1997 as baseline in the Swedish Mammography Cohort to study the association between milk intake and mortality and fracture

	Categories of daily milk intake				Continuous (per 200 g/d)
	<1 glass (<200 g/d)	1-2 glasses (200 to 399 g/d)	2-3 glasses (400 to 599 g/d)	≥3 glasses (≥600 g/d)	
N cases	2327	1671	374	107	4479
Person-years of follow-up	235475	130727	30747	7397	404345
Rate/1000 person-years*	10.4	11.8	12.2	14.2	11.1
HR (95% CI), model 1	1.00 (reference)	1.05 (0.98 to 1.13)	1.05 (0.93 to 1.18)	1.27 (1.05 to 1.54)	1.04 (1.00 to 1.07)
HR (95% CI), model 2	1.00 (reference)	1.07 (0.99 to 1.15)	1.01 (0.89 to 1.14)	1.29 (1.06 to 1.57)	1.04 (1.01 to 1.08)
HR (95% CI), model 3	1.00 (reference)	1.08 (1.00 to 1.16)	1.03 (0.90 to 1.17)	1.34 (1.08 to 1.67)	1.05 (1.01 to 1.10)
<b>Total mortality</b>					
N cases	928	674	163	44	1809
Person-years of follow-up	235475	130727	30747	7397	404345
Rate/1000 person-years*	4.2	4.7	5.3	5.7	4.5
HR (95% CI), model 1	1.00 (reference)	1.04 (0.93 to 1.16)	1.06 (0.89 to 1.28)	1.21 (0.89 to 1.64)	1.03 (0.98 to 1.08)
HR (95% CI), model 2	1.00 (reference)	1.05 (0.94 to 1.18)	1.03 (0.85 to 1.24)	1.26 (0.92 to 1.73)	1.04 (0.98 to 1.09)
HR (95% CI), model 3	1.00 (reference)	1.04 (0.93 to 1.18)	1.02 (0.83 to 1.25)	1.26 (0.89 to 1.77)	1.03 (0.97 to 1.10)
<b>Cardiovascular mortality</b>					
N cases	859	566	118	39	1582
Person-years of follow-up	235475	130727	30747	7397	404345
Rate/1000 person-years*	3.8	4.1	3.8	5.4	3.9
HR (95% CI), model 1	1.00 (reference)	1.03 (0.91 to 1.16)	1.03 (0.84 to 1.26)	1.34 (0.98 to 1.85)	1.05 (1.00 to 1.11)
HR (95% CI), model 2	1.00 (reference)	1.02 (0.90 to 1.16)	0.95 (0.77 to 1.17)	1.31 (0.94 to 1.81)	1.04 (0.98 to 1.10)
HR (95% CI), model 3	1.00 (reference)	1.04 (0.91 to 1.19)	0.98 (0.79 to 1.23)	1.39 (0.97 to 1.99)	1.07 (0.99 to 1.15)
<b>Cancer mortality</b>					

		<b>Any fracture</b>		
N cases	5395	3197	713	173
Person-years of follow-up	219672	121611	28746	6936
Rate/1000 person-years*	25.0	25.5	24.8	24.9
HR (95% CI), model 1	1.00 (reference)	0.98 (0.93 to 1.03)	0.97 (0.89 to 1.06)	1.03 (0.89 to 1.20)
HR (95% CI), model 2	1.00 (reference)	0.98 (0.93 to 1.03)	0.96 (0.88 to 1.05)	0.99 (0.85 to 1.16)
HR (95% CI), model 3	1.00 (reference)	1.00 (0.94 to 1.05)	0.99 (0.90 to 1.09)	1.05 (0.89 to 1.24)
				1.05 (1.01 to 1.11)
				1.03 (0.98 to 1.08)
				1.07 (1.01 to 1.14)
				9478
				376965
				25.1
		<b>Hip fracture</b>		
N cases	1112	781	181	37
Person-years of follow-up	233280	129337	30417	7335
Rate/1000 person-years*	5.0	5.5	6.0	4.9
HR (95% CI), model 1	1.00 (reference)	1.07 (0.96 to 1.18)	1.21 (1.03 to 1.43)	1.15 (0.85 to 1.54)
HR (95% CI), model 2	1.00 (reference)	1.05 (0.94 to 1.16)	1.18 (1.00 to 1.40)	1.00 (0.74 to 1.36)
HR (95% CI), model 3	1.00 (reference)	1.09 (0.97 to 1.22)	1.26 (1.05 to 1.52)	1.15 (0.83 to 1.60)
				1.07 (1.01 to 1.14)

CI: confidence interval; HR: hazard ratio

\* Age standardized rates, number of cases per 1000 person-years at risk

Model 1 adjusted for age

Model 2 adjusted for age, body mass index, height, total energy intake, total alcohol intake, a healthy dietary pattern, calcium and vitamin D supplementation, ever use of cortisone, educational level, living alone, physical activity level estimated as metabolic equivalents, smoking status and Charlson's comorbidity index, ever use of oestrogen replacement therapy, and nulliparity.

Model 3, adjusted according to model 2 but in addition included intake of calcium, vitamin D, phosphorus, total fat, saturated fat, total protein and retinol

**Table J.** Change in daily milk and fermented milk consumption between the first and the second food frequency questionnaire within the Swedish Mammography Cohort by change in comorbidity and fracture status between the first and the second food frequency questionnaire

	<b>Change in reported intake</b>		
	Milk (g/d; 95% CI)	Soured milk and yogurt (g/d; 95% CI)	Cheese (g/d; 95% CI)
No new comorbidity	-87 (-85- to -90)	106 (103 to 108)	-24 (-23 to -24)
One new comorbidity	-75 (-64 to -85)	121 (108 to 134)	-19 (-18 to -21)
Two or more new comorbidities	-81 (-71 to -90)	112 (101 to 122)	-20 (-19 to -22)
No fracture	-86 (-84 to -89)	107 (105 to 110)	-23 (-23 to -24)
One new fracture	-76 (-67 to -86)	111 (99 to 124)	-24 (-22 to -26)
One new hip fracture	-101 (-78 to -126)	116 (87 to 145)	-20 (-16 to -24)

CI: confidence interval