

SUPPLEMENTAL MATERIAL

Table 1: Eligibility criteria

Inclusion criteria	Exclusion criteria
Population: Adult (author-defined) humans (adults comprised >80% of the study population)	Narrative reviews
Exposure: Any dairy product consumption (e.g. milk, yogurt, etc.)	Primary research studies (randomized controlled trials, observational studies or qualitative studies)
Outcomes: a. Development of any type of cancer b. All-cause mortality c. Cancer-related mortality	Commentaries/Editorials
Study design: Pooled analyses/ meta-analyses and systematic reviews (PMASRs)	Non-human studies

Table 2: Medline search strategy

Medline Search Strategy	
1	*dairy products/ or cheese/ or milk/
2	*Yogurt/
3	milk?.tw.
4	3 not thistle.tw.
5	(dairy or cheese? or yogurt? or calcium or lactose).tw.
6	(animal adj product?).tw.
7	1 or 2 or 4 or 5 or 6
8	exp Neoplasms/
9	cancer*.tw.
10	neoplasm?.tw.
11	carcinoma?.tw.
12	tumo?r*.tw.
13	8 or 9 or 10 or 11 or 12
14	(hypocalc?emia or hypercalc?emia).tw.
15	osteoporosis.tw.
16	calcificat*.tw.
17	(channel adj3 blocker?).tw.
18	14 or 15 or 16 or 17
19	13 not 18
20	7 and 19
21	exp meta-analysis as topic/
22	(meta adj analy*).tw.
23	metaanaly*.tw.
24	Meta-Analysis/
25	(systematic adj (review? or overview?)).tw.
26	exp Review Literature as Topic/
27	21 or 22 or 23 or 24 or 25 or 26
28	cochrane.ab.
29	embase.ab.
30	(psychlit or psyclit).ab.
31	(psychinfo or psycinfo).ab.
32	(cinahl or cinhal).ab.
33	"science citation index".ab.
34	bids.ab.

35	cancerlit.ab.
36	scopus.ab.
37	"web of science".ab.
38	28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37
39	(reference adj list?).ab.
40	bibliograph*.ab.
41	(hand adj search*).ab.
42	(relevant adj journals).ab.
43	(manual adj search*).ab.
44	39 or 40 or 41 or 42 or 43
45	(selection adj criteria).ab.
46	(data adj extraction).ab.
47	45 or 46
48	Review/
49	47 and 48
50	Comment/
51	Letter/
52	Editorial/
53	animal/
54	human/
55	53 not (53 and 54)
56	50 or 51 or 52 or 55
57	27 or 38 or 44 or 49
58	57 not 56
59	20 and 58

Table 3: Individual characteristics of included PMASRs

Included PMASRs	Study design	Number of databases searched	No. of primary studies included	Type of study designs included	Continents of included studies	Total sample size	Type of dairy exposure	Type of cancer outcome
Aune, 2012	Systematic review and meta-analysis	1	12	Prospective cohort; case-cohort; nested case-control	Europe; North America; Asia	1170942	Total dairy; milk; cheese; high-fat dairy products; low-fat dairy products; cottage cheese; fermented dairy products; fermented milk; yogurt; butter	Colorectal
Aune, 2015	Systematic review and meta-analysis	1	15	Prospective cohort	Europe; North America; Asia; Oceania	848395	Total dairy; milk; whole milk; low-fat milk; cheese; yogurt; skim milk; ice cream; butter; dairy calcium	Prostate
Boyd, 1993	Pooled/meta-	1	10	Case-control;	Europe; Oceania;	29235	Milk; cheese	Breast

	analysis			cohort	Asia; North America			
Cho, 2004	Pooled/ meta- analysis	Not reported	10	Prospective Cohort	North America; Europe	534536	Milk; cheese; cottage or ricota cheese; yogurt	Colorectal
Genkinger, 2006	Pooled/ meta- analysis	Not reported	12	Prospective cohorts (2 were analyzed as case- cohorts)	North America; Europe	553217	Total Milk; Whole milk; Low-fat milk; hard cheese; cottage cheese; yogurt; ice cream; lactose	Ovarian
Genkinger, 2014	Pooled/ meta- analysis	Not reported	13	Prospective cohort	North America; Europe; Oceania	824942	Total milk; whole milk; low-fat milk; cheese; cottage cheese; yogurt; ice cream	Pancreatic
Huncharek, 2009	Pooled/ meta- analysis	4	27	Case-control; cohort	North America; South America; Europe; Asia;	766920	Milk; dairy products	Colorectal

					Oceania			
Huncharek, 2008	Pooled/ meta- analysis	4	21	Case-control; cohort	North America; Asia; Europe; South America; Oceania	117528	Total dairy; milk; cheese	Prostate
Larsson, 2006	Pooled/ meta- analysis	1	12	Case-control; cohort	North America; Europe; Asia; Oceania	179845	Total dairy foods; total milk; skim/low- fat milk; whole milk; yogurt; cheese; lactose	Ovarian
Li, 2011	Pooled/ meta- analysis	3	14	Case-control; cohort	Europe; Asia; North America; South America	201008	Milk; total dairy products; cheese	Bladder
Liu, 2015	Pooled/ meta- analysis	3	14	Case-control	North America; Oceania; Europe	Not reported	Low-fat/skim milk; whole milk; yogurt; lactose	Ovarian
Mao, 2011	Pooled/ meta-	1	16	Case-control; cohort	North America;	371620	Milk; whole milk; skim milk;	Bladder

	analysis				Europe; Asia		cheese; butter; fermented milk	
Missmer, 2002	Pooled/ meta-analysis	Not reported	8	Cohort; nested case-control; case-cohort	North America; Europe	351041	Total dairy fluids; total dairy solids	Breast
Norat, 2003	Pooled/ meta-analysis	Not reported	22	Case-control; cohort	North America; Europe; Asia; Australia; South America	265650	Total dairy products; milk; cheese; yogurt	Colorectal
O'Sullivan, 2013	Pooled/ meta-analysis	5	7	Prospective cohorts	Oceania; Europe; North America; Asia	338421	Milk; butter; cheese; all dairy products	
Qin, 2005	Pooled/ meta-analysis	1	8	Case-control; cohort	Oceania; Asia; North America; Europe	Not extractable	dairy products; milk; whole milk; skim milk; yogurt; cheese; cottage cheese; butter; ice cream	Ovarian
Qin, 2007	Pooled/	1	13	Cohort; nested	North	297119	Dairy products;	Prostate

	meta-analysis analysis			case-control (treated as cohort)	America; Europe		milk; cheese	
Ralston, 2014	Systematic review and meta-analysis	7	14	Cohort	Europe; North America; Asia	892569	nonfermented milk; solid cheese; fermented milk	Colorectal
Sun, 2014	Systematic review and meta-analysis	2	38	Case-control; cohort	North America; Asia; Europe; South America	837424	Dairy products; milk; cheese; yogurt; butter	Gastric
Szilagy, 2006-1	Systematic review and meta-analysis	1	11	Case-control; cohort	North America; Australia; Europe	Not reported	Dairy Products	Colorectal
Szilagy, 2006-2	Systematic review and meta-analysis	1	21	Case-control; cohort	South America; Europe	Not reported	Dairy Products	Colorectal
Szilagy, 2006-3	Systematic review and meta-analysis	1	57	Case-control; cohort	Asia	Not reported	Dairy Products	Colorectal
Tian, 2014	Systematic	3	26	Case-control;	North	230627	Total dairy	Gastric

	review and meta-analysis			cohort	America; Europe; Asia; South America		products; milk; cheese	
Gao, 2006	Pooled/ meta-analysis	1	11	Cohort	North America; Europe; Australia	297529	Dairy products	Prostate
Xiong, 2009	Pooled/ meta-analysis	2	2	Case-control	Asia	Not reported	Milk	Gastric
Guo, 2015	Pooled/ meta-analysis	2	14	Case-control; cohort	Europe; North America; Asia; South America	73664	Total dairy; milk	Gastric
Li, 2014	Systematic review and meta-analysis	2	11	Case-control; cohort	North America; South America; Asia; Europe	244575	Dairy products; milk; cheese; yogurt; butter	Esophageal
Qin, 2004	Pooled/ meta-analysis	1	11	Case-control	Asia; North America; South America;	6949	Milk; dairy products	Prostate

					Europe			
Skinner, 2006	Pooled/ meta- analysis	Not reported	2	Cohort	North America	122198	skim milk	Pancreatic
Caini, 2016	Pooled/ meta- analysis	5	14	Cohort; case- control; case- cohort	Europe; North America; Asia; South America	5120 cases NHL	Dairy products; milk; cheese	Non- Hodgkin Lymphoma
Franceschi, 1991	Pooled/ meta- analysis	Not reported	4	Case-control	Europe	1183	Milk; cheese; butter	Thyroid
Hidayat, 2016	Systematic review and meta- analysis	2	2	cohort	North America; Europe; Asia	92318	Dairy calcium	Breast
Hou, 2015	Systematic review and meta- analysis	3	3	Cohort; case- control; pooled analysis	Europe; North America	252471	Dairy-based fats	Epithelial ovarian
Lane, 2017	Pooled/ meta- analysis	Not Reported	5	Cohort; nested case-control	Europe	5245	Milk; cheese; yogurt; dairy protein	Prostate
Li, 2017	Pooled/ meta- analysis	3	15	Cohort; case- control	Asia; Europe; North	350211	All dairy products	Esophageal

					America			
Lu, 2016	Pooled/ meta- analysis	2	10	cohort	Asia; Europe; North America; Australia	671105	Total dairy; milk; cheese; yogurt; butter	
Wang, 2016	Pooled/ meta- analysis	3	14	Case-control; cohort	North America; Europe; Asia; South America	465988	Total dairy product; milk; cheese; butter; yogurt; ice cream	Non- Hodgkin Lymphoma
Yang, 2016	Systematic review and meta- analysis	2	22	Case-control; cohort	North America; Asia; Europe; South America	258205	Dairy product; milk; cheese; yogurt; low-fat milk	Lung
Yu, 2016	Pooled/ meta- analysis	3	6	Prospective cohort	Asia; Europe	59167	Milk; total dairy products	Lung
Zang, 2015	Systematic review and meta- analysis	3	27	Prospective cohort; case- control	North America; Europe; Asia	1600312	Dairy; whole milk; low fat/skim milk; yogurt; cheese/butter; low-fat dairy;	Breast

							high-fat dairy	
Epstein, 2011	Pooled/ meta- analysis	Not reported	14	Prospective cohort	Not reported	806969	Dietary calcium	Prostate
Jung, 2007	Pooled/ meta- analysis	Not reported	13	Cohort	Europe; North America	760044	Milk	Renal cell
Rosato, 2016	Pooled/ meta- analysis	Not reported	3	Case-control	Europe	10549	Milk and dairy products	Colorectal
Filomeno, 2015	Pooled/ meta- analysis	Not reported	3	Case-control	Europe	5280	Milk and dairy products	Endometrial

Table 4: Summary effect estimates from PMASRs for dairy consumption and risk of cancer

Type of dairy	Type of cancer	Author and year	Effect measure	Point estimate	95% CI (LL)	95% CI (UL)
All dairy products	Colorectal	Aune, 2012	Relative Risk	0.81	0.74	0.9
		Huncharek, 2009	Relative Risk	0.84	0.75	0.95
		Norat, 2003	Odds Ratio	0.92	0.74	1.13
		Szilagyi, 2006	Relative Risk	0.84	0.73	0.97
		Szilagyi, 2006	Relative Risk	0.92	0.79	1.06
		Szilagyi, 2006	Relative Risk	0.8	0.73	0.88
		Rosato, 2016	Odds Ratio	1.09	1	1.19
	Prostate	Aune, 2015	Relative Risk	1.09	1.02	1.17
		Huncharek, 2008	Relative Risk	1.11	1.03	1.19
		Qin, 2007	Relative Risk	1.13	1.02	1.24
		Gao, 2006	Relative Risk	1.09	1	1.2
		Epstein, 2011	Relative Risk	1.08	1.04	1.12
		Qin, 2004	Odds Ratio	1.61	1.22	2.12
		Huncharek, 2008	Relative Risk	1.14	1	1.29
Lane, 2017	Odds Ratio	0.97	0.8	1.18		
Ovarian	Larsson, 2006	Relative Risk	1.17	0.85	1.6	
	Qin, 2005	Relative Risk	1.25	0.76	2.08	
	Hou, 2015	Relative Risk	1.02	0.88	1.18	
Breast	Missmer, 2002	Relative Risk	0.93	0.84	1.03	
	Zang, 2015	Relative Risk	0.9	0.83	0.98	
	Missmer, 2002	Relative Risk	1.01	0.93	1.09	

	Gastric	Sun, 2014	Relative Risk	1.06	0.95	1.18
		Tian, 2014	Odds Ratio	1.09	0.96	1.25
		Guo, 2015	Relative Risk	1.09	0.83	1.43
	Esophageal	Li, 2014	Relative Risk	1.03	0.6	1.77
		Li, 2017	Odds Ratio	0.8	0.71	0.91
	Non-Hodgkin Lymphoma	Caini, 2016	Relative Risk	1.26	0.99	1.6
		Wang, 2016	Relative Risk	1.2	1.02	1.42
	Lung	Yang, 2016	Relative Risk	1.05	0.84	1.31
		Yu, 2016	Relative Risk	0.96	0.89	1.03
	Endometrial	Filomeno, 2015	Odds Ratio	1.19	1.04	1.36
	Bladder	Li, 2011	Relative Risk	0.89	0.77	1.02
Whole Milk	Prostate	Aune, 2015	Relative Risk	0.92	0.85	0.99
	Ovarian	Genkinger, 2006	Relative Risk	0.95	0.73	1.24
		Liu, 2015	Odds Ratio	1.23	1.03	1.46
		Qin, 2005	Relative Risk	1.22	0.94	1.59
		Larsson, 2006	Relative Risk	1.25	1.01	1.56
	Breast	Zang, 2015	Relative Risk	0.99	0.86	1.16
	Bladder	Mao, 2011	Relative Risk	2.23	1.45	3.00
	Pancreatic	Genkinger, 2014	Hazard Ratio	0.98	0.80	1.19
Milk	Colorectal	Cho, 2004	Relative Risk	0.85	0.78	0.94
		Aune, 2012	Relative Risk	0.83	0.74	0.93
		Huncharek, 2009	Relative Risk	0.90	0.83	0.97
		Norat, 2003	Odds Ratio	0.93	0.82	1.05
		Huncharek, 2009	Relative Risk	0.96	0.86	1.06
	Prostate	Qin, 2004	Odds Ratio	1.68	1.34	2.12
		Lane, 2017	Odds Ratio	1.04	0.85	1.28

		Aune, 2015	Relative Risk	1.11	1.03	1.21
		Huncharek, 2008	Relative Risk	1.06	0.91	1.23
		Qin, 2004	Odds Ratio	1.50	1.25	1.80
		Qin, 2007	Relative Risk	1.21	1.00	1.47
		Huncharek, 2008	Relative Risk	1.28	1.06	1.55
	Ovarian	Genkinger, 2006	Relative Risk	1.11	0.87	1.41
		Larsson, 2006	Relative Risk	0.87	0.68	1.10
		Qin, 2005	Relative Risk	0.81	0.61	1.07
	Breast	Boyd, 1993	Relative Risk	1.17	1.04	1.31
		Zang, 2015	Relative Risk	0.94	0.86	1.03
	Gastric	Xiong, 2009	Odds Ratio	0.66	0.51	0.85
		Sun, 2014	Relative Risk	1.11	0.94	1.31
		Tian, 2014	Odds Ratio	1.13	0.95	1.36
		Guo, 2015	Relative Risk	1.28	0.97	1.67
	Esophageal	Li, 2014	Relative Risk	0.93	0.74	1.16
	Non-Hodgkin Lymphoma	Wang, 2016	Relative Risk	1.41	1.08	1.84
		Caini, 2016	Relative Risk	1.12	0.90	1.38
	Lung	Yang, 2016	Relative Risk	1.08	0.80	1.46
		Yu, 2016	Relative Risk	0.95	0.76	1.15
	Bladder	Li, 2011	Relative Risk	0.89	0.77	1.02
		Mao, 2011	Odds Ratio	0.84	0.72	0.97
	Pancreatic	Genkinger, 2014	Hazard Ratio	0.98	0.82	1.18
	Thyroid	Franceschi, 1991	Odds Ratio	1.10		
	Renal Cell	Jung, 2007	Relative Risk	0.98	0.84	1.14
	Multiple Myeloma	Caini, 2016	Relative Risk	1.08	0.46	2.54
Fermented Milk	Colorectal	Ralston, 2014	Relative Risk	1.01	0.89	1.15

		Aune, 2012	Relative Risk	0.93	0.78	1.11
	Bladder	Mao, 2011	Relative Risk	0.69	0.47	0.91
Non-Fermented Milk	Colorectal	Ralston, 2014	Relative Risk	0.85	0.77	0.93
Low Fat Milk	Prostate	Aune, 2015	Relative Risk	1.14	1.05	1.25
	Ovarian	Liu, 2015	Odds Ratio	0.925	0.789	1.085
		Genkinger, 2006	Relative Risk	1.07	0.93	1.23
		Larsson, 2006	Relative Risk	0.94	0.75	1.17
	Breast	Zang, 2015	Relative Risk	0.93	0.84	1.02
	Lung	Yang, 2016	Relative Risk	0.98	0.69	1.41
	Pancreatic	Genkinger, 2014	Hazard Ratio	0.93	0.80	1.08
Skim Milk	Prostate	Aune, 2015	Relative Risk	1.14	0.88	1.49
	Ovarian	Qin, 2005	Relative Risk	0.89	0.65	1.21
	Bladder	Mao, 2011	Relative Risk	0.47	0.18	0.79
	Pancreatic	Skinner, 2006	Relative Risk	0.83	0.63	1.10
Yogurt	Colorectal	Cho, 2004	Relative Risk	0.93	0.83	1.03
		Norat, 2003	Odds Ratio	0.95	0.87	1.04
		Aune, 2012	Relative Risk	1.00	0.67	1.48
	Prostate	Lane, 2017	Odds Ratio	0.92	0.79	1.08
		Aune, 2015	Relative Risk	1.12	0.97	1.29
	Ovarian	Liu, 2015	Odds Ratio	1.124	0.860	1.469
		Larsson, 2006	Relative Risk	1.13	0.96	1.33
		Qin, 2005	Relative Risk	1.11	0.97	1.26
		Genkinger, 2006	Relative Risk	1.04	0.81	1.08
	Breast	Zang, 2015	Relative Risk	0.91	0.83	0.99
	Gastric	Sun, 2014	Relative Risk	0.77	0.58	1.03
	Esophageal	Li, 2014	Relative Risk	0.73	0.54	0.98

	Non-Hodgkin Lymphoma	Wang, 2016	Relative Risk	0.78	0.54	1.12
	Lung	Yang, 2016	Relative Risk	0.88	0.62	1.25
	Pancreatic	Genkinger, 2014	Hazard Ratio	0.93	0.81	1.08
Cheese	Colorectal	Cho, 2004	Relative Risk	1.10	0.98	1.24
		Aune, 2012	Relative Risk	0.94	0.75	1.18
		Norat, 2003	Odds Ratio	1.07	0.92	1.25
	Prostate	Qin, 2007	Relative Risk	1.18	1.03	1.32
		Lane, 2017	Odds Ratio	0.95	0.77	1.16
		Huncharek, 2008	Relative Risk	1.11	0.99	1.25
		Aune, 2015	Relative Risk	1.07	1.01	1.13
		Huncharek, 2008	Relative Risk	0.74	0.62	0.87
	Ovarian	Larsson, 2006	Relative Risk	0.95	0.80	1.12
		Qin, 2005	Relative Risk	0.93	0.75	1.17
	Breast	Boyd, 1993	Relative Risk	1.17	1.02	1.36
		Zang, 2015	Relative Risk	0.98	0.89	1.07
	Gastric	Sun, 2014	Relative Risk	0.95	0.80	1.12
		Tian, 2014	Odds Ratio	0.98	0.69	1.39
	Esophageal	Li, 2014	Relative Risk	0.84	0.61	1.15
	Non-Hodgkin Lymphoma	Caini, 2016	Relative Risk	1.13	0.91	1.41
		Wang, 2016	Relative Risk	1.14	0.96	1.34
	Lung	Yang, 2016	Relative Risk	0.83	0.62	1.12
	Bladder	Li, 2011	Relative Risk	0.76	0.47	1.21
		Mao, 2011	Odds Ratio	0.96	0.68	1.24
	Pancreatic	Genkinger, 2014	Hazard Ratio	1.26	0.91	1.76
	Thyroid	Franceschi, 1991	Odds Ratio	1.4		

	Multiple Myeloma	Caini, 2016	Relative Risk	0.94	0.36	2.41
Hard Cheese	Ovarian	Genkinger, 2006	Relative Risk	1.30	0.96	1.78
Cottage Cheese	Colorectal	Aune, 2012	Relative Risk	0.82	0.59	1.14
		Cho, 2004	Relative Risk	0.83	0.72	0.96
	Ovarian	Genkinger, 2006	Relative Risk	0.88	0.63	1.23
		Qin, 2005	Relative Risk	1.15	0.92	1.43
	Pancreatic	Genkinger, 2014	Hazard Ratio	0.90	0.64	1.28
Butter	Colorectal	Aune, 2012	Relative Risk	0.91	0.58	1.43
	Prostate	Aune, 2015	Relative Risk	1.03	0.89	1.20
	Ovarian	Qin, 2005	Relative Risk	1.24	0.89	1.70
	Gastric	Sun, 2014	Relative Risk	1.35	0.88	2.08
	Esophageal	Li, 2014	Relative Risk	1.77	0.84	3.75
	Non-Hodgkin Lymphoma	Wang, 2016	Relative Risk	1.31	1.04	1.65
	Bladder	Mao, 2011	Relative Risk	1.19	0.81	1.58
	Thyroid	Franceschi, 1991	Odds Ratio	2.8		
Solid Cheese	Colorectal	Ralston, 2014	Relative Risk	1.11	0.90	1.36
Dairy Calcium	Prostate	Aune, 2015	Relative Risk	1.13	1.02	1.24
	Breast	Hidayat, 2016	Relative Risk	0.80	0.53	1.21
Ice Cream	Prostate	Aune, 2015	Relative Risk	0.95	0.83	1.09
	Ovarian	Genkinger, 2006	Relative Risk	0.91	0.63	1.32
		Qin, 2005	Relative Risk	1.06	0.80	1.40
	Non-Hodgkin Lymphoma	Wang, 2016	Relative Risk	1.57	1.11	2.20
	Pancreatic	Genkinger, 2014	Hazard Ratio	1.01	0.84	1.22
Fermented Dairy	Colorectal	Cho, 2004	Relative Risk	0.91	0.82	1.00
		Aune, 2012	Relative Risk	0.97	0.83	1.13

Low-Fat Dairy	Colorectal	Aune, 2012	Relative Risk	0.97	0.74	1.28
	Breast	Zang, 2015	Relative Risk	0.85	0.75	0.96
High-Fat Dairy	Colorectal	Aune, 2012	Relative Risk	0.74	0.53	1.02
	Breast	Zang, 2015	Relative Risk	1.04	0.88	1.23
Lactose	Ovarian	Liu, 2015	Odds Ratio	1.084	0.924	1.272
		Larsson, 2006	Relative Risk	1.01	0.85	1.21
		Genkinger, 2006	Relative Risk	1.19	1.01	1.40

Table 5: Summary effect estimates from included PMASRs with highest AMSTAR score

Type of dairy	Type of cancer	Author and year	AMSTAR score	Effect measure	Point estimate	95% CI (LL)	95% CI (UL)
All dairy products	Colorectal	Aune, 2012	8	Relative Risk	0.81	0.74	0.9
	Prostate	Aune, 2015	7	Relative Risk	1.09	1.02	1.17
		Gao, 2006	7	Relative Risk	1.09	1	1.2
	Ovarian	Hou, 2015	6	Relative Risk	1.02	0.88	1.18
	Breast	Zang, 2015	7	Relative Risk	0.9	0.83	0.98
	Gastric	Guo, 2015	8	Relative Risk	1.09	0.83	1.43
	Esophageal	Li, 2014	7	Relative Risk	1.03	0.6	1.77
		Li, 2017	7	Odds Ratio	0.8	0.71	0.91
	Non-Hodgkin Lymphoma	Caini, 2016	6	Relative Risk	1.26	0.99	1.6
	Lung	Yang, 2016	6	Relative Risk	1.05	0.84	1.31
	Endometrial	Filomeno, 2015	1	Odds Ratio	1.19	1.04	1.36
	Bladder	Li, 2011	7	Relative Risk	0.89	0.77	1.02
Whole Milk	Prostate	Aune, 2015	7	Relative Risk	0.92	0.85	0.99
	Ovarian	Genkinger, 2006	5	Relative Risk	0.95	0.73	1.24
	Breast	Zang, 2015	7	Relative Risk	0.99	0.86	1.16
	Bladder	Mao, 2011	5	Relative Risk	2.23	1.45	3.00
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	0.98	0.80	1.19
Milk	Colorectal	Aune, 2012	8	Relative Risk	0.83	0.74	0.93
	Prostate	Aune, 2015	7	Relative Risk	1.11	1.03	1.21

	Ovarian	Genkinger, 2006	5	Relative Risk	1.11	0.87	1.41
		Larsson, 2006	5	Relative Risk	0.87	0.68	1.10
	Breast	Zang, 2015	7	Relative Risk	0.94	0.86	1.03
	Gastric	Guo, 2015	8	Relative Risk	1.28	0.97	1.67
	Esophageal	Li, 2014	7	Relative Risk	0.93	0.74	1.16
	Non-Hodgkin Lymphoma	Caini, 2016	6	Relative Risk	1.12	0.90	1.38
	Lung	Yang, 2016	6	Relative Risk	1.08	0.80	1.46
	Bladder	Li, 2011	7	Relative Risk	0.89	0.77	1.02
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	0.98	0.82	1.18
	Thyroid	Franceschi, 1991	1	Odds Ratio	1.10		
	Renal Cell	Jung, 2007	2	Relative Risk	0.98	0.84	1.14
	Multiple Myeloma	Caini, 2016	6	Relative Risk	1.08	0.46	2.54
Fermented Milk	Colorectal	Aune, 2012	8	Relative Risk	0.93	0.78	1.11
	Bladder	Mao, 2011	5	Relative Risk	0.69	0.47	0.91
Non-Fermented Milk	Colorectal	Ralston, 2014	6	Relative Risk	0.85	0.77	0.93
Low-Fat Milk	Prostate	Aune, 2015	7	Relative Risk	1.14	1.05	1.25
	Ovarian	Genkinger, 2006	5	Relative Risk	1.07	0.93	1.23
		Larsson, 2006	5	Relative Risk	0.94	0.75	1.17
	Breast	Zang, 2015	7	Relative Risk	0.93	0.84	1.02
	Lung	Yang, 2016	6	Relative Risk	0.98	0.69	1.41
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	0.93	0.80	1.08
Skim Milk	Prostate	Aune, 2015	7	Relative Risk	1.14	0.88	1.49
	Ovarian	Qin, 2005	3	Relative Risk	0.89	0.65	1.21
	Bladder	Mao, 2011	5	Relative Risk	0.47	0.18	0.79
	Pancreatic	Skinner, 2006	2	Relative Risk	0.83	0.63	1.10

Yogurt	Colorectal	Aune, 2012	8	Relative Risk	1.00	0.67	1.48
	Prostate	Aune, 2015	7	Relative Risk	1.12	0.97	1.29
	Ovarian	Larsson, 2006	5	Relative Risk	1.13	0.96	1.33
		Genkinger, 2006	5	Relative Risk	1.04	0.81	1.08
	Breast	Zang, 2015	7	Relative Risk	0.91	0.83	0.99
	Gastric	Sun, 2014	5	Relative Risk	0.77	0.58	1.03
	Esophageal	Li, 2014	7	Relative Risk	0.73	0.54	0.98
	Non-Hodgkin Lymphoma	Wang, 2016	5	Relative Risk	0.78	0.54	1.12
	Lung	Yang, 2016	6	Relative Risk	0.88	0.62	1.25
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	0.93	0.81	1.08
Cheese	Colorectal	Aune, 2012	8	Relative Risk	0.94	0.75	1.18
	Prostate	Aune, 2015	7	Relative Risk	1.07	1.01	1.13
	Ovarian	Larsson, 2006	5	Relative Risk	0.95	0.80	1.12
	Breast	Zang, 2015	7	Relative Risk	0.98	0.89	1.07
	Gastric	Tian, 2014	7	Odds Ratio	0.98	0.69	1.39
	Esophageal	Li, 2014	7	Relative Risk	0.84	0.61	1.15
	Non-Hodgkin Lymphoma	Caini, 2016	6	Relative Risk	1.13	0.91	1.41
	Lung	Yang, 2016	6	Relative Risk	0.83	0.62	1.12
	Bladder	Li, 2011	7	Relative Risk	0.76	0.47	1.21
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	1.26	0.91	1.76
	Thyroid	Franceschi, 1991	1	Odds Ratio	1.4		
	Multiple Myeloma	Caini, 2016	6	Relative Risk	0.94	0.36	2.41
Hard Cheese	Ovarian	Genkinger, 2006	5	Relative Risk	1.30	0.96	1.78
Cottage Cheese	Colorectal	Aune, 2012	8	Relative Risk	0.82	0.59	1.14

	Ovarian	Genkinger, 2006	5	Relative Risk	0.88	0.63	1.23
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	0.90	0.64	1.28
Butter	Colorectal	Aune, 2012	8	Relative Risk	0.91	0.58	1.43
	Prostate	Aune, 2015	7	Relative Risk	1.03	0.89	1.20
	Ovarian	Qin, 2005	3	Relative Risk	1.24	0.89	1.70
	Gastric	Sun, 2014	5	Relative Risk	1.35	0.88	2.08
	Esophageal	Li, 2014	7	Relative Risk	1.77	0.84	3.75
	Non-Hodgkin Lymphoma	Wang, 2016	5	Relative Risk	1.31	1.04	1.65
	Bladder	Mao, 2011	5	Relative Risk	1.19	0.81	1.58
	Thyroid	Franceschi, 1991	1	Odds Ratio	2.8		
Solid Cheese	Colorectal	Ralston, 2014	6	Relative Risk	1.11	0.90	1.36
Dairy Calcium	Prostate	Aune, 2015	7	Relative Risk	1.13	1.02	1.24
	Breast	Hidayat, 2016	7	Relative Risk	0.80	0.53	1.21
Ice Cream	Prostate	Aune, 2015	7	Relative Risk	0.95	0.83	1.09
	Ovarian	Genkinger, 2006	5	Relative Risk	0.91	0.63	1.32
	Non-Hodgkin Lymphoma	Wang, 2016	5	Relative Risk	1.57	1.11	2.20
	Pancreatic	Genkinger, 2014	3	Hazard Ratio	1.01	0.84	1.22
Fermented Dairy	Colorectal	Aune, 2012	8	Relative Risk	0.97	0.83	1.13
Low-Fat Dairy	Colorectal	Aune, 2012	8	Relative Risk	0.97	0.74	1.28
	Breast	Zang, 2015	7	Relative Risk	0.85	0.75	0.96
High-Fat Dairy	Colorectal	Aune, 2012	8	Relative Risk	0.74	0.53	1.02
	Breast	Zang, 2015	7	Relative Risk	1.04	0.88	1.23
Lactose	Ovarian	Larsson, 2006	5	Relative Risk	1.01	0.85	1.21
		Genkinger, 2006	5	Relative Risk	1.19	1.01	1.40

Table 6: Summary effect estimates for dairy consumption and risk of cancer specifically from systematic reviews and meta-analyses

Type of dairy	Type of cancer	Author and year	Effect measure	Point estimate	95% CI (LL)	95% CI (UL)	
All dairy products	Colorectal	Aune, 2012	Relative Risk	0.81	0.74	0.9	
		Szilagyi, 2006	Relative Risk	0.84	0.73	0.97	
		Szilagyi, 2006	Relative Risk	0.92	0.79	1.06	
		Szilagyi, 2006	Relative Risk	0.8	0.73	0.88	
	Prostate	Aune, 2015	Relative Risk	1.09	1.02	1.17	
	Ovarian	Hou, 2015	Relative Risk	1.02	0.88	1.18	
	Breast	Zang, 2015	Relative Risk	0.9	0.83	0.98	
	Gastric	Sun, 2014	Relative Risk	1.06	0.95	1.18	
		Tian, 2014	Odds Ratio	1.09	0.96	1.25	
	Esophageal	Li, 2014	Relative Risk	1.03	0.6	1.77	
	Lung	Yang, 2016	Relative Risk	1.05	0.84	1.31	
	Whole Milk	Prostate	Aune, 2015	Relative Risk	0.92	0.85	0.99
		Breast	Zang, 2015	Relative Risk	0.99	0.86	1.16
	Milk	Colorectal	Aune, 2012	Relative Risk	0.83	0.74	0.93
Prostate		Aune, 2015	Relative Risk	1.11	1.03	1.21	
Breast		Zang, 2015	Relative Risk	0.94	0.86	1.03	
Gastric		Sun, 2014	Relative Risk	1.11	0.94	1.31	
		Tian, 2014	Odds Ratio	1.13	0.95	1.36	
Esophageal		Li, 2014	Relative Risk	0.93	0.74	1.16	
	Lung	Yang, 2016	Relative Risk	1.08	0.80	1.46	
	Colorectal	Ralston, 2014	Relative Risk	1.01	0.89	1.15	

		Aune, 2012	Relative Risk	0.93	0.78	1.11
Non-Fermented Milk	Colorectal	Ralston, 2014	Relative Risk	0.85	0.77	0.93
Low Fat Milk	Prostate	Aune, 2015	Relative Risk	1.14	1.05	1.25
	Breast	Zang, 2015	Relative Risk	0.93	0.84	1.02
	Lung	Yang, 2016	Relative Risk	0.98	0.69	1.41
Skim Milk	Prostate	Aune, 2015	Relative Risk	1.14	0.88	1.49
Yogurt	Colorectal	Aune, 2012	Relative Risk	1.00	0.67	1.48
	Prostate	Aune, 2015	Relative Risk	1.12	0.97	1.29
	Breast	Zang, 2015	Relative Risk	0.91	0.83	0.99
	Gastric	Sun, 2014	Relative Risk	0.77	0.58	1.03
	Esophageal	Li, 2014	Relative Risk	0.73	0.54	0.98
	Lung	Yang, 2016	Relative Risk	0.88	0.62	1.25
Cheese	Colorectal	Aune, 2012	Relative Risk	0.94	0.75	1.18
	Prostate	Aune, 2015	Relative Risk	1.07	1.01	1.13
	Breast	Zang, 2015	Relative Risk	0.98	0.89	1.07
	Gastric	Sun, 2014	Relative Risk	0.95	0.80	1.12
		Tian, 2014	Odds Ratio	0.98	0.69	1.39
	Esophageal	Li, 2014	Relative Risk	0.84	0.61	1.15
	Lung	Yang, 2016	Relative Risk	0.83	0.62	1.12
Cottage Cheese	Colorectal	Aune, 2012	Relative Risk	0.82	0.59	1.14
Butter	Colorectal	Aune, 2012	Relative Risk	0.91	0.58	1.43
	Prostate	Aune, 2015	Relative Risk	1.03	0.89	1.20
	Gastric	Sun, 2014	Relative Risk	1.35	0.88	2.08
	Esophageal	Li, 2014	Relative Risk	1.77	0.84	3.75
Solid Cheese	Colorectal	Ralston, 2014	Relative Risk	1.11	0.90	1.36
Dairy Calcium	Prostate	Aune, 2015	Relative Risk	1.13	1.02	1.24

	Breast	Hidayat, 2016	Relative Risk	0.80	0.53	1.21
Ice Cream	Prostate	Aune, 2015	Relative Risk	0.95	0.83	1.09
Fermented Dairy	Colorectal	Aune, 2012	Relative Risk	0.97	0.83	1.13
Low-Fat Dairy	Colorectal	Aune, 2012	Relative Risk	0.97	0.74	1.28
	Breast	Zang, 2015	Relative Risk	0.85	0.75	0.96
High-Fat Dairy	Colorectal	Aune, 2012	Relative Risk	0.74	0.53	1.02
	Breast	Zang, 2015	Relative Risk	1.04	0.88	1.23

Xiong, 2009	No	No	No	No	No	No	No	No	No	Yes	Yes	No	2
Guo, 2015	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	8
Li, 2014	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	7
Qin, 2004	No	No	No	No	Yes	Yes	No	No	Yes	No	No	No	3
Skinner, 2006	No	No	No	No	No	Yes	No	No	Yes	No	No	No	2
Caini, 2016	No	CA	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	6
Franceschi, 1991	No	No	No	No	No	Yes	No	No	No	No	No	No	1
Hidayat, 2016	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	7
Hou, 2015	No	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	6
Lane, 2017	No	No	No	No	No	Yes	No	No	No	No	No	Yes	2
Li, 2017	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	7
Lu, 2016	No	CA	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	6
Wang, 2016	No	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	No	5
Yang, 2016	No	CA	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	6
Yu, 2016	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	5
Zang, 2015	No	CA	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	7
Epstein, 2011	No	No	No	No	No	No	No	No	Yes	No	No	No	1
Jung, 2007	No	No	No	No	No	Yes	No	No	Yes	No	No	No	2
Rosato, 2016	No	No	No	No	No	Yes	No	No	No	No	No	No	1
Filomeno, 2015	No	No	No	No	No	No	No	No	Yes	No	No	No	1

CA – Can't answer

Table 8: Summary effect estimates from PMASRs for dairy consumption and risk of all-cause or cancer-specific mortality

Type of dairy	Mortality	Author and year	Effect measure	Point estimate	95% CI (LL)	95% CI (UL)
All dairy products	All-Cause Mortality	O'Sullivan, 2013	Relative Risk	0.64	0.31	1.29
Milk	All-Cause Mortality	O'Sullivan, 2013	Relative Risk	1.01	0.92	1.11
Cheese	All-Cause Mortality	O'Sullivan, 2013	Relative Risk	1.03	0.97	1.09
Butter	All-Cause Mortality	O'Sullivan, 2013	Relative Risk	0.96	0.85	1.08
Milk	Cancer-Specific Mortality	O'Sullivan, 2013	Risk Ratio	1.01	0.82	1.23
All dairy products	Cancer-Specific Mortality	Lu, 2016	Relative Risk	0.99	0.92	1.07
Milk	Cancer-Specific Mortality	Lu, 2016	Relative Risk	0.97	0.92	1.03
Yogurt	Cancer-Specific Mortality	Lu, 2016	Relative Risk	0.88	0.71	1.10
Cheese	Cancer-Specific Mortality	Lu, 2016	Relative Risk	1.23	0.94	1.61
Butter	Cancer-Specific Mortality	Lu, 2016	Relative Risk	1.13	0.89	1.44
All dairy products	Lung cancer-Specific Mortality	Yang, 2016	Relative Risk	0.62	0.45	0.84
Milk	Lung cancer-Specific Mortality	Yang, 2016	Relative Risk	0.81	0.65	1.02
Cheese	Lung cancer-Specific Mortality	Yang, 2016	Relative Risk	0.63	0.46	0.87