Supplementary Materials: Serum Calcium and the Risk of Breast Cancer: Findings from the Swedish AMORIS Study and a Meta-Analysis of Prospective Studies

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Table S1. Univariable association between serum calcium (mmol/L) and participant characteristics.

	β (SE)	*p*-Value
Age (years)—Mean (SD)	2.34 (0.001)	<0.0001
SES		
High	Reference	<0.0001
Low	0.01 (0.0004)	
Unclassified	0.02 (0.0007)	
Education Status		
High	Reference	<0.0001
Middle	0.01 (0.0005)	
Low	0.02 (0.0006)	
Missing	0.02 (0.01)	
Parity		
Yes	Reference	<0.0001
No	0.003 (0.0004)	
Albumin (g/L)—Mean (SD)	1.82 (0.003)	<0.0001
Charlson Comorbidity Index		
0	Reference	<0.0001
1	0.01 (0.001)	
2	0.02 (0.001)	
3+	0.01 (0.002)	
History of Fractures		
Yes	Reference	<0.0001
No	2.38 (0.0002)	
Seasonality		
Spring	Reference	<0.0001
Summer	−0.0003 (0.0005)	
Autumn	0.001 (0.0006)	
Winter	−0.003 (0.0006)	

Table S2. Associations between calcium and breast cancer in AMORIS by menopausal status using age of 50 years. All models are adjusted for age, education, parity, history of fractures, CCI, and season at index examination.

	N (%)		Hazard Ratio (95%CI)
	Breast Cancer	**No Breast Cancer**	
Age < 50			
Calcium, mmol/L			1.20 (0.88–1.63)
Quartiles of calcium			
<2.31	1622 (28.27)	38062 (27.55)	1.00 (Reference)
2.31–2.36	1425 (24.84)	33122 (23.97)	1.04 (0.97–1.12)
2.36–2.44	1489 (25.95)	37619 (27.22)	1.02 (0.95–1.10)
≥2.44	1201 (20.93)	29376 (21.26)	1.05 (0.96–1.13)
p-value for trend			0.37
Calcium according to age-specific cut-offs			
Low	62 (1.08)	1333 (0.96)	1.01 (0.79–1.30)
Normal	5584 (97.33)	134336 (97.22)	1.00 (Reference)
High	91 (1.59)	2510 (1.82)	1.17 (0.95–1.44)
Quartiles of albumin-corrected calcium *			
<2.26	1585 (27.63)	38835 (28.10)	1.00 (Reference)
2.26–2.32	1610 (28.06)	39788 (28.79)	0.95 (0.89–1.02)
2.32–2.38	1378 (24.02)	32514 (23.53)	1.02 (0.95–1.10)
≥2.38	1164 (20.29)	27042 (19.57)	1.01 (0.93–1.09)
p-value for trend			0.30
Age ≥50			
Calcium, mmol/L			0.72 (0.53–0.96)
Quartiles of calcium			
<2.31	1034 (20.17)	14639 (18.16)	1.00 (Reference)
2.31–2.36	991 (19.33)	15987 (19.83)	0.87 (0.80–0.95)
2.36–2.44	1473 (28.74)	22749 (28.21)	0.93 (0.86–1.01)
≥2.44	1628 (31.76)	27257 (33.80)	0.89 (0.82–0.97)
p-value for trend			0.06
Calcium according to age-specific cut-offs			
Low	66 (1.29)	1004 (1.25)	1.20 (0.94–1.53)
Normal	4973 (97.02)	77765 (96.44)	1.00 (Reference)
High	87 (1.70)	1863 (2.31)	0.88 (0.71–1.09)
Quartiles of albumin-corrected calcium *			
<2.26	735 (14.34)	10481 (13.00)	1.00 (Reference)
2.26–2.32	1119 (21.83)	16969 (21.04)	0.93 (0.85–1.02)
2.32–2.38	1319 (25.73)	20579 (25.52)	0.92 (0.84–1.01)
≥2.38	1953 (38.10)	32603 (40.43)	0.92 (0.84–0.99)
p-value for trend			0.05

* Model not adjusted for albumin.

Table S3. Full-texts excluded from qualitative and quantitative analysis.

Study	Reason for Exclusion
Almquist et al. 2010 [1]	case-control study
Almquist et al. 2008 [2]	no data to investigate relationship between serum calcium and breast cancer
Belardi et al. 2013 [3]	serum calcium level measured post-diagnosis
Engel et al. 2010 [4]	serum calcium level measured post-diagnosis
Huss et al. 2014 [5]	investigates relationship between prediagnostic serum calcium levels and breast cancer mortality
Jacot et al. 2011 [6]	retrospective evaluation of patients with breast cancer
Martin et al. 2010 [7]	serum calcium level measured post-diagnosis
Pavithra et al. 2015 [8]	serum calcium level measured post-diagnosis
Proctor et al. 2010 [9]	no data to investigate relationship between serum calcium and breast cancer
Sahmoun et al. 2010 [7]	no data to investigate relationship between serum calcium and breast cancer
Schmidmayr et al. 2013 [10]	no data to investigate relationship between serum calcium and breast cancer
Uusi-Rasi et al. 2013 [11]	no data to investigate relationship between serum calcium and breast cancer
Wulaningsih et al. 2013 [12]	no data to investigate relationship between serum calcium and risk of breast cancer

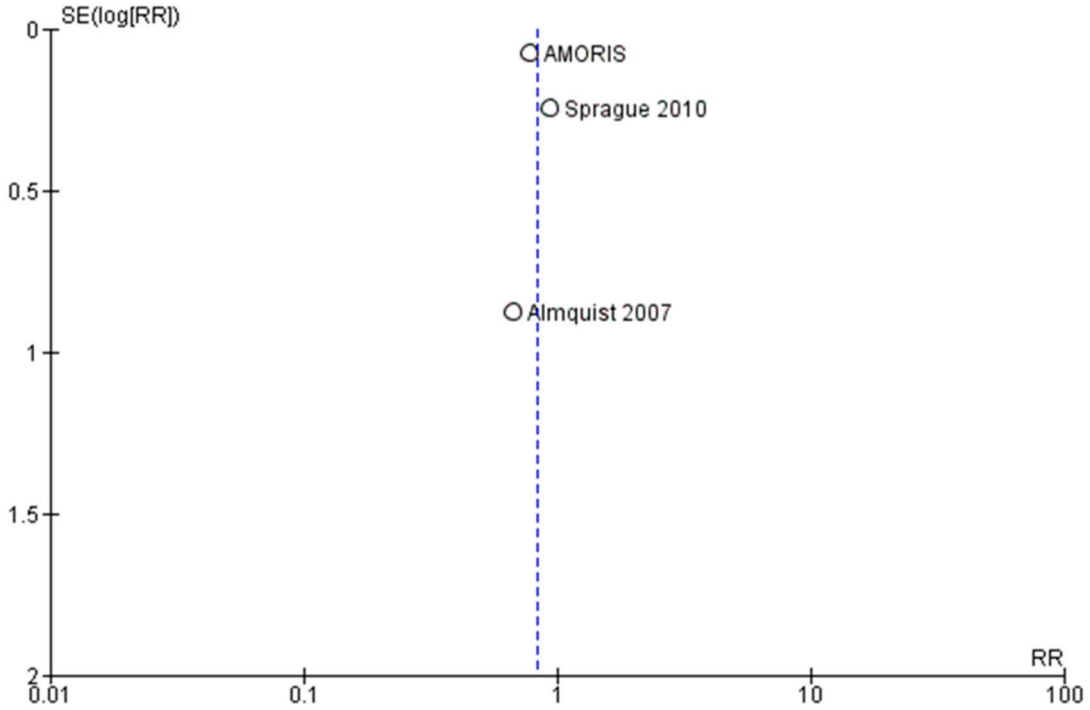

Figure S1. Funnel plot assessing risk of publication bias for studies reporting the association between serum calcium levels and breast cancer risk.

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